

B . B . Dikshit Librar
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List of publications of AIIMS, New Delhi
for the month of January, 2019
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1: Agarwal N, Raheja A. Bobblehead-Doll Syndrome. *N Engl J Med*. 2019 Jan 31;380(5):e5. doi: 10.1056/NEJMicm1808747. PubMed PMID: 30699323.

2: Agarwal S, Bychkov A, Jung CK, Hirokawa M, Lai CR, Hong S, Kwon HJ, Rangdaeng S, Liu Z, Su P, Kakudo K, Jain D. The prevalence and surgical outcomes of Hürthle cell lesions in FNAs of the thyroid: A multi-institutional study in 6 Asian countries. *Cancer Cytopathol*. 2019 Mar;127(3):181-191. doi: 10.1002/cncy.22101. Epub 2019 Jan 22. PubMed PMID: 30668897.

BACKGROUND: Hürthle cell-rich nodules (HCNs) encompass non-neoplastic to malignant lesions. There is paucity of literature on the frequency distribution of HCNs among Bethesda categories, histologic follow-up, risk of malignancy (ROM), and risk of neoplasia (RON). The objective of this retrospective, multi-institutional study was to determine the prevalence of the cytologic diagnostic category and surgical outcomes of patients with HCN.

METHODS: Nine tertiary health centers representing 6 Asian countries participated. Cases were retrieved from respective databases. The Bethesda System for Reporting Thyroid Cytopathology was used. Cytology results were correlated with surgical diagnoses.

RESULTS: Of 42,190 thyroid aspirates retrieved, 760 (1.8%) had a Hürthle cell predominance. Most (61%) were categorized as atypia of undetermined significance/follicular lesion of undetermined significance, Hürthle cell type" (AUS-H); 35% were categorized as follicular neoplasm, Hürthle cell type (FN-H); and 4% were categorized as suspicious for malignancy (SFM). Histologic follow-up was available for 288 aspirates (38%). Most were benign on resection (66%), and the most common histologic diagnosis was Hürthle cell adenoma (28.5%). The ROM for AUS-H, FN-H, and SFM, as calculated on resected nodules, was 32%, 31%, and 71%, respectively; and the RON was 47%, 81%, and 77%, respectively. The 5 institutions that had an AUS-H:HCN ratio below 0.5 diagnosed HCN less frequently as AUS-H than as FN-H.

CONCLUSIONS: This is the largest, contemporary, multi-institutional series of HCNs with surgical follow-up. Although there was wide interinstitutional variation in prevalence and surgical outcomes, there was no significant difference in the ROM among institutions. The categories AUS-H and FN-H had a similar ROM for resected nodules.

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3: Agarwal S, Sasi A, Ray A, Jadon RS, Vikram N. Pancreatitis panniculitis polyarthrititis syndrome with multiple bone infarcts. *QJM*. 2019 Jan 1;112(1):43-44. doi: 10.1093/qjmed/hcy244. PubMed PMID: 30351366.

4: Aggarwal A, Jana M, Srivastava DN, Sharma R, Gamanagatti S, Kumar A, Kumar V, Malhotra R, Garg K. Magnetic resonance neurography and ultrasonogram findings in upper limb peripheral neuropathies. *Neurol India*. 2019 Jan-Feb;67(Supplement):S125-S134. doi: 10.4103/0028-3886.250701. PubMed PMID: 30688246.

Peripheral neuropathy is defined as any disease or damage to the peripheral nerves. Imaging modalities are emerging as a complementary tool of choice for diagnosis of peripheral neuropathies. This has been made possible by the advent of high-resolution ultrasound, higher field strength magnets, better surface array coils, and superior software. In addition, imaging plays a pivotal role in deciding the management. They help in determining the continuity and course of the nerve, thereby helping in the pre-surgical mapping of nerve. Imaging studies also help in prognosticating the recovery by determining the event to be acute or chronic. This article describes the imaging findings of various neuropathies affecting upper limb peripheral nerves, broadly categorized as traumatic and non-traumatic. The non-traumatic group is further divided as entrapment,

infective, inflammatory and tumors.

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Conflict of interest statement: None

5: Agrawal A, Mahey R, Kachhawa G, Khadgawat R, Vanamail P, Kriplani A. Comparison of metformin plus myoinositol vs metformin alone in PCOS women undergoing ovulation induction cycles: randomized controlled trial. *Gynecol Endocrinol*. 2019 Jun;35(6):511-514. doi: 10.1080/09513590.2018.1549656. Epub 2019 Jan 7. PubMed PMID: 30614289.

The present study was planned to evaluate the benefit of synergetic effect of Metformin plus Myo-inositol versus Metformin alone in infertile polycystic ovarian syndrome (PCOS) women undergoing ovulation induction. One hundred and twenty infertile PCOS women were randomized: Group I (n=60) received Metformin (500mg) plus Myoinositol(600mg) three times a day; Group II received Metformin 500mg three times a day. Subjects were advised to try for spontaneous conception. Those who did not conceive after 3months, were given three cycles of ovulation induction+intrauterine insemination. Hormonal and biochemical profile parameters were done at baseline and after 3months of therapy. Primary outcome measure was live birth rate. Secondary outcomes were improvement in menstrual cycle, hormonal and biochemical parameters, spontaneous conception, abortions, multiple pregnancy, and ovarian hyperstimulation syndrome. Baseline demographic, hormonal and biochemical parameters were comparable in two groups. There was a significant improvement in menstrual cycles (cycle length and bleeding days) in Group I as compared to Group II. The improvement in biochemical and hormonal parameters were comparable in the two groups after 3 months. Live birth rate was significantly higher in the Group I as compared to Group II [55% (33/60); 26.67% (16/60); p=.002]. The study concluded significantly higher live birth rate in women receiving the combination as compared to metformin alone.

6: Alanee S, Alvarado-Cabrero I, Murugan P, Kumar R, Nepple KG, Paner GP, Patel MI, Raspollini MR, Lopez-Beltran A, Konety BR. Update of the International Consultation on Urological Diseases on bladder cancer 2018: non-urothelial cancers of the urinary bladder. *World J Urol*. 2019 Jan;37(1):107-114. doi: 10.1007/s00345-018-2421-5. Epub 2018 Aug 1. Review. PubMed PMID: 30069580.

PURPOSE: To provide a comprehensive update of the joint consultation of the International Consultation on Urological Diseases (ICUD) for the diagnosis and management of non-urothelial cancer of the urinary bladder.

METHODS: A detailed analysis of the literature was conducted reporting on the epidemiology, etiology, diagnosis, treatment and outcomes of non-urothelial cancer of the urinary bladder. An international, multidisciplinary expert committee evaluated and graded the evidence according to the Oxford System of Evidence-based Medicine modified by the ICUD.

RESULTS: The major non-urothelial cancers of the urinary bladder are squamous cell carcinoma, adenocarcinoma, and neuroendocrine tumors. Several other non-urothelial tumors are rare but important to identify because of their aggressive behavior when compared to urothelial bladder tumors. Radical cystectomy and urinary diversion, preceded by neoadjuvant radiation or chemotherapy in some of these tumors, is the main method or treatment for resectable disease. Adjuvant therapy is not usually successful and no novel targeted or immunotherapeutic agents have been identified to provide benefit. Patients with small cell neuroendocrine tumors of the bladder should be offered chemotherapy before surgery. Because non-urothelial cancers are usually locally advanced and/or metastatic at the time of diagnosis, 5-year survival is generally poor.

CONCLUSIONS: Non-urothelial cancers of the urinary bladder are rare and mostly lack established protocols for treatment. The prognosis of most of these tumors is poor because they are usually advanced at the time of diagnosis. A multimodal treatment approach should be considered to improve outcomes.

7: Ambrosy AP, Stevens SR, Al-Khalidi HR, Rouleau JL, Bouabdallaoui N, Carson PE, Adlbrecht C, Cleland JGF, Dabrowski R, Golba KS, Pina IL, Sueta CA, Roy A, Sopko G, Bonow RO, Velazquez EJ; STICH Trial Investigators. Burden of medical co-morbidities and benefit from surgical revascularization in patients with ischaemic cardiomyopathy. *Eur J Heart Fail*. 2019 Mar;21(3):373-381. doi: 10.1002/ejhf.1404. Epub 2019 Jan 30. PubMed PMID: 30698316.

AIMS: The landmark STICH trial found that surgical revascularization compared to medical therapy alone improved survival in patients with heart failure (HF) of ischaemic aetiology and an ejection fraction (EF) $\leq 35\%$. However, the interaction between the burden of medical co-morbidities and the benefit from surgical revascularization has not been previously described in patients with ischaemic cardiomyopathy.

METHODS AND RESULTS: The STICH trial (ClinicalTrials.gov Identifier: NCT00023595) enrolled patients ≥ 18 years of age with coronary artery disease amenable to coronary artery bypass grafting (CABG) and an EF $\leq 35\%$. Eligible participants were randomly assigned 1:1 to receive medical therapy (MED) (n=602) or MED/CABG (n=610). A modified Charlson co-morbidity index (CCI) based on the availability of data and study definitions was calculated by summing the weighted points for all co-morbid conditions. Patients were divided into mild/moderate (CCI 1-4) and severe (CCI ≥ 5) co-morbidity. Cox proportional hazards models were used to evaluate the association between CCI and outcomes and the interaction between severity of co-morbidity and treatment effect. The study population included 349 patients (29%) with a mild/moderate CCI score and 863 patients (71%) with a severe CCI score. Patients with a severe CCI score had greater functional limitations based on 6-min walk test and impairments in health-related quality of life as assessed by the Kansas City Cardiomyopathy Questionnaire. A total of 161 patients (Kaplan-Meier rate=50%) with a mild/moderate CCI score and 579 patients (Kaplan-Meier rate=69%) with a severe CCI score died over a median follow-up of 9.8 years. After adjusting for baseline confounders, patients with a severe CCI score were at higher risk for all-cause mortality (hazard ratio 1.44, 95% confidence interval 1.19-1.74; $P < 0.001$). There was no interaction between CCI score and treatment effect on survival ($P = 0.756$).

CONCLUSIONS: More than 70% of patients had a severe burden of medical co-morbidities at baseline, which was independently associated with increased risk of death. There was not a differential benefit of surgical revascularization with respect to survival based on severity of co-morbidity.

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8: Anand A, Shalimar. Is Terlipressin Superior to Noradrenaline in the Treatment of Acute Kidney Injury in Acute-on-Chronic Liver Failure? *Hepatology*. 2019 Jan;69(1):463-464. doi: 10.1002/hep.30299. PubMed PMID: 30281816.

9: Anderson AJ, Chaurasia AK, Sharma A, Gupta A, Gupta S, Khanna A, Gupta V. Comparison of Rates of Fast and Catastrophic Visual Field Loss in Three Glaucoma Subtypes. *Invest Ophthalmol Vis Sci*. 2019 Jan 2;60(1):161-167. doi: 10.1167/iovs.18-25391. PubMed PMID: 30640968.

Purpose: To compare the distribution of visual field progression rates in three subgroups of glaucoma, being primary angle-closure glaucoma (PACG), POAG, and juvenile open-angle glaucoma (JOAG).

Methods: We assessed glaucoma patients treated in an Indian tertiary care setting with at least four visual field assessments. We determined rates from a single eye of each of 525 patients using linear regression of the summary index mean deviation (MD) over time. The main outcome measures were the proportions of fast (< -1.0 to -2.0 dB/y) and catastrophic (< -2 dB/y) visual field progression. Bootstrapped 95% CIs allowed comparison with published data from a large clinical cohort in Canada.

Results: The combined proportion of fast and catastrophic progressors in our cohort was less than half that in the Canada dataset (2.3% vs. 5.8%), despite median progression rates differing by only 0.03 dB/y. PACG, POAG, and JOAG represented 45%, 32%, and 12% of our cohort, respectively. Baseline MD values were similarly distributed between these subtypes. All subtypes showed a similar shaped distribution for progression rates, with median progression rates of -0.03, -0.05, and 0.02 dB/y for PACG, POAG, and JOAG, respectively. Combined proportions of fast and catastrophic progression rates did not significantly differ between subtypes.

Conclusions: Differences in fast and catastrophic visual field progression can exist despite only small changes in median progression rates, highlighting the importance of considering the full shape of the progression rate distribution when comparing the risk of devastating visual field loss.

10: Angamuthu M, Tripathi M, Goyal H, Parida G, Goyal V, Damle N, Bal C. Technetium-99m Labeled Tropane Derivative: Uptake in a Pituitary Macroadenoma. *Indian J Nucl Med.* 2019 Jan-Mar;34(1):74-75. doi: 10.4103/ijnm.IJNM_113_18. PubMed PMID: 30713390; PubMed Central PMCID: PMC6352642.

We present a case of suspected idiopathic Parkinson's disease in whom extra-axial accumulation of Technetium-99m labeled tropane derivatives in a pituitary macroadenoma interfered with image quality and interpretation. Subsequent F-18 fluoro-dihydroxyphenylalanine positron emission tomography/computed tomography was useful to demonstrate the absence of presynaptic dopaminergic dysfunction.

11: Appunni S, Anand V, Khandelwal M, Gupta N, Rubens M, Sharma A. Small Leucine Rich Proteoglycans (decorin, biglycan and lumican) in cancer. *Clin Chim Acta.* 2019 Apr;491:1-7. doi: 10.1016/j.cca.2019.01.003. Epub 2019 Jan 7. Review. PubMed PMID: 30629950.

The extracellular matrix (ECM) prevents invasion of tumour cells and possesses an intrinsic mechanism to down-regulate signalling processes that promote cancer proliferation. Small Leucine Rich Proteoglycans (SLRPs) are ubiquitous ECM components involved in matrix structural organization and as such can potentially regulate cancer cell multiplication, angiogenesis and migration. Decorin, a class I SLRP that modulates collagen fibrillogenesis, also functions as a natural pan-tyrosine kinase inhibitor to reduce tumour growth. In fact, decreased decorin expression has been associated with tumour aggressiveness and lower survival. In contrast, biglycan, another class I SLRP, was highly expressed in cancer and was associated with metastatic activity and lower survival. Tissue expression of lumican, a class II SLRP, was associated with clinical outcome and appears tumour specific. Recently, decorin, biglycan and lumican were found to be potential biomarkers in bladder cancer. This review updates our current understanding on the molecular interplay and significance of decorin, biglycan and lumican expression in cancer.

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12: Arora P, Gupta PK, Lingaiah R, Mukhopadhyay AK. Volume, conductivity, and scatter parameters of leukocytes as early markers of sepsis and treatment response. *J Lab Physicians.* 2019 Jan-Mar;11(1):29-33. doi: 10.4103/JLP.JLP_102_18. PubMed PMID: 30983799; PubMed Central PMCID: PMC6437820.

INTRODUCTION: Morphologic changes in the size and granularity of leukocytes seen in sepsis could be measured using the volume, conductivity, and scatter (VCS parameters) from the automated hematology analyzers. The objective of this study is to find the clinical usefulness of VCS parameters as possible indicators of sepsis and to determine the effect of treatment on these parameters.

METHODS: This observational study was conducted in a tertiary level hospital in India. Hemogram and VCS parameters obtained from LH 750 (Beckman coulter, Fullerton, CA) from 134 proven blood culture-positive cases of sepsis were reviewed on the day of culture positivity (day 0), day 3, and day 7 were analyzed and compared with those of samples from otherwise healthy 100 participants.

Statistical analysis of data was done, and cutoff value was established using receiver-operator characteristic curve.

RESULTS: Out of 134 culture-positive cases, 55.2% (n = 74) Gram-negative and 44.8% (n = 60) Gram-positive bacteria were isolated. The mean neutrophil volume (MNV) and mean monocyte volume (MMV) were higher in the sepsis group compared to that of the control group (165.43 ± 18.21 vs. 140.59 ± 7.6 , $P = 0.001$ for MNV and 179.8 ± 14.16 vs. 164.54 ± 9.6 , $P = 0.001$ for MMV). A significant decrease in MNV and MMV was observed with the initiation of the treatment. Significant changes in scatter and conductivity parameters were also noticed. A cutoff value of 150.2 for MNV gave a sensitivity and specificity of 79.1% and 95%, respectively, with an area under the curve (AUC) of 92.3%. With a cutoff of 168.3, MMV had a sensitivity of 80.6% and specificity of 77.5%, AUC of 83%.

CONCLUSION: VCS parameters such as MNV and MMV can be easily obtained by an automated hematology analyzer and could be used for early detection and therapeutic response in sepsis.

13: Arora P, Sagar R, Mehta M, Pallavi P, Sharma S, Mukhopadhyay AK. Serum S100B levels in patients with depression. *Indian J Psychiatry*. 2019 Jan-Feb;61(1):70-76. doi: 10.4103/psychiatry.IndianJPsychiatry_391_16. PubMed PMID: 30745657; PubMed Central PMCID: PMC6341924.

Background: The biochemical basis of depression has been related to blood-brain barrier (BBB) allowing/restricting a number of components to enter the brain milieu from the peripheral plasma milieu. S100B has been associated with BBB damage and is used as a marker of its integrity. Several studies have reported that depressive patients have increased levels of S100B in serum and cerebrospinal fluid.

Materials and Methods: Forty-two confirmed cases of depression, 13-25 years of ages were recruited from the Department of Psychiatry, All India Institute of Medical Sciences during the period from January 2013 to June 2014 along with 42 healthy controls of comparable age and sex. Psychometric evaluation of the patients and controls was done to assess the severity of depression using Beck's Depression Inventory-II and Hamilton Depression Rating Scale. Medical assessment and laboratory investigations were done. Serum S100B levels were measured using Sandwich ELISA. The results obtained were statistically analyzed.

Results: Levels of serum S100B were significantly elevated in patients with major depression as compared to controls. Significantly higher levels of S100B were seen only in females as compared to their healthy counterparts. Serum S100B was higher in depressed participants with the recurrent disorder than those with single episode. No correlation of levels of this marker was seen with clinical severity of the patients. It was found that with increased duration of illness for which the patient was being treated with antidepressants, the patients had higher levels of S100B.

Conclusions: Serum S100B can be used as a biomarker of depression.

14: Arora S, Damle NA, Passah A, Sharma R, Goyal H, Arunraj ST, Gupta P, Jana M. Tracer Accumulation in Relation to Venous Thrombus on (18)F-DOPA PET/CT in a Case of Persistent Hyperinsulinemic Hypoglycemia of Infancy. *Nucl Med Mol Imaging*. 2019 Apr;53(2):148-151. doi: 10.1007/s13139-018-00568-5. Epub 2019 Jan 23. PubMed PMID: 31057687; PubMed Central PMCID: PMC6473011.

18F-DOPA PET/CT is commonly done in patients with persistent hyperinsulinemic hypoglycemia of infancy (PHHI) to look for any focal lesion in the pancreas. We present the findings in a 20-day-old neonate with PHHI who underwent 18F-DOPA PET/CT. The scan showed diffuse uptake in the pancreas with no focal lesion, physiologic excretion into the genito-urinary system, and interestingly tracer accumulation was seen in the inferior vena cava and ilio-femoral veins which is a non-physiological site for tracer accumulation. The uptake corresponded to a large venous thrombus which was confirmed by a venous Doppler.

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 PMCID: PMC6473011 [Available on 2020-04-01]
 PMID: 31057687

Conflict of interest statement: Saurabh Arora, Nishikant Avinash Damle, Averilicia Passah, Rajni Sharma, Harish Goyal, Shreedharan Thankarajan Arunraj, Priyanka Gupta, and Manisha Jana declare that they have no conflict of interest. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent from parents of neonate was obtained to be included in the study.

15: Arora V, Aggarwal S, Bijarnia S, Lall M, Joshi A, Dua-Puri R, Arora U, Verma I. Extending the Phenotype and Identification of a Novel Candidate Gene for Immunodeficiency in 5q11 Microdeletion Syndrome. *Mol Syndromol*. 2019 Jan;9(6):312-318. doi: 10.1159/000494995. Epub 2018 Dec 14. PubMed PMID: 30800048; PubMed Central PMCID: PMC6381899.

Array CGH has led to the delineation of innumerable microdeletion syndromes. We present a patient with a 7-Mb deletion at 5q11.2 with previously unreported features, such as immunodeficiency, asymmetry of hands and feet, joint laxity, and agenesis of corpus callosum. The clinical features of this patient are compared with 13 patients reported previously. A common critical region (CCR) of 1.4 Mb (54-55.4 Mb) is defined in all cases including the present one. Of the 14 genes present in CCR, IL6ST is proposed to be the candidate gene for immunodeficiency observed in some of these patients. IL6ST encodes gp130, a signal transduction protein for various interleukins and cytokines. It is involved in the generation of both T and B lymphocytes as well as the production of acute-phase reactants. Microdeletion 5q11.2 should be considered as a recognisable syndrome based on the common phenotype and the novel features described.

16: Arumalla K, Singla V, Aggarwal S, Garg H, Goel R, Katiyar V. Outcomes in morbidly obese adolescent patients undergoing laparoscopic sleeve gastrectomy in the Indian subcontinent: A retrospective review. *J Minim Access Surg*. 2019 Jan-Mar;15(1):31-36. doi: 10.4103/jmas.JMAS_143_17. PubMed PMID: 29483370; PubMed Central PMCID: PMC6293674.

Introduction: There is a worldwide increase in the prevalence of obesity among the adolescent population in India from 16.3% in 2001 to 19.3% in 2010. Recent evidence suggests that bariatric surgery leads to resolution of comorbidities and associated long-term complications in adolescent patients with morbid obesity. **Aim:** The aim of this study is to determine the impact of bariatric surgery on the weight loss and comorbidities of morbidly obese adolescents.

Materials and Methods: A retrospective review of the data of 10 adolescent patients, who underwent Laparoscopic Sleeve Gastrectomy at our institute (tertiary care hospital), from July 2009 to July 2016 was carried out.

Results: Of the 10 patients, 4 patients had syndromic forms of obesity. The median age was 16.54 years. The median pre-operative weight and height were 112 kg and 154 cm, respectively, with a body mass index of 47.2 kg/m². There was no intra-operative or post-operative complication except for suspected methylene blue toxicity in one patient which was treated conservatively. Median follow-up period was 1 year (0-5 years). The patients had an increase in excess weight loss (EWL) of 54.5% until the end of 1 year. There was a regain of weight between the 1st and 2nd year, followed by a sustained weight loss achieving 44.8% EWL at 3 years and 60% at the end of 5 years (only two patients followed up at 5 years). Similar results were found in syndromic patients. Among the four diabetic patients, three had complete resolution and one had improvement in diabetes status. Among the three patients with obstructive sleep apnoea, two patients had complete resolution, while one patient had improvement in symptoms. One patient with hypocortisolism improved after surgery with a decrease in the steroid requirement. Among the hypothyroid patients, one patient had a complete resolution, one patient had improvement in hypothyroid status while two patients had no change.

Conclusion: Bariatric surgery is effective for morbidly obese adolescents, leading to significant resolutions of comorbid illness.

17: B SR, Patel AK, Kabra SK, Lodha R, Ratageri VH, Ray P. Virus load and clinical features during the acute phase of Chikungunya infection in children. PLoS One. 2019 Feb 1;14(2):e0211036. doi: 10.1371/journal.pone.0211036. eCollection 2019. PubMed PMID: 30707708; PubMed Central PMCID: PMC6358158.

BACKGROUND: Chikungunya virus (CHIKV) infection is a long known mosquito-borne disease that is associated with severe morbidity, characterized by fever, headache, rashes, joint pain, and myalgia. It is believed that virus load has relation with severity of clinical features.

OBJECTIVES: We performed this study to assess the relationship between virus load and clinical features in children during the acute phase of CHIKV infection, in order to draw insights for better-informed treatment.

STUDY DESIGN: Between June 1, 2009, and May 31, 2010, 338 patients with fever and susceptible to CHIKV during first 4 days of illness were prospectively enrolled from Karnataka Institute of Medical Sciences, Hubli in our hospital based cross sectional observational study. Sybr green quantitative reverse transcription polymerase chain reaction was performed to estimate the virus load.

RESULTS: Quantitative RT-PCR was positive for CHIKV in 54 patients. The median copy number of CHIKV was 1.3×10^8 copies/ml (1.7×10^5 – 9.9×10^9 copies/ml). Among the observed clinical features, a statistically significant difference in log mean virus load was found between patients with and without myalgia (log mean 7.50 vs 8.34, $P = 0.01$).

CONCLUSION: Patients with myalgia had lower virus load and those without myalgia had a higher virus load.

18: Bade G, Chandran DS, Kumar Jaryal A, Talwar A, Deepak KK. Contribution of systemic vascular reactivity to variability in pulse volume amplitude response during reactive hyperemia. Eur J Appl Physiol. 2019 Mar;119(3):753-760. doi: 10.1007/s00421-018-04066-6. Epub 2019 Jan 14. PubMed PMID: 30637458.

PURPOSE: The aim of the present study was to investigate why the magnitude of reactive hyperemia (RH) observed by pulse volume amplitude (PVA) after arm occlusion differs greatly among study subjects.

METHODS: Healthy subjects ($n=12$) in the age range of 22-30 years participated in this study. Vascular reactivity was assessed by measuring the changes in finger PVA simultaneously in the test (occluded arm) and control arm (contralateral non-occluded arm) using two separate Photoplethysmographic sensors. Short-term HRV was computed from simultaneously acquired lead II ECG signal to monitor the changes in cardiac sympathetic nervous activity.

RESULTS: The observed coefficient of variation for inter-subject variability in PVA response in test arm during second minute of RH was 115.3%. In the control arm, significantly reduced PVA was observed during the period of occlusion as well as RH. This observation was corroborated by simultaneously acquired short-term HRV which showed a significant rise in total power (p value < 0.005) and low-frequency (LF) power (p value < 0.05) during release of occlusion when compared to the baseline. A significant positive correlation (Spearman $r=0.33$; $p=0.02$) was observed between % change in PVA in the control arm and in the test arm for first 3 min of RH.

CONCLUSIONS: Sympathetic activation possibly plays an important role in mediating the inter-subject variability of vascular responses during reactive hyperemia which warrants simultaneous recording of both the test and the control arm responses during RH to accurately assess endothelial function.

19: Bagaria D, Kumar A, Ratan A, Gupta A, Kumar A, Kumar S, Mishra B, Sagar S. Changing Aspects in the Management of Splenic Injury Patients: Experience of 129 Isolated Splenic Injury Patients at Level 1 Trauma Center from India. J Emerg Trauma Shock. 2019 Jan-Mar;12(1):35-39. doi: 10.4103/JETS.JETS_1_18. PubMed PMID: 31057282; PubMed Central PMCID: PMC6496992.

Background: The spleen is most the commonly injured solid organ in abdominal trauma. Operative management (OM) has been challenged by several studies favoring successful non-OM (NOM) aided by modern era interventional radiology. The results of these studies are confounded by associated injuries impacting outcome. The aim of this study is to compare NOM and OM for isolated splenic injury in an Indian

Level 1 Trauma Center.

Materials and Methods: This is a retrospective analysis of prospective database.

Results: A total of 1496 patients were admitted with abdominal injuries. One hundred and twenty-nine patients admitted with diagnosis of isolated splenic injury from January 2009 to December 2016 were included in the study. RTIs, followed by falls from height, were the most common mechanisms of injury. Ninety-two (71.3%) patients with isolated splenic trauma were successfully managed nonoperatively. Thirty-seven (28.7%) required surgery, of which three were due to the failure of NOM. Three patients in the nonoperative group underwent splenectomy later, giving an overall success rate of 96.8% for NOM. Patients with isolated splenic trauma requiring OM had higher grade splenic injury (Grade 4/5), higher blood transfusion requirements ($P < 0.001$), and prolonged Intensive Care Unit and hospital stay in comparison to patients in the nonoperative group. No patient died in the NOM group; two patients died in the splenectomy group due to hemorrhagic shock and acute respiratory distress syndrome, respectively.

Conclusion: Although NOM is successful in most patients with blunt isolated splenic injuries, careful selection is the most important factor dictating the success of NOM.

20: Bagchi S, Lingaiah R, Mani K, Barwad A, Singh G, Balooni V, Bhowmik D, Agarwal SK. Significance of serum galactose deficient IgA1 as a potential biomarker for IgA nephropathy: A case control study. *PLoS One*. 2019 Mar 27;14(3):e0214256. doi: 10.1371/journal.pone.0214256. eCollection 2019. PubMed PMID: 30917188; PubMed Central PMCID: PMC6436754.

BACKGROUND: IgA nephropathy(IgAN) is a common glomerular disease with a higher risk of progression to end stage renal disease (ESRD) in certain ethnic populations. Since galactose deficient IgA1(Gd-IgA1) is a critical molecule in its pathogenesis, it has generated interest as a biomarker for this disease. **METHODS:** We measured serum Gd-IgA1 levels using a non-lectin based enzyme linked immunoassay(ELISA) in 136 immunosuppression naïve patients with primary IgAN and 110 controls(60-non IgA glomerular diseases, 50-healthy volunteers). **RESULTS:** Median serum Gd-IgA1 levels were significantly higher in IgAN patients [13135.6(2723.3,59603.8)ng/ml] compared to those with non IgA glomerular disease [4954.8(892.9,18256.2) ng/ml] and healthy controls [6299.5(1993.2,19256) ng/ml] and this was observed even after log transformation and adjustment for age and gender($p < 0.0001$). Considering a cut-off value of serum Gd-IGA1 \geq 7982.1ng/ml, the sensitivity for diagnosing IgAN compared to healthy controls was 74.3% and specificity was 72.0% with a positive predictive value of 87.8% and negative predictive value of 50.7%. The serum Gd-IgA1 level did not co-relate with baseline estimated glomerular filtration rate, urine protein creatinine ratio and the M, E, S, T and C scores on renal biopsy. The renal survival (absence of $>30\%$ decrease in eGFR, ESRD or death) was lower in patients with higher serum Gd-IgA1 levels(\geq 7982ng/ml) than those who had lower levels but it was not statistically significant($p = 0.486$). **CONCLUSION:** Serum Gd-IgA1 level is higher in IgAN patients compared to non-IgA glomerular diseases and healthy controls and has a good positive predictive value for diagnosis. However, it does not correlate with clinical and histological characteristics of disease severity and does not predict disease progression.

21: Bahadur A, Bhattacharya N, Chawla L, Khoiwal K, Durgapal P, Chaturvedi J. What is your diagnosis? *J Turk Ger Gynecol Assoc*. 2019 Feb 26;20(1):60-61. doi: 10.4274/jtgga.galenos.2019.2019.0007. Epub 2019 Jan 28. PubMed PMID: 30688054.

22: Bajpai V, Govindaswamy A, Agrawal SK, Malhotra R, Mathur P. Clostridium sordelli as a cause of gas gangrene in a trauma patient. *J Lab Physicians*. 2019 Jan-Mar;11(1):94-96. doi: 10.4103/JLP.JLP_108_18. PubMed PMID: 30983811; PubMed Central PMCID: PMC6437822.

Gas gangrene is a necrotic infection of the skin and soft tissue that is associated with high mortality and often necessitating amputation to control the

infection. Clostridial myonecrosis is most often cause of gas gangrene and usually present in settings of trauma, surgery, malignancy, and other underlying immunocompromised conditions. The most common causative organism of clostridial myonecrosis is *Clostridium perfringens* followed by *Clostridium septicum*. Here, we are reporting an unusual case report of posttraumatic gas gangrene caused by *Clostridium sordelli*.

23: Balasubramanian P, Ramteke P, Mallick S, Kumar L, Tanwar P. Diffuse Large B-Cell Lymphoma Relapsing in Leukaemic Phase Presenting as Acute Leukaemia. *Clin Med Insights Blood Disord*. 2019 Jan 15;12:1179545X18821160. doi: 10.1177/1179545X18821160. eCollection 2019. PubMed PMID: 30733632; PubMed Central PMCID: PMC6343450.

Diffuse large B-cell lymphoma (DLBCL) accounts for 30% to 40% of the newly diagnosed adult non-Hodgkin lymphomas, but rarely presents in leukaemic phase. Here in, we report a case of DLBCL presenting in leukaemic phase and masquerading as acute leukaemia. A 28-year-old woman presented to our outpatient department with complaints of fever for 1 week. Her peripheral blood smear showed 5% to 8% blasts. Bone marrow aspirate showed an infiltration by ~30% blasts. Flow cytometry and immunohistochemistry confirmed relapse of DLBCL. Also, patient's poor response to therapeutic regimen for DLBCL prompted to consider second differential diagnosis of acute leukaemia. This case is a learning case, as it emphasizes the combined role of diagnostic ancillary techniques along with clinical judgments for management. The case also makes us more vigilant towards the pathobiology of DLBCL and dynamics of personalized individual treatment response.

24: Balasundaram P, Sebastian LJD, Jain N, Prabhakar A, Garg A, Gaikwad S. Management of Arterial Pseudoaneurysms of the Neck in a Pediatric Population: An Endovascular Case Series and Review of Literature. *World Neurosurg*. 2019 Jan 24. pii: S1878-8750(19)30158-5. doi: 10.1016/j.wneu.2019.01.061. [Epub ahead of print] PubMed PMID: 30684708.

BACKGROUND: Arterial pseudoaneurysms of the neck are rarely reported in the pediatric population and no dedicated large series are available. Trauma and infection are the most common causes for these aneurysms, with congenital and collagen vascular disorders being the less common causes. These lesions can be life threatening, especially when they present with bleeding or airway compromise.

METHODS: We searched our radiology information system for all cases of pediatric neck aneurysm presented between June 2015 and May 2018. These cases were analyzed for clinicoepidemiologic variables, clinical presentation, imaging findings, management, and follow-up.

RESULTS: Six children were included in the study (male/female ratio, 5:1), with a mean age of 7.8 years (range, 2.5-15 years). Four presented acutely with either bleeding or rapidly enlarging neck swelling, whereas 2 presented with slowly increasing pulsatile swelling. One had a traumatic cause, 2 had infections, and 1 had infective cervical lymphadenitis complicated by iatrogenic injury whereas no definite causative mechanisms could be accounted for in 2 patients. Two of the children were managed by trapping of the aneurysm and 2 only by proximal parent vessel occlusion. The other 2 children were treated with stent graft deployment across the aneurysm neck to reconstruct the parent vessel. All the patients were doing well during the follow-up period (mean, 14.8 months).

CONCLUSIONS: Endovascular means of treatment for pediatric neck aneurysms is relatively simple and safe. Although parent vessel sacrifice is the gold-standard management, vessel-preserving strategies can be tried in select cases with favorable anatomy.

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25: Balhara YPS, Singh S, Sarkar S. Are the Patients Ready for the Change?: An Empirical Study to Evaluate the Impact of Change in Formulation of Buprenorphine-Naloxone on Prescription Pattern, Treatment Adherence, and Patient Satisfaction. *Subst Use Misuse*. 2019;54(2):307-314. doi:

10.1080/10826084.2018.1517799. Epub 2018 Dec 4. PubMed PMID: 30513249.

BACKGROUND: Therapeutic adherence is one of the most important determinants of the outcome with OST. There are no published studies that have explored the impact of change in tablet formulation of buprenorphine-naloxone from one brand to another among patients receiving OST.

OBJECTIVES: The current study is aimed at evaluation of the impact of change in buprenorphine-naloxone formulation on prescription pattern, treatment adherence, and patient satisfaction with OST.

METHODS: Our study was a cross sectional study based on a cohort of patients who were receiving OST at the study setting. Changes in prescription pattern, reports of subjective opioid withdrawal symptoms, or observation of objective opioid withdrawal symptoms were noted from the case records. The satisfaction and concerns of the patients with buprenorphine-naloxone formulations were assessed using a semi-structured proforma.

RESULTS: An increase in dose of buprenorphine-naloxone was noted in 22 participants, since formulation change. Twenty participants reported that the color of the formulation was different from the previous one, the intensity of effect was reported to be different by 87% participants. Seventy-three percent participants endorsed that increase in dose can be a possible solution to address the perceived differences in the effects of two formulations. Changes in physical attributes of the formulation, perception among treatment seeking peers regarding such changes in treatment, and lack of sense of autonomy regarding one's treatment play a more important role in determining response of the patients to changes in formulation of buprenorphine-naloxone.

26: Bandesh K, Jha P, Giri AK, Marwaha RK; INDICO, Scaria V, Tandon N, Bharadwaj D. Normative range of blood biochemical parameters in urban Indian school-going adolescents. PLoS One. 2019 Mar 7;14(3):e0213255. doi: 10.1371/journal.pone.0213255. eCollection 2019. PubMed PMID: 30845211; PubMed Central PMCID: PMC6405124.

Adolescence is the most critical phase of human growth that radically alters physiology of the body and wherein any inconsistency can lead to serious health consequences in adulthood. The timing and pace at which various developmental events occur during adolescence is highly diverse and thus results in a drastic change in blood biochemistry. Monitoring the physiological levels of various biochemical measures in ample number of individuals during adolescence can call up for an early intervention in managing metabolic diseases in adulthood. Today, only a couple of studies in different populations have investigated blood biochemistry in a small number of adolescents however, there is no comprehensive biochemical data available worldwide. In view, we performed a cross-sectional study in a sizeable group of 7,618 Indian adolescents (3,333 boys and 4,285 girls) aged between 11-17 years to inspect the distribution of values of common biochemical parameters that generally prevails during adolescence and we observed that various parameters considerably follow the reported values from different populations being 3.56-6.49mmol/L (fasting glucose), 10.60-199.48pmol/L (insulin), 0.21-3.22nmol/L (C-peptide), 3.85-6.25% (HbA1c), 2.49-5.54mmol/L (total cholesterol), 1.16-3.69mmol/L (LDL), 0.78-1.85mmol/L (HDL), 0.33-2.24mmol/L (triglycerides), 3.56-11.45mmol/L (urea), 130.01-440.15µmol/L (uric acid) and 22.99-74.28µmol/L (creatinine). Barring LDL and triglycerides, all parameters differed significantly between boys and girls ($p < 0.001$). Highest difference was seen for uric acid ($p = 1.3 \times 10^{-187}$) followed by C-peptide ($p = 6.6 \times 10^{-89}$). Across all ages during adolescence, glycemic and nitrogen metabolites parameters varied markedly with gender. Amongst lipid parameters, only HDL levels were found to be significantly associated with gender following puberty ($p < 0.001$). All parameters except urea, differed considerably in obese and lean adolescents ($p < 0.0001$). The present study asserts that age, sex and BMI are the essential contributors to variability in blood biochemistry during adolescence. Our composite data on common blood biochemical measures will benefit future endeavors to define reference intervals in adolescents especially when the global availability is scarce.

27: Bassi S, Gupta VK, Park M, Nazar GP, Rawal T, Bhaumik S, Kochhar KP, Arora M.

School policies, built environment and practices for non-communicable disease (NCD) prevention and control in schools of Delhi, India. *PLoS One*. 2019 Apr 18;14(4):e0215365. doi: 10.1371/journal.pone.0215365. eCollection 2019. PubMed PMID: 30998714; PubMed Central PMCID: PMC6472740.

OBJECTIVE: To assess school policies, built environment and practices for prevention and control of non-communicable diseases in schools of Delhi, India. **METHODS:** School built environments and policies were assessed using a structured observation checklist in 10 private and 9 government schools which were randomly selected from all 184 co-educational schools with primary to senior secondary level education in Delhi, India. A self-administered questionnaire was also completed by teachers from each school (n = 19) to capture information specific to school policies. Surveys were also conducted with parent of students in class II (aged 6-7 years; n = 574) and student in class XI (aged 15-16 years, n = 755) to understand school practices.

RESULTS: The majority of government (88.9%; n = 8) and private (80%; n = 8) schools reported having comprehensive school health policy. In terms of specific health behaviours, policies related to diet and nutrition in government schools were mostly restricted to primary levels with provision of the mid-day meal programme. All schools had two physical education periods per week of about 45-50 minutes. Most schools were compliant with tobacco-free school guidelines (n = 15 out of 19) and had alcohol control policies (n = 13 out of 19). Parent and student reports of practices indicated that school policies were not consistently implemented.

CONCLUSION: Most schools in Delhi have policies that address health behaviours in students, but there was considerable variation in the types and number of policies and school environments. Government schools are more likely to have policies in place than private schools. Further work is needed to evaluate how these policies are implemented and to assess their impact on health outcomes.

28: Basu P, Muwonge R, Bhatla N, Nene BM, Joshi S, Esmay PO, Poli URR, Joshi G, Verma Y, Zomawia E, Shastri SS, Pimple S, Anantharaman D, Prabhu PR, Hingmire S, Sauvaget C, Lucas E, Pawlita M, Gheit T, Jayant K, Malvi SG, Siddiqi M, Michel A, Butt J, Sankaran S, Rameshwari Ammal Kannan TP, Varghese R, Divate U, Willhauck-Fleckenstein M, Waterboer T, MÅller M, Sehr P, Vashist S, Mishra G, Jadhav R, Thorat R, Tommasino M, Pillai MR, Sankaranarayanan R; Indian HPV vaccine study group. Two-dose recommendation for Human Papillomavirus vaccine can be extended up to 18 years - updated evidence from Indian follow-up cohort study. *Papillomavirus Res*. 2019 Jun;7:75-81. doi: 10.1016/j.pvr.2019.01.004. Epub 2019 Jan 31. PubMed PMID: 30711698; PubMed Central PMCID: PMC6378832.

Earlier publication from the ongoing multi-centric study of the International Agency for Research on Cancer to evaluate less than three doses of the quadrivalent Human Papillomavirus (HPV) vaccine in India amongst unmarried girls demonstrated non-inferior total antibody titres, neutralizing antibody titres and antibody avidity in 2-dose recipients compared to 3-dose recipients at 15-18 years of age (Bhatla et al., 2018) [7]. The number of participants recruited at 15-18 years of age was 1515 and 1795 in the 3-dose and the 2-dose groups respectively. At a median follow-up of 7 years, incident HPV 16/18 infections were detected in 1.6% women receiving two doses and 0.8% women receiving three doses at 15-18 years. Frequency of incident infection was 7.0% in the age- and site-matched unvaccinated women (N=1484). No persistent infection from HPV 16 was observed in the 2- or 3-dose recipients and one (0.2%) persistent HPV 18 infection was documented, each in the 3-dose and 2-dose cohorts. Among the unvaccinated women, the frequency of HPV 16/18 persistent infection was 1.7%. The protection offered by two doses of quadrivalent HPV vaccine against incident and persistent infections in recipients at 15-18 years is comparable to that seen in 3-dose recipients at 15-18 years.

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29: Behera SS, Krishnakumar M, Muthuchellappan R, Philip M. Incidence of Deep Vein Thrombosis in Neurointensive Care Unit Patients-Does Prophylaxis Modality Make Any Difference? *Indian J Crit Care Med*. 2019 Jan;23(1):43-46. doi:

10.5005/jp-journals-10071-23111. PubMed PMID: 31065208; PubMed Central PMCID: PMC6481265.

Background and aims: To determine the incidence of upper and lower limb deep vein thrombosis (DVT) using ultrasonography (USG) in adult patients admitted to neuro-medical and neurosurgical intensive care unit (ICU).

Materials and methods: In this prospective observational study, patients admitted to the medical and surgical neuro-ICU and remained in the ICU for more than 48 hours were recruited. All patients were clinically examined for DVT. Basilic and axillary veins in the upper limbs and popliteal and femoral veins in the lower limbs were screened for DVT using USG. USG examination was performed on the day of admission to ICU and thereafter every 3rd day till discharge from ICU or death. Intermittent pneumatic compression (IPC) stockings were applied to the lower limbs to all the patients in both ICUs. Unfractionated heparin (UFH) was given subcutaneously to neuromedical ICU patients, while in surgical ICU, it was left to the discretion of the neurosurgeons.

Results: A total of 130 adult patients were admitted to the ICU during the 8 month study period. Thirty patients were excluded and the remaining 98 patients' (38 in medical and 60 in surgical ICU) data were analyzed. None of the 38 medical ICU patients developed DVT, while in neurosurgical ICU, 4 out of 60 patients developed DVT.

Conclusion: A combination of UFH and IPC stockings were effective in minimizing the DVT in neuromedical ICU patients. In surgical patients, through IPC stockings were effective, UFH can be considered for patients with intracranial malignancy.

How to cite this article: Behera SS, Krishnakumar M, Muthuchellappan R, Philip M. Incidence of Deep Vein Thrombosis in Neurointensive Care Unit Patients-Does Prophylaxis Modality Make Any Difference? Indian Journal of Critical Care Medicine, January 2019;23(1):43-46.

30: Bhad R. Utilization of "Screening Brief Intervention and Referral to Treatment" Approach for Tobacco Addiction in Day-to-Day Clinical Practice in India: The Need of the Hour. *J Neurosci Rural Pract.* 2019 Jan-Mar;10(1):8-9. doi: 10.4103/jnrp.jnrp_271_18. PubMed PMID: 30765963; PubMed Central PMCID: PMC6337983.

31: Bhad R, Gupta R, Balhara YPS. A study of pathways to care among opioid dependent individuals seeking treatment at a community de-addiction clinic in India. *J Ethn Subst Abuse.* 2019 Jan 11:1-13. doi: 10.1080/15332640.2018.1542528. [Epub ahead of print] PubMed PMID: 30633657.

Drug use, including opioid use disorder, is one of the rapidly rising and serious problems affecting populations globally. There is a treatment gap and delay in presentation of drug users to treatment centers. The present study aimed at assessing the pathways to care among opioid-dependent individuals seeking treatment from a community-based treatment center in India. In a cross-sectional observational study conducted at a community clinic of the National Drug Dependence Treatment Centre (NDDTC), New Delhi, India, a total of 100 treatment-seeking drug users (age 18-60 years) fulfilling DSM IV TR criteria for opioid dependence were recruited. The data were collected using a semistructured pro forma based on patient self-report and the encounter form used in the World Health Organization (WHO) Pathway Study. All participants were male, were mostly married, were employed, and belonged to nuclear families. Ninety-eight percent of participants has ever used heroin in a dependent fashion and 20% were using it currently. Mean age of the participants was 40.83 years (SD 12.7). Median age of onset of heroin use was 22 years (IQR 12). Median duration of heroin use was 138 months (IQR 132). Only 21% of participants visited the community deaddiction clinic at the first contact with care. The median time for first treatment-seeking attempt was 9.5 years (IQR 7). The study findings suggest significant delay between onset of drug-related problems and first treatment contact. There is a need to increase the availability and accessibility of treatment services to reduce the delay in treatment seeking.

32: Bhargava P, Verma VK, Malik S, Khan SI, Bhatia J, Arya DS. Hesperidin

regresses cardiac hypertrophy by virtue of PPAR- γ agonistic, anti-inflammatory, antiapoptotic, and antioxidant properties. *J Biochem Mol Toxicol*. 2019 May;33(5):e22283. doi: 10.1002/jbt.22283. Epub 2019 Jan 8. PubMed PMID: 30623541. Hesperidin (HES), a flavanone glycoside, predominant in citrus fruits, has an agonistic activity on peroxisome proliferator-activated receptor gamma (PPAR- γ). PPAR- γ is an inhibitor of cardiac hypertrophy (CH) signaling pathways. In this study, we investigated the cardioprotective effect of HES in isoproterenol (ISO)-induced CH through PPAR- γ agonistic activity. For this, male albino Wistar rats were divided into six groups (n=6), that is, normal, ISO-control, HES treatment group (200mgkg⁻¹ ; p.o.), HES per se (200mgkg⁻¹ ; p.o.), enalapril treatment group (30mgkg⁻¹ ; p.o.), and combination group (HES 200mgkg⁻¹ ; p.o.+enalapril 30mgkg⁻¹ ; p.o.). ISO (3mgkg⁻¹ ; s.c.) was administered to all groups except normal and per se to induce CH. HES or enalapril treatment of 28 days significantly attenuated pathological changes, improved cardiac hemodynamics, suppressed oxidative stress, and apoptosis along with an increased PPAR- γ expression. The combination of enalapril with HES exhibited an effect similar to that of HES or enalapril alone on all the aforementioned parameters. Therefore, HES may be further evaluated as a promising molecule for the alleviation of CH.

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33: Bhatia R, Gupta V, Arava S, Khandpur S, Ramam M. Macular hypopigmentation, hair loss and follicular spongiosis: A distinct clinicopathological entity. *Indian J Dermatol Venereol Leprol*. 2019 Jan 25. doi: 10.4103/ijdvl.IJDVL_679_17. [Epub ahead of print] PubMed PMID: 30688218.

Background: Hypopigmented macules are seen in a variety of disorders and the diagnosis rests on clinicopathological correlation. However, some cases are difficult to classify and pose a diagnostic challenge.

Aim: To describe the clinical and histopathological features of patients with hypopigmented macules and follicular spongiosis on histopathology.

Materials and Methods: We undertook a retrospective analysis of clinical and histopathological findings in 12 patients who presented with clinically nondiagnostic hypopigmented macules and showed follicular spongiosis on skin biopsy, at All India Institute of Medical Sciences, New Delhi, India between January 2015 and October 2016. The findings were compared with 12 patients with "unclassified" hypopigmented macules, who did not show follicular spongiosis on skin biopsy.

Results: A total of 12 patients with hypopigmented macules showed spongiosis affecting the follicular epithelium on histopathology. There were eight men and four women, most in their second decade (mean age 19.1 \pm 8.05 years), presenting with hypopigmented macules most commonly on the upper limbs, for a mean duration of 6.33 \pm 5.10 months. Clinically evident lesional hair loss was seen in all patients, and follicular prominences in seven (58%) patients. Histological features suggestive of other diagnosis, namely leprosy, mycosis fungoides or sarcoidosis were not seen in any biopsy. Alcian blue stain revealed an minimal amount of mucin in one biopsy. Clinically apparent hair loss and follicular prominences were found to be statistically significantly associated with histological evidence of follicular spongiosis (P < 0.001 and 0.003, respectively).

Limitations: Our study is limited by its retrospective design and small sample size.

Conclusions: Patients with hypopigmented macules and follicular spongiosis on histopathology may represent a distinct clinicopathological entity that is associated with lesional hair loss and follicular prominences. It is probably a variant of an endogenous dermatitis similar to pityriasis alba.

34: Bhatla N, Berek JS, Cuello Fredes M, Denny LA, Grenman S, Karunaratne K, Kehoe ST, Konishi I, Olawaiye AB, Prat J, Sankaranarayanan R, Brierley J, Mutch D, Querleu D, Cibula D, Quinn M, Botha H, Sigurd L, Rice L, Ryu HS, Ngan H, MÅenpÅÅ J, Andrijono A, Purwoto G, Maheshwari A, Bafna UD, Plante M, Natarajan J.

Revised FIGO staging for carcinoma of the cervix uteri. *Int J Gynaecol Obstet.* 2019 Apr;145(1):129-135. doi: 10.1002/ijgo.12749. Epub 2019 Jan 17. Review. PubMed PMID: 30656645.

OBJECTIVE: To revise FIGO staging of carcinoma of the cervix uteri, allowing incorporation of imaging and/or pathological findings, and clinical assessment of tumor size and disease extent.

METHODS: Review of literature and consensus view of the FIGO Gynecologic Oncology Committee and related societies and organizations.

RESULTS: In stage I, revision of the definition of microinvasion and lesion size as follows. Stage IA: lateral extension measurement is removed; stage IB has three subgroups-stage IB1: invasive carcinomas ≥ 5 mm and < 2 cm in greatest diameter; stage IB2: tumors 2-4 cm; stage IB3: tumors ≥ 4 cm. Imaging or pathology findings may be used to assess retroperitoneal lymph nodes; if metastatic, the case is assigned stage IIIC; if only pelvic lymph nodes, the case is assigned stage IIIC1; if para-aortic nodes are involved, the case is assigned stage IIIC2. Notations 'r' and 'p' will indicate the method used to derive the stage-i.e., imaging or pathology, respectively-and should be recorded. Routine investigations and other methods (e.g., examination under anesthesia, cystoscopy, proctoscopy, etc.) are not mandatory and are to be recommended based on clinical findings and standard of care.

CONCLUSION: The revised cervical cancer staging is applicable to all resource levels. Data collection and publication will inform future revisions.

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35: Bhatt A, Sinukumar S, Rajan F, Damodaran D, Ray M, Zaveri S, Kammar P, Mehta S. Impact of Radicality Versus Timing of Surgery in Patients with Advanced Ovarian Cancer (Stage III C) Undergoing CRS and HIPEC-a Retrospective Study by INDEPSO. *Indian J Surg Oncol.* 2019 Feb;10(Suppl 1):57-64. doi: 10.1007/s13193-019-00875-z. Epub 2019 Jan 16. PubMed PMID: 30886495; PubMed Central PMCID: PMC6397116.

HIPEC in addition to interval CRS has shown a survival benefit of 12 months compared to CRS alone. However, there are many controversial issues pertaining to CRS itself which should be addressed first. To compare NACT and primary CRS approaches when CRS is categorized according to the extent of resection. To evaluate the feasibility of performing HIPEC at these two time points. A retrospective analysis of patients with stage III C ovarian cancer undergoing primary and interval CRS+HIPEC was performed. The surgical approach for interval CRS was classified as (1) resection of sites of residual disease alone or (2) resection of sites involved before NACT. The morphological response was divided into different categories, and surgeons had to state what they consider residual disease and what they do not. From January 2013 to December 2017, 54 patients were included (18-primary; 36-interval). Median PCI 11 vs 6.5 ($p=0.07$); CC-0 was obtained in 77.7%. Three surgeons resected previously involved sites; three sites of residual disease only. All surgeons resected areas of scarring. Twenty percent patients had residual disease in "normal-looking" peritoneum. Morbidity ($p=0.09$), median OS ($p=0.71$), and median DFS ($p=0.54$) were similar in the two groups. Early recurrence occurred in 50% with resection of residual disease alone compared to 16.6% when previous disease sites were resected ($p=0.07$). Interval CRS should be performed to resect sites involved prior to NACT and not just sites of residual disease. HIPEC can be performed in both primary/interval settings with acceptable morbidity.

36: Bhatt A, Kammar P, Mehta S, Damodaran D, Zaveri S, Patel MD, Sinukumar S, Ray M, Seshadri R. Chasing Rainbows? the Possibility of "Cure" in Patients with Colorectal Peritoneal Metastases Undergoing Cytoreductive Surgery and HIPEC-a Retrospective Study by INDEPSO. *Indian J Surg Oncol.* 2019 Feb;10(Suppl 1):49-56. doi: 10.1007/s13193-019-00879-9. Epub 2019 Jan 30. PubMed PMID: 30886494; PubMed Central PMCID: PMC6397129.

Cytoreductive surgery (CRS) and HIPEC results in a median disease-free survival (DFS) of 12-15 months, overall survival (OS) of 23-63 months, and cure in around 15% of patients with colorectal peritoneal metastases (CPM). The wide variation

in OS may largely be attributed to different criteria for patient selection employed by different investigators. To evaluate outcomes of CRS and HIPEC for CPM in patients enrolled in the Indian HIPEC registry. A retrospective analysis of patients enrolled in the registry since its inception in March 2016 was performed. The impact of various prognostic factors on DFS and OS was evaluated. From Jan 2013 to Dec 2017, 68 patients underwent CRS with HIPEC at six Indian centers. The median PCI was nine [range 3-35]. Twenty-two (32.3%) had mucinous tumors. A CC-0 resection was performed in 53 (77.9%) and CC-1 in 14 (20.5%). The median DFS was 12 months [95% CI 11.037-12.963 months] and the median OS 25 months [95% CI 18.718-31.282]. The DFS was inferior in patients with right upper quadrant involvement ($p=0.02$) and 90-day major morbidity ($p=0.002$) and OS inferior in those with 90-day major morbidity ($p<0.001$) and mucinous tumors with a PCI >20 . The DFS compares well with results obtained by pioneering teams but we have no "cured" patients. Better patient selection and utilization of systemic therapies could in the future improve the OS. There is a compelling need to identify subgroups of CPM that benefit from the addition of HIPEC to CRS.

37: Bindra A, Kaushal A, Prabhakar H, Chaturvedi A, Chandra PS, Tripathi M, Subbiah V, Sathianathan S, Banerjee J, Prakash C. Neuroprotective role of dexmedetomidine in epilepsy surgery: A preliminary study. *Neurol India*. 2019 Jan-Feb;67(1):163-168. doi: 10.4103/0028-3886.253616. PubMed PMID: 30860117.

Purpose: Long standing temporal lobe epilepsy (TLE) causes cerebral insult and results in elevated brain injury biomarkers, S100b and neuron specific enolase (NSE). Surgery for TLE, has the potential to cause additional cerebral insult. Dexmedetomidine is postulated to have neuroprotective effects. The aim of this study was to assess the effect of intraoperative dexmedetomidine on S100b and NSE during TLE surgery.

Materials and Methods: 19 consenting adult patients with TLE undergoing anteromedial temporal lobectomy were enrolled and divided into two groups. Patients in Group D ($n = 9$) received dexmedetomidine whereas patients in Group C ($n = 10$) received saline as placebo in addition to the standard anaesthesia technique. Blood samples of these patients were drawn, before induction of anaesthesia, at the end of surgery, as well at 24 hours and 48 hours postoperatively, and analysed for serum S100b and NSE.

Results: The demographic and clinical profile was comparable in both the groups. The baseline S100b in group C and group D was 66.7 ± 26.5 pg/ml and 34.3 ± 21.7 pg/ml ($P = 0.013$) respectively. After adjustment for the baseline, the overall value of S100b was 71.0 ± 39.8 pg/ml and 40.5 ± 22.5 pg/ml ($P = 0.002$) in the control and study group, respectively. The values of S100b (79.3 ± 53.6 pg/ml) [$P = 0.017$] were highest at 24 hours postoperatively. The mean value of NSE in the control and study group was 32.8 ± 43.4 ng/ml ($\log 3.0 \pm 0.1$) and 13.51 ± 9.12 ng/ml ($\log 2.42 \pm 0.60$), respectively. The value of NSE in both the groups was comparable at different time points.

Conclusions: Lower perioperative values of S100b were observed in patients who received intraoperative dexmedetomidine. Dexmedetomidine may play a role in cerebroprotection during epilepsy surgery.

38: Bir R, Mohapatra S, Kumar A, Tyagi S, Sood S, Das BK, Kapil A. Comparative evaluation of in-house Carba NP test with other phenotypic tests for rapid detection of carbapenem-resistant Enterobacteriaceae. *J Clin Lab Anal*. 2019 Jan;33(1):e22652. doi: 10.1002/jcla.22652. Epub 2018 Aug 20. PubMed PMID: 30129058.

BACKGROUND: The prevalence of carbapenem-resistant Enterobacteriaceae (CRE) is alarming worldwide causing serious infections. Rapid and accurate identification of CRE is crucial to reduce the mortality and morbidity. In this study, we tried to develop an in-house Carba NP test for detection of CRE and evaluate its performance with others.

METHODS: A prospective study was conducted with 40 nonrepeating Enterobacteriaceae isolates over a period of 3 months. All the isolates were screened for carbapenem resistance as per CLSI 2016 guidelines followed by PCR for blaNDM-1, blaOXA-48, blaKPC, blaVIM, and blaIMP genes. All the isolates were subjected to five phenotypic tests, that is, in-house Carba NP (iCarba NP),

commercial Carba NP (cCarba NP), Blue-Carba, modified Hodge test (MHT), and CHROMagar.

RESULTS: Among the 40 isolates, 87.5% were identified as *Escherichia coli*, 7.5% were *Klebsiella pneumoniae*, 2.5% were *Enterobacter cloacae*, and 2.5% were *Citrobacter freundii*. Thirty-three of 40 (82.5%) isolates were found to harbor one or more resistant genes. Considering PCR to be the gold standard test, sensitivity of the phenotypic methods for CRE detection ranged from 63.6% (MHT) to 96.9% (CHROMagar). Both cCarba NP and iCarba NP observed to have highest specificity. The performance of iCarba NP was found comparable with cCarba NP by kappa score 1 and found approximately 10 times less expensive than cCarba NP. CONCLUSION: CHROMagar was observed most sensitive assay for detection of CRE followed by both Carba NP tests. iCarba NP was proved cheaper and equally good as cCarba NP for detection of CRE.

39: Biswas A, Kumar R, Bakhshi S, Sen S, Sharma MC. Multimodal Management of Congenital Orbital Malignant Rhabdoid Tumor: Review of Literature and Report of a Rare Case. *J Pediatr Hematol Oncol*. 2019 Jan 4. doi: 10.1097/MPH.0000000000001402. [Epub ahead of print] PubMed PMID: 30608492.

BACKGROUND: Malignant rhabdoid tumor (MRT) is a rare and aggressive tumor with a dismal prognosis. It commonly arises in the brain (65%), soft tissues (26%), and the kidney (9%). Primary orbital involvement is extremely rare. Although it has been mostly described in children below 2 years old, presentation at birth is sparsely reported.

OBSERVATION: We have described a case of congenital orbital MRT, who presented with rapidly progressive right-sided proptosis and was initially treated with subtotal resection and postoperative chemotherapy with ICE (Ifosfamide, Carboplatin, Etoposide) regimen. On local progression the child was treated with palliative radiotherapy (20Gy) to the right orbit and second-line chemotherapy with VAC (Vincristine, Adriamycin, Cyclophosphamide) regimen. Unfortunately he died due to progressive disease 4 months after the initial diagnosis.

CONCLUSIONS: This report highlights the importance of awareness of orbital MRT as a differential diagnosis of rapidly progressing proptosis in the neonatal period. This tumor is often refractory to conventional multimodality treatment and more intensive and innovative treatment approaches are clearly needed in future.

40: Biswas A, Adhikari N, Bakhshi S, Gopinathan VR, Sharma MC. A Rare Case of Primary Central Nervous System Lymphoma in an Adolescent Female Treated with High-Dose Methotrexate and Rituximab-Based Chemoimmunotherapy and Consolidation Whole Brain Radiotherapy. *Pediatr Neurosurg*. 2019;54(1):57-65. doi: 10.1159/000495789. Epub 2019 Jan 22. PubMed PMID: 30669145.

Primary central nervous system lymphoma (PCNSL) is a rare pediatric brain tumor. A 16-year-old female patient presented to the clinic with complaints of multiple episodes of generalized tonic clonic seizures, nystagmus, and weakness on the left side of the body for 3 weeks. She had similar symptoms, waxing and waning for the last 2 years, responding to corticosteroids. Repeat magnetic resonance imaging (MRI) of the brain showed multiple areas of signal abnormalities involving the left temporal lobe, the basal ganglion, the thalamus, and the right frontal and occipital lobes with contrast enhancement in bitemporal lesions. With a clinico-radiological diagnosis of demyelinating disorder, she underwent an image-guided right frontal lobe biopsy, which revealed sheets of atypical lymphoid cells diffusely immunopositive for CD20 but negative for CD3, CD10, BCL-6, and MUM-1, suggesting diffuse large B-cell lymphoma, germinal center B-cell subtype. The systemic lymphoma workup was essentially normal. She received 5 cycles of chemoimmunotherapy with rituximab, high-dose methotrexate (HDMTX), vincristine, and procarbazine and had a complete radiological response (CR). This was followed by whole brain radiotherapy (WBRT) to a dose of 36 Gy in 20 fractions over 4 weeks. Subsequently she received 2 cycles of consolidation chemoimmunotherapy with rituximab and high-dose cytarabine. Serial brain MRI done 1, 4, and 8 months after completion of treatment showed persistence of the CR. At the last follow-up visit, 15 months from the date of diagnosis, she was disease free and asymptomatic. This report underlines the fact that PCNSL in adolescents may be effectively treated with a combination of HDMTX- and rituximab-based

chemoimmunotherapy followed by consolidation with WBRT.

41: Biswas S, Sethi P, Nischal N, Wig N. Classical metacarpal deformities in Rheumatoid Arthritis. *QJM*. 2019 Jan 15. doi: 10.1093/qjmed/hcz019. [Epub ahead of print] PubMed PMID: 30649555.

42: Bodkhe R, Shetty SA, Dhotre DP, Verma AK, Bhatia K, Mishra A, Kaur G, Pande P, Bangarusamy DK, Santosh BP, Perumal RC, Ahuja V, Shouche YS, Makharia GK. Comparison of Small Gut and Whole Gut Microbiota of First-Degree Relatives With Adult Celiac Disease Patients and Controls. *Front Microbiol*. 2019 Feb 8;10:164. doi: 10.3389/fmicb.2019.00164. eCollection 2019. PubMed PMID: 30800106; PubMed Central PMCID: PMC6376745.

Recent studies on celiac disease (CeD) have reported alterations in the gut microbiome. Whether this alteration in the microbial community is the cause or effect of the disease is not well understood, especially in adult onset of disease. The first-degree relatives (FDRs) of CeD patients may provide an opportunity to study gut microbiome in pre-disease state as FDRs are genetically susceptible to CeD. By using 16S rRNA gene sequencing, we observed that ecosystem level diversity measures were not significantly different between the disease condition (CeD), pre-disease (FDR) and control subjects. However, differences were observed at the level of amplicon sequence variant (ASV), suggesting alterations in specific ASVs between pre-disease and diseased condition. Duodenal biopsies showed higher differences in ASVs compared to fecal samples indicating larger disruption of the microbiota at the disease site. The duodenal microbiota of FDR was characterized by significant abundance of ASVs belonging to *Parvimonas*, *Granulicatella*, *Gemella*, *Bifidobacterium*, *Anaerostipes*, and *Actinomyces* genera. The duodenal microbiota of CeD was characterized by higher abundance of ASVs from genera *Megasphaera* and *Helicobacter* compared to the FDR microbiota. The CeD and FDR fecal microbiota had reduced abundance of ASVs classified as *Akkermansia* and *Dorea* when compared to control group microbiota. In addition, predicted functional metagenome showed reduced ability of gluten degradation by CeD fecal microbiota in comparison to FDRs and controls. The findings of the present study demonstrate differences in ASVs and predicts reduced ability of CeD fecal microbiota to degrade gluten compared to the FDR fecal microbiota. Further research is required to investigate the strain level and active functional profiles of FDR and CeD microbiota to better understand the role of gut microbiome in pathophysiology of CeD.

43: Borde DP, Joshi SS, Chakravarthy M, Malik V, Karthekeyan RB, George A, Koshy T, Gandhe U, Nair SG. A survey of practices during cardiopulmonary bypass in India: An Indian association of cardiovascular and thoracic anesthesiologist endeavor. *Ann Card Anaesth*. 2019 Jan-Mar;22(1):56-66. doi: 10.4103/aca.ACA_67_18. PubMed PMID: 30648681; PubMed Central PMCID: PMC6350424.

Context: Cardiac anesthesiologists play a key role during the conduct of cardiopulmonary bypass (CPB). There are variations in the practice of CPB among extracorporeal technologists in India. **Aims:** The aim of this survey is to gather information on variations during the conduct of CPB in India.

Settings and Design: This was an online conducted survey by Indian College of Cardiac Anaesthesia, which is the research and academic wing of the Indian Association of Cardiovascular Thoracic Anaesthesiologists.

Subjects and Methods: Senior consultants heading cardiac anesthesia departments in both teaching and nonteaching centers (performing at least 15 cases a month) were contacted using an online questionnaire fielded using SurveyMonkey™ software. There were 33 questions focusing on institute information, perfusion practices, blood conservation on CPB; monitoring and anesthesia practices.

Results: The response rate was 74.2% (187/252). Fifty-one (26%) centers were teaching centers; 18% centers performed more than 1000 cases annually.

Crystalloid solution was the most common priming solution used. Twenty-three percent centers used corticosteroids routinely; methylprednisone was the most commonly used agent. The cardioplegia solution used by most responders was the one available commercially containing high potassium St. Thomas solution (55%),

followed by Del Nido cardioplegia (33%). Majority of the responders used nasopharyngeal site to monitor intraoperative patient temperature. Antifibrinolytics were commonly used only in patients who were at high risk for bleeding by 51% of responders, while yet, another 39% used them routinely, and 11% never did. About 59% of the centers insist on only fresh blood (<7 days old) when blood transfusion was indicated. The facility to use vaporizer on CPB was available in 62% of the centers. All the teaching centers or high volume centers in India had access to transesophageal echocardiography probe and echo machine, with 51% using them routinely and 38% using them at least sometimes. Conclusions: There is a wide heterogeneity in CPB management protocols among various Indian cardiac surgery centers. The survey suggests that adherence to evidence-based and internationally accepted practices appears to be more prevalent in centers that have ongoing teaching programs and/or have high volumes, strengthening the need to devise guidelines by appropriate body to help bring in uniformity in CPB management to ensure patient safety and high quality of clinical care for best outcomes.

44: Bypareddy R, Takkar B, Azad SV, Chawla R, Venkatesh P. Optic Nerve Head Granuloma, Retinal Vasculitis and Elevated Levels of Angiotensin-converting Enzyme: Dilemma of Forme Fruste Ocular Sarcoidosis. *J Ophthalmic Vis Res.* 2019 Jan-Mar;14(1):105-108. doi: 10.4103/jovr.jovr_74_17. PubMed PMID: 30820296; PubMed Central PMCID: PMC6388527.

Purpose: To report 2 cases of optic nerve head (ONH) granuloma, with raised serum angiotensin-converting enzyme (ACE) levels not fitting into the existing criteria for ocular sarcoidosis (OS).

Case Report: Fundus photography, ultrasonography, fluorescein angiography, and optical coherence tomography were performed for both patients. Systemic workup was performed for granulomatous disorders, including sarcoidosis, tuberculosis, and syphilis. Both patients had ONH granulomas and elevated ACE levels, with one of the patients also presenting retinal vasculitis. No other focus of systemic sarcoidosis was localized. Both patients were treated with oral steroids, following which they showed a marked, rapid clinical improvement. Both patients remained stable for at least one year.

Conclusion: The current accepted criterion for diagnosis of OS may need changes to include such borderline cases due to lack of correlation between clinical and investigative findings.

45: Chadha VK, Anjinappa SM, Dave P, Rade K, Baskaran D, Narang P, Kolappan C, Katoch K, Sharma SK, Rao VG, Aggarwal AN, Praseeja P, Jitendra R, Swaminathan S. Sub-national TB prevalence surveys in India, 2006-2012: Results of uniformly conducted data analysis. *PLoS One.* 2019 Feb 22;14(2):e0212264. doi: 10.1371/journal.pone.0212264. eCollection 2019. PubMed PMID: 30794595; PubMed Central PMCID: PMC6386399.

SETTING: Community based tuberculosis (TB) prevalence surveys in ten sites across India during 2006-2012.

OBJECTIVE: To re-analyze data of recent sub-national surveys using uniform statistical methods and obtain a pooled national level estimate of prevalence of TB.

METHODS: Individuals ≥ 15 years old were screened by interview for symptoms suggestive of Pulmonary TB (PTB) and history of anti-TB treatment; additional screening by chest radiography was undertaken in five sites. Two sputum specimens were examined by smear and culture among Screen-positives. Prevalence in each site was estimated after imputing missing values to correct for bias introduced by incompleteness of data. In five sites, prevalence was corrected for non-screening by radiography. Pooled prevalence of bacteriologically positive PTB was estimated using Random Effects Model after excluding data from one site. Overall prevalence of TB (all ages, all types) was estimated by adjusting for extra-pulmonary TB and Pediatric TB.

RESULTS: Of 769290 individuals registered, 715989 were screened by interview and 294532 also by radiography. Sputum specimen were examined from 50 852 individuals. Estimated prevalence of smear positive, culture positive and bacteriologically positive PTB varied between 108.4-428.1, 147.9-429.8 and

170.8-528.4 per 100000 populations in different sites. Pooled estimate of prevalence of bacteriologically positive PTB was 350.0 (260.7, 439.0). Overall prevalence of TB was estimated at 300.7 (223.7-377.5) in 2009, the mid-year of surveys. Prevalence was significantly higher in rural compared to urban areas. CONCLUSION: TB burden continues to be high in India suggesting further strengthening of TB control activities.

46: Chakravarty K, Shukla G, Poornima S, Agarwal P, Gupta A, Mohammed A, Ray S, Pandey RM, Goyal V, Srivastava A, Behari M. Effect of sleep quality on memory, executive function, and language performance in patients with refractory focal epilepsy and controlled epilepsy versus healthy controls - A prospective study. *Epilepsy Behav.* 2019 Mar;92:176-183. doi: 10.1016/j.yebeh.2018.12.028. Epub 2019 Jan 18. PubMed PMID: 30665125.

We aimed to evaluate the effect of sleep quality on memory, executive function, and language performance in patients with refractory focal epilepsy and controlled epilepsy and compare these with healthy individuals. We prospectively enrolled 37 adolescent and adult patients with refractory focal epilepsy (Group 1) and controlled epilepsy (Group 2) in each group. History pertaining to epilepsy and sleep were recorded, and all patients underwent overnight polysomnography. Language, memory, and executive function assessments were done using Western Aphasia Battery, Post Graduate Institute (PGI) memory scale, and battery of four executive function tests (Trail Making Test A & B, Digit symbol test, Stroop Task, and Verbal Fluency Test), respectively. Forty age- and sex-matched controls were also included in the study. Significant differences were noted in both objective and subjective sleep parameters among all the groups. On polysomnography, parameters like total sleep time, sleep efficiency, sleep latency, and rapid eye movement (REM) latency were found to be significantly worse in Group 1 as compared with Group 2. Cognitive and executive parameters were significantly impaired in Group 1. Shorter total sleep time, poorer sleep efficiency, and prolonged sleep latencies were observed to be associated with poor memory and executive function in patients with refractory epilepsy. Our study strongly suggests that sleep disturbances, mainly shorter total sleep time, poor sleep efficiency, and prolonged sleep latencies, are associated with impaired memory and executive function in patients with refractory focal epilepsy and to a lesser extent, among those with medically controlled epilepsy.

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47: Chandra D, Singh J, Deka R, Ahuja A, Sharma R, Mishra P, Seth T, Mahapatra M, Kumar L, Tyagi S, Saxena R, Pati HP. T Regulatory Cells in Donor Grafts May Predict the Severity of Acute Graft Versus Host Disease After Matched Sibling Donor Allogeneic Peripheral Blood Stem Cell Transplantation. *Indian J Hematol Blood Transfus.* 2019 Apr;35(2):233-239. doi: 10.1007/s12288-018-01071-9. Epub 2019 Jan 7. PubMed PMID: 30988557; PubMed Central PMCID: PMC6439099.

Acute graft-versus-host disease (aGVHD) and relapse are major issues for patients undergoing allogeneic hematopoietic stem cell transplant (allo-HSCT). T-regulatory (Treg) cells in the donor graft are negatively correlated with the incidence of aGVHD without any impact on relapse. In this study to determine the association of Treg cells with aGVHD in allo-HSCT patients. Thirty-two patients with hematological disorders, who underwent allo-HSCT. Twenty-nine patients who achieved engraftment were enrolled in the study. Treg cells were quantified in donor graft by flowcytometry and were assessed for their association with aGVHD and other clinical outcomes. Fifteen of 29 patients developed aGVHD. According to the occurrence and severity of aGVHD, patients were divided into two groups: 20 (68.9%) patients with grade 0-I aGVHD and 9 (31.1%) patients with grade II-IV aGVHD. Treg cells/CD4 ratio was significantly higher in the grade 0-I aGVHD group than in grade II-IV aGVHD group, ($p=0.0002$). We could not find the association of CD34 dose ($p=0.55$) or CD3 dose ($p=0.57$) with the severity of aGVHD. Higher Treg cells/CD4 ratio in donor graft was associated with less severe aGVHD. Though more studies are needed, Treg cells/CD4 ratio may be used as a predictive marker for severity of aGVHD in post allo-HSCT.

48: Chandra SP, Singh P, Kumar R, Agarwal D, Tandon V, Kale SS, Sarkar C. Long-term outcome of treatment of vertebral body hemangiomas with direct ethanol injection and short-segment stabilization. *Spine J.* 2019 Jan;19(1):131-143. doi: 10.1016/j.spinee.2018.05.015. Epub 2018 Jun 8. PubMed PMID: 29890263.

BACKGROUND: Vertebral body hemangiomas with myelopathy are difficult to manage. **OBJECTIVE:** The objective of this study was to evaluate the role of intraoperative ethanol embolization, surgical decompression, and instrumented short-segment fusion in vertebral hemangioma (VH) with myelopathy and long-term outcome (>24 months).

CLINICAL MATERIALS AND METHODS: This prospective study included symptomatic VH with cord compression with myelopathy. Pathologic fractures and deformity or multilevel pathologies were excluded from the study. Surgery consisted of intraoperative bilateral pedicular absolute alcohol (<1% hydrated ethyl alcohol) injection, laminectomy, and cord decompression at the level of pathology followed by a short-segment instrumented fusion using pedicle screws.

RESULTS: The study included 33 patients (mean 26.9±13.2, range: 10-68 years, 18 females). The clinical features of the study were myelopathy in all patients (5 paraplegic), sphincter involvement (13), and mid back or lower back pain (7). The preoperative American Spinal Injury Association (ASIA) scores were A (7), B (11), C (6), D (8), and E (1). Majority of the patients had single vertebral involvement (30) and three patients had multiple-level involvement. Six patients underwent surgery earlier (one underwent alcohol embolization). The mean surgical time was 124±39 minutes, and the average blood loss was 274±80 cc. The mean amount of absolute alcohol injected was 14.6±5.7 cc (two patients required 20 and 25 cc). Immediate embolization was achieved in all patients, allowing laminectomy and easy removal of soft-tissue hemangioma. Post surgery, one patient had transient deterioration, and the condition of the rest of the patients improved (sphincters improved in nine patients) at a follow-up ranging 28-103 months (mean 47.6±22.3). Follow-up ASIA scores were E (26), D (4), B (2), and C (1). All patients showed evidence of bone sclerosis and relief of cord compression on follow-up imaging.

CONCLUSIONS: This is the largest study in literature showing excellent improvement, low reoperation rates after ethanol embolization, and short-segment fixation.

49: Chandrasekaran AM, Kinra S, Ajay VS, Chattopadhyay K, Singh K, Singh K, Praveen PA, Soni D, Devarajan R, Kondal D, Manchanda SC, Hughes AD, Chaturvedi N, Roberts I, Pocock S, Ebrahim S, Reddy KS, Tandon N, Prabhakaran D; Yoga-CaRe Trial Team. Effectiveness and cost-effectiveness of a Yoga-based Cardiac Rehabilitation (Yoga-CaRe) program following acute myocardial infarction: Study rationale and design of a multi-center randomized controlled trial. *Int J Cardiol.* 2019 Apr 1;280:14-18. doi: 10.1016/j.ijcard.2019.01.012. Epub 2019 Jan 7. PubMed PMID: 30661847.

BACKGROUND: Cardiac rehabilitation (CR) is a standard treatment for secondary prevention of acute myocardial infarction (AMI) in high income countries (HICs), but it is inaccessible to most patients in India due to high costs and skills required for multidisciplinary CR teams. We developed a low-cost and scalable CR program based on culturally-acceptable practice of yoga (Yoga-CaRe). In this paper, we report the rationale and design for evaluation of its effectiveness and cost-effectiveness.

METHODS: This is a multi-center, single-blind, two-arm parallel-group randomized controlled trial across 22 cardiac care hospitals in India. Four thousand patients aged 18-80 years with AMI will be recruited and randomized 1:1 to receive Yoga-CaRe program (13 sessions supervised by an instructor and encouragement to self-practice daily) or enhanced standard care (3 sessions of health education) delivered over a period of three months. Participants will be followed 3-monthly till the end of the trial. The co-primary outcomes are a) time to occurrence of first cardiovascular event (composite of all-cause mortality, non-fatal myocardial infarction, non-fatal stroke and emergency cardiovascular hospitalization), and b) quality of life (Euro-QoL-5L) at 12 weeks. Secondary outcomes include need for revascularization procedures, return to pre-infarct activities, tobacco cessation, medication adherence, and cost-effectiveness of

the intervention.

CONCLUSION: This trial will alone contribute >20% participants to existing meta-analyses of randomized trials of CR worldwide. If Yoga-CaRe is found to be effective, it has the potential to save millions of lives and transform care of AMI patients in India and other low and middle income country settings.

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50: Chatterjee P, Rebok GW, Dwivedi SN, Kumar DA, Madan R, Dey AB. Development of integrated care tool - BRIEF for screening the unmet psychosociomedical needs of older Indians. *Indian J Public Health*. 2019 Jan-Mar;63(1):51-57. doi: 10.4103/ijph.IJPH_187_18. PubMed PMID: 30880738.

Background: With demographic shifts, there is an unprecedented increase in noncommunicable diseases, multimorbidity, and geriatric syndromes among older adults, especially in economically weaker sectors. However, there is no socioculturally appropriate tool to screen older adults for age-related health needs, multimorbidity, and geriatric syndromes at their doorstep. Objective: Our objective was to create a self-assessment tool, "integrated care tool" (ICT), and to assess its psychometric properties by applying it on older adults from multiple settings such as hospital, community, and old-age home (assisted living services).

Methods: new questionnaire was developed using standardized procedure including item development, pilot testing, and psychometric validation. After obtaining the institutional ethics committee clearance, data were collected from consenting respondents attending the Outpatient Department of Geriatric Medicine, All India Institute of Medical Sciences, New Delhi, community settings through health camps, and long-term care center, between May 2016 and February 2017. Data were computerized and analyzed by principal component analysis as extraction method and orthogonal varimax as rotation method.

Results: The final 30-item questionnaire was arranged into various domains as per rotated component matrix analysis. Overall internal consistency of the final questionnaire, as calculated by Cronbach's alpha, was 0.79, and the measure of sampling adequacy was 0.79.

Conclusion: ICT-BRIEF is a simple, self-assessment/caregiver-assisted tool to screen the health needs of older adults. This tool can be validated for developing risk score and scaled up to generate a large database to create elderly centered care plans.

51: Chauhan S, Sen S, Singh N, Sharma A, Chawla B, Kashyap S. Human Papillomavirus Detection Strategies in Retinoblastoma. *Pathol Oncol Res*. 2019 Jan 26. doi: 10.1007/s12253-018-00577-x. [Epub ahead of print] PubMed PMID: 30685839.

52: Chaurasia S, Sivanandan S, Agarwal R, Ellis S, Sharland M, Sankar MJ. Neonatal sepsis in South Asia: huge burden and spiralling antimicrobial resistance. *BMJ*. 2019 Jan 22;364:k5314. doi: 10.1136/bmj.k5314. Review. PubMed PMID: 30670451; PubMed Central PMCID: PMC6340339.

Conflict of interest statement: Competing interests: We have read and understood BMJ policy on conflicts and interests and declare that MS has received research grants from GlaxoSmithKline, Pfizer, and Cubist pharmaceuticals.

53: Chawla A, Kumar V. Cemental tear: An unusual cause for persisting endodontic periodontal lesion. *Indian J Dent Res*. 2019 Jan-Feb;30(1):140-143. doi: 10.4103/ijdr.IJDR_746_17. PubMed PMID: 30900675.

Cemental tear represents a rare form of root surface fracture which makes teeth prone to periodontal breakdown. The diagnosis of cemental tear becomes a challenge as it is usually neglected or misdiagnosed and is also underreported in the literature. Correct diagnosis and early treatment of cemental tear can prevent further periodontal breakdown and may preserve the affected tooth for a longer duration. This case presents the diagnosis, treatment, and an analysis of a right maxillary lateral incisor with an improper endodontic treatment coupled

with a cemental tear. Despite surgical removal, the cemental tear led to the development of an endodontic periodontal lesion. This article intends to help recognize early signs and symptoms of cemental tear and establish timely diagnosis. It determines that if the periodontal destruction caused by cemental tears is diagnosed and treated early, it may be possible to prevent further periodontal breakdown and preserve the tooth for a longer period.

54: Chawla N, Mandal P, Chatterjee B, Dhawan A. Tramadol-associated pica. *Psychiatry Clin Neurosci*. 2019 Jan;73(1):43. doi: 10.1111/pcn.12789. Epub 2018 Dec 2. PubMed PMID: 30367530.

55: Choudhary V, Satapathy S, Sagar R. Qualitative Study on the Impact of Child Sexual Abuse: Perspectives of Children, Caregivers, and Professionals in Indian Context. *J Child Sex Abus*. 2019 May-Jun;28(4):489-510. doi: 10.1080/10538712.2018.1563262. Epub 2019 Jan 25. PubMed PMID: 30681937.

With an alarming increase in reported cases of Child Sexual Abuse (CSA) in India, the present study was conceived in an attempt to unearth the impact of CSA from the perspective of children, their caregivers, and the professionals dealing with them using qualitative research methodology. The secondary objective of the study was to discuss the clinical implications of the obtained findings for conducting culturally sensitive psychological assessment and intervention for CSA in India. Thus, in-depth interviews with 11 children and 7 Focused Group Discussions (FGDs) with 21 caregivers and 27 professionals were conducted. A total of 59 sample participants were recruited, and a thematic analysis was done. Six broad themes were identified from 223 generated codes-impact on behavioral, emotional, cognitive functioning and academics, psychopathology, biological, and social functioning. Four essential recommendations were concluded from the study, i.e., multidimensional impact assessment as a mandatory clinical practice, developing and utilizing culturally sensitive assessment & intervention protocols, incorporation of family-focused approach and multidisciplinary treatment team approach to ensure the holistic well-being of each child in India.

56: Chowdhury UK, Chauhan A, Hasiya S, Jena JK, Sankhyan LK, Phulwara R. Aortic Root Enlargement and Aortic Valve Replacement for Calcified Supravalvular and Valvular Aortic Stenosis in Homozygous Familial Hypercholesterolemia: A Case Report. *World J Pediatr Congenit Heart Surg*. 2019 Jan 27;2150135118783639. doi: 10.1177/2150135118783639. [Epub ahead of print] PubMed PMID: 30686141.

Familial homozygous hypercholesterolemia is a rare disease with diverse clinical presentations ranging from premature ischemic heart disease to aortic root stenosis but rarely presents with anginal symptoms due to supravalvular and valvular aortic stenosis. We report a 19-year-old male patient with familial homozygous hypercholesterolemia with progressive supravalvular and valvular aortic stenosis that ultimately required aortic root enlargement and aortic valve replacement using a mechanical prosthesis, despite aggressive medical therapy. Surgical importance of this rare condition is highlighted.

57: Christa E, Srivastava P, Chandran DS, Jaryal AK, Yadav RK, Roy A, Deepak KK. Effect of Yoga-Based Cardiac Rehabilitation on Heart Rate Variability: Randomized Controlled Trial in Patients Post-MI. *Int J Yoga Therap*. 2019 Jan 31. doi: 10.17761/2019-00019. [Epub ahead of print] PubMed PMID: 30702948.

Autonomic dysfunction is an independent predictor of cardiovascular and all-cause mortality after myocardial infarction (MI). We tested the effects of a 12-week yoga-based cardiac rehabilitation program on heart rate variability (HRV) in 80 patients post-MI. This randomized controlled trial with two parallel groups was carried out in a tertiary care institution in India. The yoga group received 13 hospital-based structured yoga sessions as an adjunct to standard care. Control group participants received enhanced standard care involving three brief educational sessions with a leaflet on the importance of diet and physical activity. HRV was measured in all participants with lead II electrocardiogram (ECG) signals. One yoga group patient's data were excluded due to ECG

abnormalities. Baseline measurement was done 3 weeks post-MI, and postintervention assessment took place at the 13th week. HRV frequency and time domain indices were analyzed. There were no significant between-group differences in the HRV time domain indices. Frequency domain indices showed significant between-group differences in HF power (absolute) (yoga vs. control: 114.42 [-794.80-7,993.78] vs. -38.14 [-4,843.50-1,617.87], $p = 0.005$) and total power (nu) (yoga vs. control: 44.96 [21.94] vs. -19.55 [15.42], $p = 0.01$) with higher HF power and total power (nu) in the yoga group. It should be noted that these results cannot be generalized to high risk patients. Respiratory frequency control to check for influence of respiratory rate on RR interval was not evaluated. This short-term yoga-based cardiac rehabilitation program had additive effects in shifting sympathovagal balance toward parasympathetic predominance while increasing overall HRV in optimally medicated post-MI patients.

58: Daivadanam M, Ingram M, Sidney Annerstedt K, Parker G, Bobrow K, Dolovich L, Gould G, Riddell M, Vedanthan R, Webster J, Absetz P, MÅ¶lsted Alvešson H, Androutsos O, Chavannes N, Cortez B, Devarasetty P, Fottrell E, Gonzalez-Salazar F, Goudge J, Herasme O, Jennings H, Kapoor D, Kamano J, Kasteleyn MJ, Kyriakos C, Manios Y, Mogulluru K, Owolabi M, Lazo-Porras M, Silva W, Thrift A, Uvere E, Webster R, van der Kleij R, van Olmen J, Vardavas C, Zhang P; GACD Concepts and Contexts working group. The role of context in implementation research for non-communicable diseases: Answering the 'how-to' dilemma. *PLoS One*. 2019 Apr 8;14(4):e0214454. doi: 10.1371/journal.pone.0214454. eCollection 2019. PubMed PMID: 30958868; PubMed Central PMCID: PMC6453477.

INTRODUCTION: Understanding context and how this can be systematically assessed and incorporated is crucial to successful implementation. We describe how context has been assessed (including exploration or evaluation) in Global Alliance for Chronic Diseases (GACD) implementation research projects focused on improving health in people with or at risk of chronic disease and how contextual lessons were incorporated into the intervention or the implementation process.

METHODS: Using a web-based semi-structured questionnaire, we conducted a cross-sectional survey to collect quantitative and qualitative data across GACD projects ($n = 20$) focusing on hypertension, diabetes and lung diseases. The use of context-specific data from project planning to evaluation was analyzed using mixed methods and a multi-layered context framework across five levels; 1) individual and family, 2) community, 3) healthcare setting, 4) local or district level, and 5) state or national level.

RESULTS: Project teams used both qualitative and mixed methods to assess multiple levels of context (avg. = 4). Methodological approaches to assess context were identified as formal and informal assessments, engagement of stakeholders, use of locally adapted resources and materials, and use of diverse data sources.

Contextual lessons were incorporated directly into the intervention by informing or adapting the intervention, improving intervention participation or improving communication with participants/stakeholders. Provision of services, equipment or information, continuous engagement with stakeholders, feedback for personnel to address gaps, and promoting institutionalization were themes identified to describe how contextual lessons are incorporated into the implementation process.

CONCLUSIONS: Context is regarded as critical and influenced the design and implementation of the GACD funded chronic disease interventions. There are different approaches to assess and incorporate context as demonstrated by this study and further research is required to systematically evaluate contextual approaches in terms of how they contribute to effectiveness or implementation outcomes.

59: Das R, Dhiman A, Kapil A, Bansal V, Sharma TK. Aptamer-mediated colorimetric and electrochemical detection of *Pseudomonas aeruginosa* utilizing peroxidase-mimic activity of gold NanoZyme. *Anal Bioanal Chem*. 2019 Feb;411(6):1229-1238. doi: 10.1007/s00216-018-1555-z. Epub 2019 Jan 14. PubMed PMID: 30637436.

Despite of various advancements in biosensing, a rapid, accurate, and on-site detection of a bacterial pathogen is a real challenge due to the lack of appropriate diagnostic platforms. To address this unmet need, we herein report an

aptamer-mediated tunable NanoZyme sensor for the detection of *Pseudomonas aeruginosa*, an infectious bacterial pathogen. Our approach exploits the inherent peroxidase-like NanoZyme activity of gold nanoparticles (GNPs) in combination with high affinity and specificity of a *Pseudomonas aeruginosa*-specific aptamer (F23). The presence of aptamer inhibits the inherent peroxidase-like activity of GNPs by simple adsorption on to the surface of GNPs. However, in the presence of cognate target (*P. aeruginosa*), owing to the high affinity for *P. aeruginosa*, the aptamer leaves the GNP surface, allowing GNPs to resume their peroxidase-like activity, resulting in oxidation of 3,3',5,5'-tetramethylbenzidine (TMB). As TMB is an electrochemically active species, we have been able to translate the NanoZyme-based method into an ultrasensitive electrochemical assay using disposable carbon screen-printed electrode. This approach is highly sensitive and allows us to rapidly detect *P. aeruginosa* with a low-end detection limit of ~60 CFU/mL in water within 10 min. This generic aptamer-NanoZyme-based electrochemical sensing strategy may, in principle, be applicable for the detection of various other bacterial pathogens.

60: Das R, Dhiman A, Mishra SK, Halder S, Sharma N, Bansal A, Ahmad Y, Kumar A, Tyagi JS, Sharma TK. Structural switching electrochemical DNA aptasensor for the rapid diagnosis of tuberculous meningitis. *Int J Nanomedicine*. 2019 Mar 26;14:2103-2113. doi: 10.2147/IJN.S189127. eCollection 2019. PubMed PMID: 30988611; PubMed Central PMCID: PMC6440448.

Background: Tuberculous meningitis (TBM) is the most devastating manifestation of extra-pulmonary tuberculosis. About 33% of TBM patients die due to very late diagnosis of the disease. Conventional diagnostic methods based on signs and symptoms, cerebrospinal fluid (CSF) smear microscopy or liquid culture suffer from either poor sensitivity or long turnaround time (up to 8 weeks). Therefore, in order to manage the disease efficiently, there is an urgent and unmet need for a rapid and reliable diagnostic test.

Methods: In the current study, to address the diagnostic challenge of TBM, a highly rapid and sensitive structural switching electrochemical aptasensor was developed by combining the electrochemical property of methylene blue (MB) with the molecular recognition ability of a ssDNA aptamer. To demonstrate the clinical diagnostic utility of the developed aptasensor, a blinded study was performed on 81 archived CSF specimens using differential pulse voltammetry.

Results: The electrochemical aptasensor developed in the current study can detect as low as 10 pg HspX in CSF background and yields a highly discriminatory response ($P < 0.0001$) for TBM and not-TBM categories with ~95% sensitivity and ~97.5% specificity and has the ability to deliver sample-to-answer in ≤ 30 minutes.

Conclusion: In summary, we demonstrate a new aptamer-based electrochemical biosensing strategy by exploiting the target-induced structural switching of H63 SL-2 M6 aptamer and electroactivity of aptamer-tagged MB for the detection of HspX in CSF samples for the diagnosis of TBM. Further, the clinical utility of this sensor could be extended for the diagnosis of other forms of tuberculosis in the near future.

61: Das RR, Sankar J, Kabra SK. Role of Breathing Exercises And Yoga/Pranayam In Childhood Asthma: A Systematic Review. *Curr Pediatr Rev*. 2019 Jan 21. doi: 10.2174/1573396315666190121122452. [Epub ahead of print] PubMed PMID: 30663571.

BACKGROUND: Various complementary or alternative medicines (including breathing exercises and yoga/pranayama) have been tried as an attractive option to pharmacotherapy in childhood asthma.

OBJECTIVE: To evaluate the role of breathing exercise and yoga/pranayama as add on therapy to the "pharmacologically recommended treatment" of childhood asthma.

METHODS: We searched the published literature through the major databases: Medline via Ovid, PubMed, CENTRAL, Embase, and Google Scholar till June 2018. Randomized trials comparing breathing exercises and yoga/ pranayama versus control or as part of a composite intervention versus control were included. The primary outcome measures were quality of life and change in asthma symptoms. Secondary outcomes were: decrease in medication use, number of exacerbations, change in lung function and immunological parameters, school absenteeism, and

adverse events.

RESULTS: A total of 10 trials (466 children, 6-14 years age) were included. The severity of asthma varied among the trials. The data for primary outcome measures could not be pooled, there were mixed results for both primary and secondary outcomes. No significant benefit was obtained in acute asthma, and the lung function tests [except PEF_R % at 4-6 weeks, PEF absolute at 3 months, and FVC absolute at 3 months] in chronic asthma. One trial compared breathing exercise versus yoga, and found no difference. Adverse events were not significant.

CONCLUSIONS: Breathing exercise and yoga/ pranayama may have some additive role in the treatment of childhood asthma. However, at present it cannot be recommended as a standard of care due to insufficient data.

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62: Dash D, Goyal V. Anticancer Drugs for Parkinson's Disease: Is It a Ray of Hope or Only Hype? *Ann Indian Acad Neurol*. 2019 Jan-Mar;22(1):13-16. doi: 10.4103/aian.AIAN_177_18. PubMed PMID: 30692753; PubMed Central PMCID: PMC6327695.

Parkinson's disease (PD) is a progressive neurodegenerative disorder characterized by the death of dopaminergic (DA) neurons in the substantia nigra. To develop therapeutic strategies to halt or slow the neurodegenerative process, it is imperative that we understand the pathogenesis of PD. With the current state of knowledge, multiple pathological pathways such as oxidative stress, inflammation due to microglial activation, apoptotic pathway activation via Abelson (c-Abl) tyrosine kinase enzyme, and DA toxins have been incriminated in causing DA neuronal death in PD. In the recent times, there is growing evidence of the role of c-Abl nonreceptor tyrosine kinase in the pathogenesis of PD. We give a short account of the potential of c-Abl inhibitors, the currently used anticancer drugs such as nilotinib in preventing the neurodegenerative process in PD.

63: Dash D, Ihtisham K, Tripathi M, Tripathi M. Proportion and spectrum of movement disorders in adolescent and adult patients of autoimmune encephalitis of non-neoplastic aetiology. *J Clin Neurosci*. 2019 Jan;59:185-189. doi: 10.1016/j.jocn.2018.10.076. Epub 2018 Nov 16. PubMed PMID: 30455136.

We aimed to study the proportion of patients with movement disorders in seropositive autoimmune encephalitis of non-neoplastic aetiology and also to describe the spectrum of movement disorders in them. We prospectively screened 362 patients of age >12 years with encephalitis of unknown aetiology for a panel of antibodies for autoimmune encephalitis. Demographic and clinical characteristics with focus on the movement disorders were recorded. We also evaluated the differences in the spectrum of movement disorder based on various age groups and antibody positivity. Patients were treated with immune modulating drugs and were followed up for 6 months. Out of the 41 patients, 21 (51.2%) patients presented with movement disorder as a part of their clinical presentation. The commonest movement disorder encountered in our cohort was orofaciolingual dyskinesia (OFLD) 57.1% followed by tremor (38.1%), choreoathetosis (33.3%), paroxysmal dyskinesia (23.8%) stereotypies (14.3%), bradykinesia (13.1%), followed by dystonia (13.1%), catatonia (4.7%), neuromyotonia (4.7%) ballism (4.7%), ataxia (4.7%) and stiff person phenotype (4.7%). The hyperkinetic movement disorders were more commonly seen compared to hypokinetic disorders. All patients received immunomodulatory therapy. On follow, 17 (80.1%) patients had good response with total remission of the movement disorder. Four patients did not have total remission but significant improvement in the symptoms after 6 months of follow up. Our study shows that >50% of patients with antibody positive autoimmune encephalitis have movement disorder as a part of their clinical feature. Timely institution of immunotherapy leads to good outcome in majority of patients.

64: Dass J, Arava S, Mishra PC, Dinda AK, Pati HP. Role of CD138, CD56, and light chain immunohistochemistry in suspected and diagnosed plasma cell myeloma: A prospective study. *South Asian J Cancer*. 2019 Jan-Mar;8(1):60-64. doi: 10.4103/sajc.sajc_64_17. PubMed PMID: 30766858; PubMed Central PMCID: PMC6348785.

Introduction: Plasma cells (PCs) have conventionally been counted on the bone marrow aspirate, and small focal involvement may be missed even on bone marrow biopsy sections.

Material and Methods: We aimed to study the role of CD138, CD56, anti- κ , and anti- λ immunohistochemistry (IHC) to separate PC myeloma from reactive plasmacytosis and to study the utility of these in cases suspected as myelomas and lacking >10% PCs on bone marrow aspirate. The study comprised 35 diagnosed myelomas, 20 reactive plasmacytosis, and 19 M-band positive suspected myelomas. CD138 IHC was performed on all cases along with CD56, anti- κ , and anti- λ IHC. PCs were counted on CD138-immunostained sections by manual count and by image analysis. In addition, CD56 expression was correlated with clinical features in diagnosed myeloma group.

Results: In all cases, both manual counts and image analysis, PC counts were significantly higher on the CD138 stained sections than bone marrow aspirates. It was seen that the manual PC counts and image analysis counts were equivalent in diagnosed myeloma cases. CD56 expression was seen in ~62.85% diagnosed myeloma cases while it was negative in cases of reactive plasmacytosis. CD56 expression was significantly higher in patients with lytic lesions (78.26% vs. 21.74%).

CD138, anti- κ , and anti- λ IHC also helped classify 11/19 (57.8%) cases correctly. **Conclusion:** The use of CD138 along with the light chain and CD56 IHC adds a high diagnostic value in myeloma patients and suspected myeloma cases. The PCs can be counted manually on the CD138-immunostained sections and correlate well with the counts obtained by image analysis.

65: Datta Gupta S, Sharma A, Parakh N, Patel C. FDG PET/CT in a case of suspected infective endocarditis of prosthetic valve. *J Nucl Cardiol*. 2019 Jun;26(3):1023-1024. doi: 10.1007/s12350-018-01590-y. Epub 2019 Jan 2. PubMed PMID: 30603896.

66: Dawani A, Gupta AK, Jana M. Imaging in Pediatric Extra-Pulmonary Tuberculosis. *Indian J Pediatr*. 2019 May;86(5):459-467. doi: 10.1007/s12098-019-02858-y. Epub 2019 Jan 30. PubMed PMID: 30697676.

67: de Silva C, Mukherjee A, Jat KR, Lodha R, Kabra SK. Pulmonary Hemorrhage in Children: Etiology, Clinical Profile and Outcome. *Indian J Pediatr*. 2019 Jan;86(1):7-11. doi: 10.1007/s12098-018-2725-x. Epub 2018 Jun 14. PubMed PMID: 29948735.

OBJECTIVE: To describe etiology, clinical profile, treatment and outcome of children with pulmonary hemorrhage.

METHODS: A chart review of children with pulmonary hemorrhage attending Pediatric Pulmonology services of a tertiary care hospital in North-India was done.

RESULTS: Data of 44 children (mean age 59.2 ± 32.1 mo; 28 boys) were included for the study. Possible idiopathic pulmonary hemosiderosis 16 (36.4%), post infectious complications 11 (25%), immune mediated disorders 8 (18.2%), cardiac and vascular disorders 7 (15.9%), and airway pathologies 2 (4.5%) were the etiologies of pulmonary hemorrhage. Treatment options like medications, bronchial artery embolization and surgical resections were offered according to the etiology. Children with idiopathic pulmonary hemosiderosis and those with immune mediated diseases were treated with systemic steroids and steroid sparing agents; the latter group took longer time to respond and had more relapses.

CONCLUSIONS: Identification of main etiological categories of pulmonary hemorrhage in children could be useful to plan investigations and management of wide range of causes in more practical way.

68: Devaraja K, Kumar R, Sagar P, Barwad A. Intraductal pseudopodia in pleomorphic adenoma of parotid gland. *Indian J Pathol Microbiol*. 2019

Jan-Mar;62(1):117-118. doi: 10.4103/IJPM.IJPM_307_17. PubMed PMID: 30706873.

Pleomorphic adenoma is the most common salivary gland tumor. Pseudopodia are finger-like projections extending beyond the tumor capsule, seen in pleomorphic adenoma. If not resected completely, these pseudopodia may increase the risk of recurrence after excision of pleomorphic adenoma. While performing a total conservative parotidectomy for the pleomorphic adenoma of the parotid gland, we encountered tumor in the Stensen's duct. On pathological examination, the tumor was not involving the wall of the duct but was passing through the lumen, like a pseudopod. During parotidectomy, the surgeon should inspect the lumen of parotid duct for the presence of any tumor. Pseudopodia of pleomorphic adenoma may extend into the lumen and if not addressed adequately may lead to recurrence of the tumor.

69: Devasenapathy N, Maddison R, Malhotra R, Zodepy S, Sharma S, Belavy DL. Preoperative Quadriceps Muscle Strength and Functional Ability Predict Performance-Based Outcomes 6 Months After Total Knee Arthroplasty: A Systematic Review. *Phys Ther.* 2019 Jan 1;99(1):46-61. doi: 10.1093/ptj/pzy118. PubMed PMID: 30329137.

Background: One-third of individuals report limitations in activities of daily living even 6 months after total knee arthroplasty (TKA). Moderate-quality evidence exists for several sociodemographic and clinical predictors of patient-reported outcome measures of perceived functionality. Objectively measured performance-based measures (PBMs) provide a less subjective approach to informing patient treatment after TKA; however, information about predictors of functionally relevant PBMs is scarce.

Purpose: This systematic review synthesized the available research on preoperative predictors of PBMs after primary TKA for osteoarthritis.

Data Sources: In June 2016 and January 2017, MEDLINE, EMBASE, and PsycINFO databases were searched.

Study Selection: Cohort studies exploring preoperative predictors of stair climbing, walking speed, and gait speed measured ≥ 6 months after primary TKA were included. Screening of abstracts and selection of full texts were undertaken by 2 independent reviewers.

Data Extraction: Information on study design, patient characteristics, analysis, and results was extracted using pilot-tested forms. Two independent reviewers assessed risk of bias using modified Quality in Prognostic Studies criteria.

Data Synthesis: Of the eligible 12 studies involving 6 prospective cohorts, 10 studies reported information on baseline predictors. Meta-analysis of predictors was not possible because of missing information on effect size or standard errors. Narrative synthesis of evidence of predictors was therefore performed.

Limitations: The quality of evidence was low because of the risk of bias and heterogeneity of included studies as well as nonreporting of measures of effect.

Conclusions: Low-quality evidence exists for an association of preoperative functional ability and quadriceps muscle strength with functionality at 6 months after TKA. Improved reporting of predictor analyses is needed to enable evidence generation for clinical management.

70: Dhaked S, Sharma N, Chopra KK, Khanna A, Kumar R. Socio-demographic profile and treatment outcomes in pediatric TB patients attending DOTS centers in urban areas of Delhi. *Indian J Tuberc.* 2019 Jan;66(1):123-128. doi: 10.1016/j.ijtb.2018.06.006. Epub 2018 Jul 12. PubMed PMID: 30797269.

BACKGROUND: India accounts for one fourth of the global tuberculosis (TB) burden. In 2015, an estimated 28 lakh cases occurred and 4.8 lakh people died due to TB and proportion of children among new TB patients was 6% in 2016. The clinical presentation of childhood TB is extremely variable, therefore the study attempted to understand, the socio-demographic profile of pediatric tuberculosis patients, and the treatment outcomes under Revised National Tuberculosis Control Program (RNTCP).

METHODS: It was a prospective study carried out from January 2015 to December 2015. A predesigned, pretested and semi-structured questionnaire was used to interview caregivers of pediatric TB patients and they were followed up at two

more occasions i.e. at the end of intensive phase at the end of continuation phase.

RESULTS: A total of 141 study subjects were enrolled. Majority of the subjects (51.8%) belonged to 11-14 years of age group were females (63.8%) and from lower middle class families (48.9%). Extra pulmonary TB (70.2%) was almost three times more prevalent than pulmonary TB. During follow up visits symptoms like chest pain, breathlessness and eye redness were disappeared by the end of intensive phase and fever, cough and skin lesion improved by the end of continuation phase. Mean weight gain in malnourished children (2.6 kg) was lesser as compared to normal children (3.0 kg) at the end of 3rd visit. Treatment success rate in category 1 was 96.2% and in category 2 was 90%.

CONCLUSION: Treatment success rate under RNTCP is good but still need to improve, to make it 100 percent.

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71: Dhamija E, Paul SB, Kedia S. Non-alcoholic fatty liver disease associated with hepatocellular carcinoma: An increasing concern. *Indian J Med Res.* 2019 Jan;149(1):9-17. doi: 10.4103/ijmr.IJMR_1456_17. Review. PubMed PMID: 31115369.

Hepatocellular carcinoma (HCC) is the sixth most common cancer in world and third largest cause of cancer-related deaths. The last few decades have witnessed the emergence of non-viral causes of HCC, the most important being non-alcoholic fatty liver disease (NAFLD). NAFLD ranges from simple steatosis in the absence of excessive alcohol intake to non-alcoholic steatohepatitis (NASH) with or without cirrhosis. About 3-15 per cent of the obese patients with NASH progress to cirrhosis and about 4-27 per cent of NASH with cirrhosis patients transform to HCC. It is also known that HCC can develop de novo in patients with NASH without the presence of cirrhosis. Yearly cumulative incidence of NASH-related HCC is low (2.6%) compared to four per cent of viral-HCC. NAFLD has been associated with risk factors such as metabolic syndrome, insulin resistance, altered gut flora and persistent inflammation. Due to alarming rise in metabolic diseases, both in the developing as well as the developed world, it is expected that the incidence of NAFLD/NASH-HCC would rise manifold in future. No definite guidelines have been drawn for surveillance and management of NAFLD/NASH-associated HCC. It is thus important to discuss the entity of HCC in NAFLD at length with special focus on its epidemiology, risk factors, pathophysiology, diagnosis, clinical presentation and prevention.

72: Dhawan I, Makhija N, Choudhury M, Choudhury A. Modified Tricuspid Annular Plane Systolic Excursion for Assessment of Right Ventricular Systolic Function. *J Cardiovasc Imaging.* 2019 Jan;27(1):24-33. doi: 10.4250/jcvi.2019.27.e8. PubMed PMID: 30701713; PubMed Central PMCID: PMC6358432.

BACKGROUND: Tricuspid annular plane systolic excursion (TAPSE) has become a popular tool for assessing right ventricular (RV) systolic function because of its ease of application. TAPSE using transesophageal echocardiography (TEE) is limited by alignment with the lateral wall of the RV. Modified TAPSE (m-TAPSE) is a novel method for measuring TAPSE. m-TAPSE is the difference in the 'apical to lateral tricuspid annulus distance' during diastole and systole. The aim of the present study was to compare prospectively m-TAPSE with the most commonly used parameter TAPSE and near-gold standard 2D echocardiographic parameter RV fractional area change (RV FAC).

METHODS: We conducted a prospective observational study of 125 consecutive patients undergoing coronary artery bypass graft surgery in a single tertiary care center. Post-anesthetic induction TAPSE was recorded using transthoracic echocardiography (TTE). m-TAPSE was recorded using TEE in the mid-esophageal four-chamber view. RV FAC was also assessed using TEE. m-TAPSE < 16 mm, TAPSE < 16 mm and RV FAC < 35% were taken as cut-offs for RV systolic dysfunction. Correlations were assessed using the Pearson correlation coefficient.

Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated using 2 × 2 cross table.

RESULTS: m-TAPSE was significantly correlated with TAPSE ($r = 0.797$, $p < 0.001$). Similarly, a significant correlation was observed between m-TAPSE and RV FAC ($r =$

0.602, $p < 0.001$). The sensitivity, specificity, PPV, NPV, and accuracy of m-TAPSE were 100%, 98.3%, 80%, 100% and 98.4%, respectively.

CONCLUSIONS: m-TAPSE correlated well with both RV FAC and TAPSE. Therefore, m-TAPSE can be considered an easily measurable alternative parameter for evaluating RV systolic function in a busy intraoperative setting.

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73: Dhooria S, Agarwal R, Sehgal IS, Aggarwal AN, Goyal R, Guleria R, Singhal P, Shah SP, Gupta KB, Koolwal S, Akkaraju J, Annapoorni S, Bal A, Bansal A, Behera D, Chhajed PN, Dhamija A, Dhar R, Garg M, Gopal B, Hibare KR, James P, Jindal A, Jindal SK, Khan A, Kishore N, Koul PA, Kumar A, Kumar R, Lall A, Madan K, Mandal A, Mehta RM, Mohan A, Nangia V, Nath A, Nayar S, Patel D, Pattabhiraman V, Raghupati N, Sarkar PK, Singh V, Sivaramakrishnan M, Srinivasan A, Swarnakar R, Talwar D, Thangakunam B. Bronchoscopic lung cryobiopsy: An Indian association for bronchology position statement. *Lung India*. 2019 Jan-Feb;36(1):48-59. doi: 10.4103/lungindia.lungindia_75_18. PubMed PMID: 30604705; PubMed Central PMCID: PMC6330795.

Background: Bronchoscopic lung cryobiopsy (BLC) is a novel technique for obtaining lung tissue for the diagnosis of diffuse parenchymal lung diseases. The procedure is performed using several different variations of technique, resulting in an inconsistent diagnostic yield and a variable risk of complications. There is an unmet need for standardization of the technical aspects of BLC.

Methodology: This is a position statement framed by a group comprising experts from the fields of pulmonary medicine, thoracic surgery, pathology, and radiology under the aegis of the Indian Association for Bronchology. Sixteen questions on various technical aspects of BLC were framed. A literature search was conducted using PubMed and EMBASE databases. The expert group discussed the available evidence relevant to each question through e-mail and a face-to-face meeting, and arrived at a consensus.

Results: The experts agreed that patients should be carefully selected for BLC after weighing the risks and benefits of the procedure. Where appropriate, consideration should be given to perform alternate procedures such as conventional transbronchial biopsy or subject the patient directly to a surgical lung biopsy. The procedure is best performed after placement of an artificial airway under sedation/general anesthesia. Fluoroscopic guidance and occlusion balloon should be utilized for positioning the cryoprobe to reduce the risk of pneumothorax and bleeding, respectively. At least four tissue specimens (with at least two of adequate size, i.e., ≥ 5 mm) should be obtained during the procedure from different lobes or different segments of a lobe. The histopathological findings of BLC should be interpreted by an experienced pulmonary pathologist. The final diagnosis should be made after a multidisciplinary discussion. Finally, there is a need for structured training for performing BLC.

Conclusion: This position statement is an attempt to provide practical recommendations for the performance of BLC in DPLDs.

74: Faiq MA, Sofi RA. A Glimpse into the mysteries of glaucoma: From theories to clinics. *Oman J Ophthalmol*. 2019 Jan-Apr;12(1):1-3. doi: 10.4103/ojo.OJO_91_2018. PubMed PMID: 30787526; PubMed Central PMCID: PMC6380149.

75: Frullanti E, Papa FT, Grillo E, Clarke A, Ben-Zeev B, Pineda M, Bahi-Buisson N, Bienvenu T, Armstrong J, Roche Martinez A, Mari F, Nissenkorn A, Lo Rizzo C, Veneselli E, Russo S, Vignoli A, Pini G, Djuric M, Bisgaard AM, Ravn K, Bosnjak VM, Hayek J, Khajuria R, Montomoli B, Cogliati F, Pintaudi M, Hadzsiev K, Craiu D, Voinova V, Djukic A, Villard L, Renieri A. Analysis of the Phenotypes in the Rett Networked Database. *Int J Genomics*. 2019 Mar 27;2019:6956934. doi: 10.1155/2019/6956934. eCollection 2019. PubMed PMID: 31049350; PubMed Central PMCID: PMC6458890.

Rett spectrum disorder is a progressive neurological disease and the most common genetic cause of intellectual disability in females. MECP2 is the major causative gene. In addition, CDKL5 and FOXG1 mutations have been reported in Rett patients,

especially with the atypical presentation. Each gene and different mutations within each gene contribute to variability in clinical presentation, and several groups worldwide performed genotype-phenotype correlation studies using cohorts of patients with classic and atypical forms of Rett spectrum disorder. The Rett Networked Database is a unified registry of clinical and molecular data of Rett patients, and it is currently one of the largest Rett registries worldwide with several hundred records provided by Rett expert clinicians from 13 countries. Collected data revealed that the majority of MECP2-mutated patients present with the classic form, the majority of CDKL5-mutated patients with the early-onset seizure variant, and the majority of FOXP1-mutated patients with the congenital form. A computation of severity scores further revealed significant differences between groups of patients and correlation with mutation types. The highly detailed phenotypic information contained in the Rett Networked Database allows the grouping of patients presenting specific clinical and genetic characteristics for studies by the Rett community and beyond. These data will also serve for the development of clinical trials involving homogeneous groups of patients.

76: Gandhi A, Vellaiyan S, Subramanian VS, Shanmugam T, Murugesan K, Subramanian K. Commissioning of portal dosimetry using a novel method for flattening filter-free photon beam in a nontrue beam linear accelerator. *J Cancer Res Ther.* 2019 Jan-Mar;15(1):223-230. doi: 10.4103/jcrt.JCRT_1181_16. PubMed PMID: 30880782.

Aim: The aim of this study is to commission and validate the portal dosimetry (PD) system using an indirect method for flattening filter free (FFF) photon beam of the upgraded c-series linear accelerator.

Background: Varian Medical System clinacs with amorphous-silicon portal imager panel (aSi-1000) do not have PD for FFF beams. Recently, our c-series linear accelerator was upgraded to deliver 6MV FFF (6MVFFF) photon beam with the highest dose rate of 1400 monitor unit (MU)/min. The study, therefore, focuses on the commissioning and validation of PD for the 6MVFFF beam.

Materials and Methods: An indirect method was implemented to predict the portal dose for FFF beam in Eclipse as the treatment planning system does not have direct prediction algorithm for FFF beam (version. 11). Dosimetrical characteristics of aSi-electronic portal imaging device (EPID) were evaluated for 6MVFFF beam and validation of PD for 6MVFFF beam was performed for open fields along with pretreatment quality assurance of intensity-modulated radiation therapy (IMRT), volumetric-modulated arc therapy (VMAT), and stereotactic radiosurgery (SRS) techniques for 30 patients planned with 6MVFFF beam.

Results: ASi-EPID saturates between 100 and 130 cm source to detector distance (SDD) for 6MVFFF beam and resolved at more than 140 cm SDD. The squared correlation coefficient (R²) for MU linearity was found to be 1 (R² = 1), and instantaneous dose response linearity at different SDD's was found to be 0.999 (R² = 0.999) for the 6MVFFF beam. Maximum gamma area index (GAI) for 3% dose difference and 3 mm distance-to-agreement criteria for IMRT, VMAT, and SRS/stereotactic radiotherapy plans was 97.9% ± 0.3%, 96.3% ± 0.5%, and 98.2% ± 0.2%, respectively.

Conclusion: The results reveal that this novel method can be used to commission portal dosimetry for 6MVFFF beam as it is a convenient, faster, and accurate method.

77: Ganesh GS, Sahu PK, Das SP, Mishra C, Dhiman S. A subgroup analysis to compare patients with acute low back pain classified as per treatment-based classification. *Physiother Res Int.* 2019 Jan;24(1):e1747. doi: 10.1002/pri.1747. Epub 2018 Sep 18. PubMed PMID: 30226651.

OBJECTIVES: The evidence for the effectiveness of interventions targeting acute low back pain (LBP) is suboptimal. It is difficult to identify those patients who are more likely to develop chronic pain and disability after an acute episode of LBP. These shortcomings may be attributed to considering LBP as one homogenous condition.

METHODS: In this quasi-experimental study, we examined and analysed a prospective cohort of 267 patients with first-onset LBP and classified them into one of the groups based on treatment-based classification: direction-specified exercises

(Group 2), manipulation (Group 3), stabilization exercises (Group 4), traction (Group 5), and a physician care group (Group 1). Disability and pain were assessed at baseline, after treatment, and at 6 months using the Oswestry Disability Index and the Numerical Rating Scale, respectively. Comparisons were made between the groups, and we predicted measures of disability and pain intensity at 6 months with age, gender, fear avoidance behaviour, centralization phenomenon (CP), expectations about recovery, CP, group classification, baseline pain, and disability.

RESULTS: Analysis showed that all the heterogeneous groups of LBP improved their outcomes with the respective treatment provided. However, when the entire sample was considered as one homogenous group of LBP, the results showed improvement with time ($p < 0.05$) only and no difference was found between groups ($p > 0.05$). None of the studied factors, except baseline pain ($R = 0.227$, $R^2 = 0.051$, $p < 0.05$), were able to accurately predict the development of chronic pain in our study sample.

CONCLUSION: Though our results showed no differences between the subgroups in the reduction of pain and disability, we conclude that classifying and treating patients with LBP into subgroups based on signs and symptoms produce better outcomes. Baseline pain alone may predict a small percentage of people who may develop chronic pain.

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78: Ganga KP, Ojha V, Shaw M, Kumar S. Intra-atrial course of the right coronary artery: depiction of a potentially hazardous entity on dual-source CT. *BMJ Case Rep.* 2019 Jan 29;12(1). pii: e228345. doi: 10.1136/bcr-2018-228345. PubMed PMID: 30700473.

79: Garg A, Kaur KP, Devaranjan Sebastian LJ, Gaikwad SB, Bhatia R, Singh MB, Srivastava A, Pandey RM. Conglomerate Ring-Enhancing Lesions are Common in Solitary Neurocysticercosis and do not always Suggest Neurotuberculosis. *Ann Indian Acad Neurol.* 2019 Jan-Mar;22(1):67-72. doi: 10.4103/aian.AIAN_221_18. PubMed PMID: 30692762; PubMed Central PMCID: PMC6327694.

Background and Purpose: Differentiating between neurocysticercosis (NCC) and neurotuberculosis has serious therapeutic implications and this distinction relies heavily on neuroimaging. Few case reports discuss the conglomeration of ring-enhancing lesions (RELs) in patients with solitary NCC. The aim of our study is to describe the imaging findings of conglomerate RELs in a cohort of patients with solitary NCC, emphasizing the frequency of conglomeration.

Materials and Methods: This retrospective study included 100 patients with solitary NCC. Two neuroradiologists analyzed contrast-enhanced computed tomography (CT) images regarding morphology, enhancement pattern, location, number of lesions, and degree of perilesional edema. The solitary lesions were classified as solitary discrete RELs (SD-RELs) when a well-defined lesion was seen and solitary conglomerate RELs (SC-RELs) when two or more ring lesions or ring/rings plus disc lesions were present contiguously. Follow-up CT scans were evaluated for the resolution of lesions and surrounding edema.

Results: Out of 100 patients, 42 were SD-RELs and 58 were SC-RELs. No statistically significant difference was found between both groups in terms of age of presentation, clinical presentation, lesion size and location, and degree of perilesional edema. Larger lesions (>10 mm) were more likely to show scolex and were associated with greater degree of edema in both subgroups. During follow-up, 13 patients had new lesions (SD-RELs-5, SC-RELs-8). In SD-RELs, follow-up lesions were in the same location in four patients and new location in one; and in SC-RELs, lesions were in the same location in seven and in new location in one case.

Conclusion: Conglomeration of RELs is a common finding in patients with solitary NCC.

80: Garg B, Gupta M, Singh M, Kalyanasundaram D. Outcome and safety analysis of 3D-printed patient-specific pedicle screw jigs for complex spinal deformities: a comparative study. *Spine J.* 2019 Jan;19(1):56-64. doi:

10.1016/j.spinee.2018.05.001. Epub 2018 May 3. PubMed PMID: 29730456.

BACKGROUND CONTEXT: Spinal deformities are very challenging to treat and have a great risk of neurologic complications because of hardware placement during corrective surgery. Various techniques have been introduced to ensure safe and accurate placement of pedicle screws. Patient-specific screw guides with predrawn and prevalidated trajectory seem to be an attractive option.

PURPOSE: We have focused on developing three-dimensional (3D) printing technique for complex spinal deformities in India. This study also aimed to compare the placement of pedicle screw with 3D printing and freehand technique.

STUDY DESIGN/SETTINGS: This is a retrospective comparative clinical study in an academic institutional setting.

PATIENT SAMPLE: A total of 20 patients were enrolled during the study: 10 were operated on with the help of 3D printing (Group 1) and 10 were operated on with freehand technique (Group 2). Group 1 included six patients with congenital scoliosis, three patients with adolescent idiopathic scoliosis (AIS), and one patient with post-tubercular kyphosis, and Group 2 included five patients with congenital scoliosis, four patients with AIS, and one patient with post-tubercular kyphosis.

OUTCOME MEASURES: Primary outcomes were measured in terms of screw violation, and secondary outcomes were measured in terms of surgical time, blood loss, radiation exposure (number of shots required), and complications.

MATERIALS AND METHODS: MIMICS Base v18.0 software was used for 3D reconstruction from computed tomography scan images of all the patients. 3-Matic software was used to create a drill guide. A 3D printer from Stratasys Mojo with ABS P430 model material cartilage (a thermoplastic material) was used for the printing of the vertebra model and jigs. A two-sample test of proportion was used to compare correctly and wrongly placed pedicle screws with 3D printing and freehand technique. t Test with equal variance was used for operating surgical time and blood loss.

RESULTS: No superior or inferior screw violation was observed in any of our patients in either group. We found a significant difference ($p=.03$) between the two groups regarding perfect screw placement in favor of 3D printing. There were 13 Grade 2 medial perforations in the freehand group and 3 in the 3D printing group. There was no Grade 3 medial perforation in either group. Six Grade 2 lateral perforations in the freehand group and seven in the 3D printing group were observed. Three Grade 3 lateral perforations in the freehand group and two in 3D printing group were observed. Analysis showed a statistically significant ($p=.005$) medial violation in the freehand group. Surgical time was significantly less ($p=.03$) in the 3D printing group compared with the freehand group. Mean blood loss was higher in the freehand group but was not statistically significant ($p=.3$) in the 3D printing group. Fluoroscopic shots required were less in number in the 3D printing group compared with the freehand group. There was no neurologic deficit in any of the patients in the two groups.

CONCLUSIONS: In our study, focusing on spinal deformities with statistically significant higher rates of accurate screw positioning and higher numbers of inserted screws with 3D printing was possible because of enhanced safety, particularly at apical levels. As such, spinal deformities are difficult to treat worldwide. In India, these deformities are often neglected and present at a very late and a much more deformed state when their treatment becomes even more challenging. Developing these patient-specific drill templates will enable an average spine surgeon to treat these patients with much ease and safety.

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81: Garg D, Pedapati R, Nakra T, Singh RK, Prabhakar A, Dash D, Bhatia R, Tripathi M. Langerhans cell histiocytosis presenting as a rapidly evolving frontotemporal syndrome. *Neurol Sci.* 2019 May;40(5):1055-1058. doi: 10.1007/s10072-019-3709-y. Epub 2019 Jan 10. PubMed PMID: 30631989.

Langerhans cell histiocytosis (LCH) is a rare disorder in adults which usually manifests with involvement of multiple organ systems, including the central nervous system. We describe an unusual case of biopsy-proven LCH presenting with frontotemporal-dominant cognitive impairment with hypothalamic involvement, along

with multisystem disease. We propose that the dementia was probably an immune-mediated process triggered by LCH which responded dramatically to high-dose steroids.

82: Garg K, Satyarthee GD. Professor Jean Holowach-Thurston: Who along with Spouse Laid the Foundation Stone of Modern Pediatric Neurology as Superspeciality. *Asian J Neurosurg*. 2019 Jan-Mar;14(1):336-337. doi: 10.4103/ajns.AJNS_265_17. PubMed PMID: 30937071; PubMed Central PMCID: PMC6417320.

83: Garg K, Sharma R, Gurjar HK, Kale SS. Pontomedullary germinoma with suprasellar and spinal metastasis: A report and comprehensive review of literature. *Neurol India*. 2019 Jan-Feb;67(1):308-311. doi: 10.4103/0028-3886.253629. PubMed PMID: 30860147.

84: Garika SS, Sharma A, Razik A, Sharma A, Pandey RM, Gamanagatti S, Kumar R, Mittal R. Comparison of F18-Fluorodeoxyglucose Positron Emission Tomography/Computed Tomography and Dynamic Contrast-Enhanced Magnetic Resonance Imaging as Markers of Graft Viability in Anterior Cruciate Ligament Reconstruction. *Am J Sports Med*. 2019 Jan;47(1):88-95. doi: 10.1177/0363546518805092. Epub 2018 Nov 27. PubMed PMID: 30481047.

BACKGROUND:: F18-fluorodeoxyglucose positron emission tomography/computed tomography (F18-FDG PET/CT) can be used to assess changes in the metabolism of an anterior cruciate ligament (ACL) graft as it is undergoing "ligamentization." Dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) is the preferred modality for noninvasive assessment of graft structure and graft vascularity.

PURPOSE:: To compare the use of F18-FDG PET/CT and DCE-MRI to assess ligamentization within the ACL graft and correlate the results with clinical tests.

STUDY DESIGN:: Case series; Level of evidence, 4.

METHODS:: Among 30 recruited patients, 27 patients (3 females and 24 males) completed 2 follow-up assessments at a mean of 125 ± 22 days and 259 ± 38 days after arthroscopic ACL reconstruction. At both assessments, anterior drawer test, Lachman test, and Lysholm scoring (LS) were conducted. Images from F18-FDG PET/CT and MRI were analyzed qualitatively and quantitatively (maximum standardized uptake value [SUVmax], SUVmax ratio to the contralateral side [SUVmax CL], normalized enhancement [NE]) in 3 zones: femoral, intra-articular (IA), and tibial. Of the 27 recruited patients, 1 patient had reinjury due to a fall. Therefore, 26 patients were considered for the final analysis.

RESULTS:: A significant improvement ($P = .0001$) was found in median LS, from 78.5 (range, 62-90) to 94.5 (range, 84-100), at the second follow-up. All grafts were found to be viable on PET/CT and vascularized on MRI. All grafts were seen as continuous on MRI, with exception of 1 graft at the second follow-up. Dynamic MRI identified single-vessel supply to all of the grafts at the first follow-up and multiple-vessel supply in 10 patients at the second follow-up. Reduction in the median SUVmax, SUVmax CL, and NE at second follow-up was seen in all 3 zones. Only SUVmax CL in the IA zone showed a significant reduction ($P = .032$); patients with excellent LS at the second follow-up showed significantly higher reduction ($P = .005$) than patients with good LS. NE in the IA zone was correlated (0.39 ; $P = .048$) with LS only at the first follow-up, whereas SUVmax CL (-0.52 ; $P = .006$) and SUVmax (-0.49 , $P = .010$) in the IA zone negatively correlated with LS at the second follow-up only. No correlation was observed between PET/CT and MRI parameters.

CONCLUSION:: Glucose metabolism and vascularity in the graft tissue can be used to assess ligamentization of ACL graft. A viable and vascularized graft at first follow-up is associated with good to excellent final outcome, regardless of LS at this stage. Since no correlation was observed between PET/CT and MRI parameters, they may be assessing different domains of the same process. Higher NE in the IA zone at the first follow-up and lower SUVmax CL in the same region at second follow-up are associated with better outcome.

85: Gaur N, Sharma P. Commentary: "Current" consensus: Electrodiagnostics in eye. *Indian J Ophthalmol*. 2019 Jan;67(1):30-31. doi: 10.4103/ijo.IJO_1590_18. PubMed PMID: 30574886; PubMed Central PMCID: PMC6324101.

86: Gaur N, Sharma P. Management of Duane retraction syndrome: A simplified approach. *Indian J Ophthalmol*. 2019 Jan;67(1):16-22. doi: 10.4103/ijo.IJO_967_18. Review. PubMed PMID: 30574884; PubMed Central PMCID: PMC6324156.

Duane retraction (or co-contraction) syndrome is a congenital restrictive strabismus which can occur either as an isolated entity or in conjunction with other congenital anomalies and is now listed as a congenital cranial dysinnervation disorder. It is characterized by co-contraction of horizontal recti on attempted adduction causing globe retraction along with variable amounts of upshoots or downshoots. It may have limited abduction or adduction or both and present as esotropic, exotropic, or orthotropic Duane. The diagnosis of this disease is usually clinical. However, recent research has provided a greater insight into the genetic basis of this disease paving a way for a greater role of genetics in the diagnosis and management. This disease can have a varied presentation and hence the treatment plan should be tailor-made for every patient. The indications for surgery are abnormal head posture, deviations in the primary position, retraction and narrowing of palpebral aperture and up- or downshoots during adduction, and sometimes also to improve abduction. The arrival of newer surgical techniques of periosteal fixation (PF) of lateral rectus (LR), partial vertical rectus transposition, or superior or inferior rectus transposition in addition to LR recession with Y-split has vastly improved the management outcomes, providing not only primary position orthophoria but also increased binocular visual fields as well.

87: Gautam D, Malhotra R. Total Hip Arthroplasty in Ankylosing Spondylitis With Extension Contracture of Hips. *J Arthroplasty*. 2019 Jan;34(1):71-76. doi: 10.1016/j.arth.2018.08.025. Epub 2018 Aug 29. PubMed PMID: 30342954.

BACKGROUND: Despite significant pain relief following total hip arthroplasty (THA) in patients with ankylosing spondylitis, a small subset of patients presenting with extra-articular extension contracture of hips remains unsatisfied.

METHODS: We retrospectively evaluated the patients with ankylosing spondylitis who underwent simultaneous bilateral THA and had extensor tightness of both hips preoperatively. They were managed with modified Z-plasty of iliotibial band. Patients with windswept deformity, commonly seen in bilateral hip arthritis caused by ankylosing spondylitis, were excluded.

RESULTS: Between July 2011 and June 2015, out of 148 patients with bilateral hip involvement, 10 patients (20 hips) had extension contracture of both hips that was addressed during surgery. All patients were followed up for a minimum of 2 years. They could sit comfortably on a chair of height 18 inches with hips and knees flexed to at least 90°. The mean postoperative sum range of motion was 144.6° with an average hip flexion of 95° (range, 90°-105°). None of them had recurrence of extension contracture. There was significant improvement in range of motion and hence ambulation and function. No radiolucent lines exceeding 2 mm were seen in any of the zones around either of the components as evaluated in latest X-rays.

CONCLUSION: Extension contracture of hip although rare is a noticeable problem and needs to be addressed during THA. Modified Z-plasty technique of iliotibial band is a reliable method in managing these patients.

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88: Gautam S, Tolahunase M, Kumar U, Dada R. Impact of yoga based mind-body intervention on systemic inflammatory markers and co-morbid depression in active Rheumatoid arthritis patients: A randomized controlled trial. *Restor Neurol Neurosci*. 2019;37(1):41-59. doi: 10.3233/RNN-180875. PubMed PMID: 30714983.

BACKGROUND: Recovery of patients with rheumatoid arthritis (RA) depends on

several physical and psychological factors, besides pharmacological treatment. Co-morbid depression adversely affects the outcome in RA. Usual medical therapies have a limited scope and fail to cure the psychological component of the disease. With advanced therapeutic options, achieving a state of remission has become the treatment goal, yoga based mind body intervention (MBI) may provide a holistic approach in its treatment dimension. Hence, MBIs are the need of hour as majority of diseases have a psychosomatic component.

OBJECTIVE: To explore the effect of Yoga based MBI on disease specific inflammatory markers and depression severity in active RA patients on routine disease modifying anti-rheumatic drugs (DMARDs) therapy.

METHODS: A total of 72 RA patients were randomized into 2 groups: yoga group (yoga with DMARDs) and control group (DMARDs only). Blood samples were collected pre and post intervention for primary outcome measurements of systemic biomarkers. Disease activity score 28, erythrocyte sedimentation rate (DAS28ESR) and health assessment questionnaire disability index (HAQ-DI) were used to assess disease activity and functional status respectively at pre and post intervention time-points. Secondary outcome, depression severity, was assessed by Beck Depression Inventory II scale (BDI-II) at 2 weekly intervals during 8 weeks of the study interventional plan.

RESULTS: After 8 weeks of yoga based MBI, there was significant decrease in the severity of RA as seen by reduction in levels of various systemic inflammatory markers as well as in DAS28ESR (p-value <0.0001; effect size=0.210) and HAQ-DI (p-value 0.001; effect size=0.159). Also, yoga group experienced a statistically significant time dependent step-wise decline in depression symptoms over the period of 8 weeks as compared to control group (p-value <0.0001; effect size=0.5). Regression analysis showed greater reduction in the scores of BDI-II with DAS28ESR (R²=0.426; p< 0.0001) and HAQ-DI (R²=0.236; p=0.003) in yoga group.

CONCLUSIONS: Yoga, a mind body intervention re-established immunological tolerance by aiding remission at molecular and cellular level along with significant reduction in depression. Thus in this severe autoimmune inflammatory arthritis with a major psychosomatic component, yoga can be used as a complementary/adjunct therapy.

89: Ghoshal UC, Sachdeva S, Pratap N, Verma A, Karyampudi A, Misra A, Abraham P, Bhatia SJ, Bhat N, Chandra A, Chakravartty K, Chaudhuri S, Chandrasekar TS, Gupta A, Goenka M, Goyal O, Makharia G, Mohan Prasad VG, Anupama NK, Paliwal M, Ramakrishna BS, Reddy DN, Ray G, Shukla A, Sainani R, Sadasivan S, Singh SP, Upadhyay R, Venkataraman J. Indian consensus on chronic constipation in adults: A joint position statement of the Indian Motility and Functional Diseases Association and the Indian Society of Gastroenterology. *Indian J Gastroenterol.* 2018 Nov;37(6):526-544. doi: 10.1007/s12664-018-0894-1. Epub 2019 Jan 8. PubMed PMID: 30617919; PubMed Central PMCID: PMC6339668.

The Indian Motility and Functional Diseases Association and the Indian Society of Gastroenterology developed this evidence-based practice guideline for management of chronic constipation. A modified Delphi process was used to develop this consensus containing 29 statements, which were generated by electronic voting iteration as well as face to face meeting and review of the supporting literature primarily from India. These statements include 9 on epidemiology, clinical presentation, and diagnostic criteria; 8 on pathophysiology; and the remaining 12 on investigations and treatment. When the proportion of those who voted either to accept completely or with minor reservation was 80% or higher, the statement was regarded as accepted. The members of the consensus team believe that this would be useful for teaching, clinical practice, and research on chronic constipation in India and in other countries with similar spectrum of the disorders.

90: Gogia A, Gupta R, Kumar L, Sharma A, Soni L. Chronic lymphocytic leukemia with deletion 17p: An Indian scenario. *South Asian J Cancer.* 2019 Jan-Mar;8(1):40. doi: 10.4103/sajc.sajc_287_18. PubMed PMID: 30766851; PubMed Central PMCID: PMC6348775.

91: Goyal A, Tirumalasetty S, Hossain G, Challoo R, Arya M, Agrawal R, Agrawal D.

Development of a Stand-Alone Independent Graphical User Interface for Neurological Disease Prediction with Automated Extraction and Segmentation of Gray and White Matter in Brain MRI Images. *J Healthc Eng.* 2019 Feb 14;2019:9610212. doi: 10.1155/2019/9610212. eCollection 2019. PubMed PMID: 30906515; PubMed Central PMCID: PMC6393878.

This research presents an independent stand-alone graphical computational tool which functions as a neurological disease prediction framework for diagnosis of neurological disorders to assist neurologists or researchers in the field to perform automatic segmentation of gray and white matter regions in brain MRI images. The tool was built in collaboration with neurologists and neurosurgeons and many of the features are based on their feedback. This tool provides the user automatized functionality to perform automatic segmentation and extract the gray and white matter regions of patient brain image data using an algorithm called adapted fuzzy c-means (FCM) membership-based clustering with preprocessing using the elliptical Hough transform and postprocessing using connected region analysis. Dice coefficients for several patient brain MRI images were calculated to measure the similarity between the manual tracings by experts and automatic segmentations obtained in this research. The average Dice coefficients are 0.86 for gray matter, 0.88 for white matter, and 0.87 for total cortical matter. Dice coefficients of the proposed algorithm were also the highest when compared with previously published standard state-of-the-art brain MRI segmentation algorithms in terms of accuracy in segmenting the gray matter, white matter, and total cortical matter.

92: Goyal L, Gupta ND, Gupta N, Chawla K. Free Gingival Graft as a Single Step Procedure for Treatment of Mandibular Miller Class I and II Recession Defects. *World J Plast Surg.* 2019 Jan;8(1):12-17. doi: 10.29252/wjps.8.1.12.. PubMed PMID: 30873357; PubMed Central PMCID: PMC6409142.

BACKGROUND: Gingival recession is a frequent issue encountered by both the clinician and the patient. This study was aimed to assess the predictability of the free gingival graft as a single step procedure in terms of root coverage and aesthetics in Miller Class I and II mandibular gingival recession.

METHODS: Ten patients (4 males, 6 females) aged 25-30 years with a total of 12 mandibular sites having Miller class I and II recession were selected. All recession sites were treated with single step free gingival graft procedure. Clinical parameters like recession depth, recession width, width of attached gingiva, probing depth and clinical attachment level were recorded at baseline, 6 and 9 months. Visual analog score at 1, 6 and 9 months postoperatively was provided.

RESULTS: There was a reduction in mean recession depth from 3.66 ± 1.20 to 0.91 ± 0.99 mm suggesting coverage of 82% over a period of 9 months. There was statistically significant gain in clinical attachment level and width of attached gingiva. Aesthetically, it was acceptable by patients as measured by visual analog scores.

CONCLUSION: Free gingival graft as a single step procedure is acceptable in terms of root coverage and aesthetics.

93: Goyal M, Khandpur S, Ramam M, Sharma VK, Singh MK. A Study of the Histopathological Features of Alopecias on Transverse Sections of Scalp Biopsies. *Indian J Dermatol.* 2019 Jan-Feb;64(1):47-54. doi: 10.4103/ijd.IJD_477_17. PubMed PMID: 30745635; PubMed Central PMCID: PMC6340243.

Background: Transverse sections of scalp biopsies are performed for the assessment of alopecias and are considered advantageous over vertical sections.

Aim: The aim was to study the histopathological features of alopecias on transverse sections of scalp biopsies.

Methods: It was a descriptive study. Clinically confirmed cases of noncicatricial and cicatricial alopecias were subjected to 4 mm scalp biopsies, which were sectioned transversely and analyzed. Biopsies obtained from occipital region of androgenetic alopecia (AGA) cases were taken as controls.

Results: Biopsies from 41 cases were assessed, including male and female AGA, alopecia areata (AA), trichotillomania, lichen planopilaris (LPP), discoid lupus

erythematosus (DLE), and folliculitis decalvans (FD). Normal scalp (control) biopsies showed the median total number of hair follicles of 35 (32-37), anagen:telogen/catagen ratio of 17.5 (16.5-31), and terminal:vellus ratio of 15 (10.7-17.5). In AGA and AA, miniaturization and shift toward telogen and catagen hair were consistently observed. Peribulbar inflammation was seen in two-third of AA. Trichotillomania showed increased catagen hair and numerous pigment casts. In DLE, besides perifollicular inflammation, prominent peri-arrector pili and peri-eccrine inflammation were observed. Type of inflammatory infiltrate was similar in DLE and LPP (lymphocytic), whereas FD showed neutrophilic and plasma cell infiltrate, both around follicles and interstitially. Basal cell damage in the follicles and pigment incontinence were seen in majority of DLE and LPP patients. DLE also showed basement membrane thickening, mucin deposition, and telangiectasia. Reduction/absence of sebaceous glands and perifollicular fibrosis were observed in almost all cicatricial alopecias. Conclusion: Transverse sectioning may be a useful tool in the diagnosis of alopecias.

94: Gulati K, Madhukar V, Verma V, Singh AR, Gupta SK, Sarkar C. Medical leadership competencies: A comparative study of physicians in public and private sector hospitals in India. *Int J Health Plann Manage*. 2019 Jan;34(1):e947-e963. doi: 10.1002/hpm.2709. Epub 2018 Nov 27. PubMed PMID: 30480333.

PURPOSE: Indian health care system comprising of public and private sectors needs enhancement of medical leadership capacity to face the growing challenges. Hence, this study was designed to evaluate medical leadership competencies of public and private sector doctors.

FINDINGS: A survey questionnaire was developed to assess "self-assessed proficiency levels" as well as "perceived importance of competency levels," to which 532 doctors responded-290 (54.5%) from private sector and 242 (45.5%) from public sector hospitals. Statistically significant "leadership competency gap" was observed for all 30 leadership competencies in both sectors, more so in public sector. The 10 most deficient competencies were mainly in the NHS-MLCF domains of "working with others," "managing services," and "setting direction." The most low-rated competency among public sector doctors was "knowledge of HR, procurement, financial, and contract management" while "ability to influence key decision makers who determine future government policies" was most deficient among private sector physicians. Further, deficiencies related to "time and stress management" and "conducting need analysis, identifying and prioritizing requirements" were confined to public and private sector doctors, respectively. CONCLUSIONS: This study, first from India, highlights a critical need for medical leadership development programs in both sectors for enhancement of medical leadership capacity in the country.

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95: Gulati S, Kaushik JS, Saini L, Sondhi V, Madaan P, Arora NK, Pandey RM, Jauhari P, Manokaran RK, Sapra S, Sharma S, Paul VK, Sagar R. Development and validation of DSM-5 based diagnostic tool for children with Autism Spectrum Disorder. *PLoS One*. 2019 Mar 13;14(3):e0213242. doi: 10.1371/journal.pone.0213242. eCollection 2019. PubMed PMID: 30865682; PubMed Central PMCID: PMC6415840.

Diagnostic and Statistical Manual of mental disorder-IV (DSM-IV) TR based INCLIN Diagnostic Tool for Autism Spectrum Disorder (INDT-ASD) is an established instrument for the diagnosis of ASD in Indian subcontinent and low-middle income countries (LMIC). The introduction of DSM-5 necessitated revision of existing INDT-ASD tool to incorporate the DSM-5 related changes. This study was undertaken to develop and validate the DSM-5 based All India Institute of Medical Sciences (AIIMS)-Modified-INDT-ASD Tool. The modifications were done using Delphi method and included: (a) rearrangement of questions from the previous tool; and (b) addition of new questions on sensory symptoms. The modified tool was validated against DSM-5 diagnostic criteria. In addition, receiver operating characteristic (ROC) curves were used to determine the cut-off for total score as compared to Childhood Autism Rating Scale (CARS) score to grade the severity of ASD.

Two-hundred-twenty-five children (159 boys, median age = 47months) were enrolled. The modified tool demonstrated sensitivity of 98.4% and specificity of 91.7% to diagnose ASD. A score ≥ 14 on the tool was suggestive of severe ASD (CARS >36.5) with a sensitivity and specificity of 80% and 80.7% respectively [Area under the curve = 0.89]. AIIMS-Modified-INDT-ASD Tool is a simple and structured instrument based on DSM-5 criteria which can facilitate diagnosis of ASD with acceptable diagnostic accuracy.

96: Guleria R, Dhar R, Mahashur A, Ghoshal AG, Jindal SK, Talwar D, Prabhudesai P, Abhayankar N, Paramesh H, Balamurugan S. Indian Consensus on Diagnosis of Cough at Primary Care Setting. *J Assoc Physicians India*. 2019 Jan;67(1):92-98. PubMed PMID: 30935190.

97: Guleria RJ, Thakkar KM. Nebulizer practices among paramedics in India. *Lung India*. 2019 Jan-Feb;36(1):80-81. doi: 10.4103/lungindia.lungindia_147_18. PubMed PMID: 30604714; PubMed Central PMCID: PMC6330797.

98: Gunasekaran S, Dhiman R, Vanathi M, Mohanty S, Satpathy G, Tandon R. Ocular Surface Microbial Flora in Patients with Chronic Limbal Stem Cell Deficiency Undergoing Cultivated Oral Mucosal Epithelial Transplantation. *Middle East Afr J Ophthalmol*. 2019 Jan-Mar;26(1):23-26. doi: 10.4103/meajo.MEAJO_172_16. PubMed PMID: 31114120; PubMed Central PMCID: PMC6507384.

PURPOSE: The purpose of this study is to analyze the ocular surface microbial flora in patients with chronic limbal stem cell deficiency (LSCD) due to Stevens-Johnson Syndrome (SJS) and ocular chemical injury undergoing cultivated oral mucosal epithelial transplantation (COMET).

METHODS: Patients of SJS and chemical injury who had bilateral total LSCD planned for COMET were studied. Conjunctival swab was taken before surgery. Parameters evaluated were organism cultured, sensitivity pattern, frequency of positive culture, and clinical impact on management strategy.

RESULTS: Thirteen patients were included in which nine were males and four females. All patients had positive conjunctival swab culture. Most common organism isolated was *Staphylococcus epidermidis*, followed by *Staphylococcus aureus* and *Pseudomonas aeruginosa*. The staphylococcal species isolated were sensitive to all the conventional antibiotics while *Pseudomonas* cultured showed resistance to cefuroxime, ceftriaxone, and ceftazidime. Repeat conjunctival swab sent after a week of topical antibiotic therapy yielded positive culture of the same organism twice in 25% (3/12), thrice in 58.3% (7/12), and four times in 16.6% (2/12) of the patients. One patient had a polymicrobial flora with positive yield of *S. aureus* (thrice), *S. epidermidis* (twice), and *P. aeruginosa* (twice) in consecutive conjunctival swab culture in the absence of clinical infection. Two patients with persistent positive cultures had to undergo repeat oral mucosal harvesting as the transplantation of the cultivated explants had to be deferred.

CONCLUSION: Ocular surface in LSCD patients yielded pathogenic organisms on culture. Poor ocular surface with absent tear film could be the contributing factors. It is important to perform the conjunctival swab culture before COMET surgery.

99: Gunathilaka PK, Mukherjee A, Jat KR, Lodha R, Kabra SK. Clinical Profile and Outcome of Pediatric Sarcoidosis. *Indian Pediatr*. 2019 Jan 15;56(1):37-40. PubMed PMID: 30806359.

OBJECTIVE: To document clinical features and outcome of children with sarcoidosis.

METHODS: Case records of 18 children (mean (SD) age 9 (2.2) years) diagnosed with sarcoidosis between 2006 and 2016 were reviewed. All children were followed up every 2-3 months and monitored for clinical and laboratory parameters. Their treatment and outcome were recorded.

RESULTS: Clinical features at the time of diagnosis were fever (83%), uveitis (50%), difficulty in breathing (44%), hepatosplenomegaly, weight loss, arthritis and peripheral adenopathy. Imaging findings included: hilar adenopathy (94%),

abdominal nodes (50%) and pulmonary infiltrates (44%). All children were treated with steroids (range 6-12 months) and weekly low dose oral methotrexate. All patients showed significant improvement over a mean (SD) duration of follow-up of 3.1 (0.9) years, as assessed by resolution of clinical symptoms, and improvement in spirometry parameters, erythrocyte sedimentation rate, and serum angiotensin converting enzyme levels.

CONCLUSIONS: Children with sarcoidosis seem to respond well to systemic steroids and low dose methotrexate. Delayed diagnosis and ocular involvement are probably associated with poor outcome.

100: Gunisetty S, Nayak K, Chandra Rai R, Chawla Y, Reddy ES, Aggarwal C, Maheshwari D, Panda H, Ansari NA, Singh P, Kaur M, Dixit K, Sharma P, Bhatnagar P, Priyamvada L, Bhaumik SK, Ahamed SF, Vivek R, Ray P, Shet A, Coshic P, Lodha R, Kabra SK, Afroze D, Yousuf A, Ahmed R, Murali-Krishna K, Chandele A. Analysis of dengue specific memory B cells, neutralizing antibodies and binding antibodies in healthy adults from India. *Int J Infect Dis.* 2019 Jan 15. pii: S1201-9712(19)30029-3. doi: 10.1016/j.ijid.2019.01.018. [Epub ahead of print] PubMed PMID: 30658170.

BACKGROUND: The Indian population is facing highest dengue burden worldwide supporting an urgent need for vaccines. For vaccine introduction, evaluation and interpretation it is important to gain a critical understanding of immune memory induced by natural exposure. However, immune memory to dengue remains poorly characterized in this region.

METHODS: We enumerated levels of dengue specific memory B cells (MBC), neutralizing (NT) and binding antibodies in healthy adults (n=70) from New Delhi. RESULTS: NT-antibodies, binding antibodies and MBC were detectable in 86%, 86.56% and 81.63% of the subjects respectively. Among the neutralizing positive subjects, 58%, 27%, 5% and 10% neutralized all four, any three, any two and any one dengue serotypes respectively. The presence of the neutralizing antibodies was associated with the presence of the MBC and binding antibodies. However, a massive interindividual variation was observed in the levels of the neutralizing antibodies (range, <1:50-1:30,264), binding antibodies (range, 1:3,000-1:134,000,) as well as the MBC (range=0.006%-5.05%).

CONCLUSION: These results indicate that a vast majority of the adults are immune to multiple dengue serotypes and show massive interindividual variation in neutralizing/binding antibodies and MBCs - emphasizing the importance of monitoring multiple parameters of immune memory in order to properly plan, evaluate and interpret dengue vaccines.

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101: Gupta A, Mathur VP. Government initiatives for better oral health: A glimpse. *J Indian Soc Pedod Prev Dent.* 2019 Jan-Mar;37(1):110-111. doi: 10.4103/JISPPD.JISPPD_338_18. PubMed PMID: 30804317.

102: Gupta AK, Kumar GK, Rani K, Pokhriyal R, Khan MI, Kumar DR, Goyal V, Tripathi M, Gupta R, Chadda RK, Vanamail P, Mohanty AK, Hariprasad G. 2D-DIGE as a strategy to identify serum protein biomarkers to monitor pharmacological efficacy in dopamine-dictated states of Parkinson's disease and schizophrenia. *Neuropsychiatr Dis Treat.* 2019 Apr 24;15:1031-1044. doi: 10.2147/NDT.S198559. eCollection 2019. PubMed PMID: 31114209; PubMed Central PMCID: PMC6488160.

Objectives: Parkinson's disease and schizophrenia are clinical scenarios that occur due to dopaminergic deficit and hyperactivity in the midbrain, respectively. Current pharmacological interventions for these two diseases therefore aim to restore normal dopamine levels in the midbrain. But during therapy, there is an overshooting of dopamine concentrations that result in hallucinations in Parkinson's disease patients and extra-pyramidal symptoms in schizophrenic patients. This causes a lot of inconvenience to the patients and the clinicians. There are no tests currently available to monitor drug efficacy in these two neuropsychiatric diseases.

Materials and methods: Parkinson's disease and schizophrenic naïve patients were

recruited. Serum proteins isolated from these two clinical phenotypes were labeled with fluorescent cyanine dyes and analyzed by two-dimensional difference in gel electrophoresis proteomic experiment. Differentially expressed spots that had consistent expression pattern across five sets of biological replicate gels were trypsin digested and subjected to mass spectrometric analysis for protein identification. Validation experiments were done for the identified proteins using antibody-based assay on a patient cohort that included naïve, treated, and those who had side effects.

Results: Serum α - and β -globin chains were identified as differentially expressed proteins having threefold higher expressions in Parkinson's patients as compared to schizophrenia. Interestingly, concentrations of these two proteins had an inverse correlation across clinical phenotypes in the dopaminergic spectrum. RBC contamination as a source for these proteins was ruled out.

Conclusion: There is a clear association of free serum globin with dopaminergic clinical states. This lays a platform for protein biomarker-based monitoring of pharmacological efficacy in Parkinson's disease and schizophrenia.

103: Gupta DK, Khanna K, Sharma S. Experience with the Redo Pull-Through for Hirschsprung's Disease. *J Indian Assoc Pediatr Surg.* 2019 Jan-Mar;24(1):45-51. doi: 10.4103/jiaps.JIAPS_52_18. PubMed PMID: 30686887; PubMed Central PMCID: PMC6322179.

Aim: This study aims to evaluate the need of Redo pull-through (Re PT) procedures for Hirschsprung's disease (HD) and suggest preventive strategies.

Materials and Methods: Patients who underwent redo procedures for HD from 1980 to 2016 by a single surgeon were retrospectively reviewed.

Results: Of 167 patients operated for HD, 32 underwent Re PT; 7 were previously operated by the same surgeon, while 25 were referred from outside. Indication for Re PT included residual disease including the rectal pouch following-Duhamel (12), false-negative biopsy (3), retraction of bowel (5), anorectal stricture (2), bowel twist (1), cuff inversion (2), postmyectomy continued symptoms after primary PT (1), fecal fistula (1), Re PT after surgery for adhesive intestinal obstruction (3), bleeding (1), and combination of causes, including scarred perineum (1). Age at follow-up ranged from 2.5 to 26 years. Proximal diversion was performed in 19 and 14 underwent open Scott Boley's/Soave PT and 5 ileoanal anastomosis. Of the remaining, nondiverted 13 patients, 5 underwent transanal endorectal PT and 8 underwent PT of colostomy.

Conclusions: Most patients of Re PT came after an initial Duhamel's procedure. Retraction of bowel, inversion of cuff, twist, distal bowel stricture, and perianal fibrosis were found after Scott Boley procedure. Proper planning with an initial diversion, nutritional buildup, barium study evaluation, frozen section facility, experienced pathologist, and an expert surgeon are prerequisites for a successful outcome after an initial as well as Re PT.

104: Gupta H, Gupta R, Rai S, Kataria H, Jain V, Shankar V. Is empirical use of the antibiotic combination of cefuroxime and clavulanic acid rational? *J Glob Antimicrob Resist.* 2019 Mar;16:150-151. doi: 10.1016/j.jgar.2018.12.017. Epub 2019 Jan 3. PubMed PMID: 30611930.

105: Gupta H, Ghasi RG, Kataria H, Jain V, Shankar V, Daripa RK, Upadhyay AD. Popliteal neurovascular bundle is safe during inside-out repair of medial meniscus without a safety incision. *Knee Surg Sports Traumatol Arthrosc.* 2019 Jan;27(1):153-165. doi: 10.1007/s00167-018-5060-x. Epub 2018 Jul 17. PubMed PMID: 30019073.

PURPOSE: There is a theoretical risk of injury to neurovascular structures during inside-out meniscal repair without a safety incision, although there are limited studies assessing this risk. This simulation study on archival MRI films was performed to assess the risk for the popliteal neurovascular bundle and the peroneal nerve during passage of needles for inside-out meniscus repair without a "safety incision", thereby defining a "safe zone" of the menisci that can be safely repaired using this technique.

METHODS: Archival MRI scans (n=50) were retrieved and axial sections through

the menisci were used for simulation. The needle passage was simulated for different points on the posterior horn and body of lateral and medial menisci at "half-hour" intervals using clock method (15° intervals) with three different portals and two different needle cannulas, resulting in six different scenarios of needle passage for each point on the meniscus. The distance of the needle in each scenario was measured from popliteal vessels (n=50) and peroneal nerve (n=10). The value "mean-3SD" was calculated for positive means and "Mean+3SD" was calculated if the mean was negative. An additional 2 mm was defined as "safe distance". Thus, simulation models in which the mean-3SD was less than 2 mm (or mean+3SD was greater than -2 mm for negative means) were labelled as "unsafe".

RESULTS: Needle passage through medial meniscus at and medial to 1 o'clock position for a right knee (or 11 o'clock position for a left knee) was safe, irrespective of the portal and needle type. For the lateral meniscus, only the equatorial region was found to be safe with this method.

CONCLUSIONS: The popliteal neurovascular bundle is safe during the inside-out medial meniscal repair without a safety incision. For the terminal-most part of the posterior horn, the AM portal and the straight cannula should be avoided. However, this method without safety incision cannot be recommended for lateral meniscus because of the risk to the popliteal vessels and the peroneal nerve. Instead, the inside-out method with a safety incision, or an all-inside method should be used for lateral meniscus.

LEVEL OF EVIDENCE: III.

106: Gupta N, Singh G, Xess I, Soneja M. Managing mucormycosis in a resource-limited setting: challenges and possible solutions. *Trop Doct.* 2019 Apr;49(2):153-155. doi: 10.1177/0049475519825561. Epub 2019 Jan 28. PubMed PMID: 30691355.

Mucormycosis is a potentially fatal fungal infection with high prevalence in poor-resource settings. Besides being an extremely expensive disease to treat, the challenges range from lack of experienced mycologists or mycology department to knowledge and availability of treatment regimes.

107: Gupta N, Vinod KS, Mittal A, Kumar APA, Kumar A, Wig N. Histoplasmosis, heart failure, hemolysis and haemophagocytic lymphohistiocytosis. *Pan Afr Med J.* 2019 Jan 23;32:43. doi: 10.11604/pamj.2019.32.43.14954. eCollection 2019. PubMed PMID: 31143348; PubMed Central PMCID: PMC6522155.

Histoplasmosis is an endemic mycosis with global distribution, primarily reported in immunocompromised individuals. A 29-year old immunocompetent male presented with fever, hepatosplenomegaly and pancytopenia. His peripheral blood showed features suggestive of intravascular hemolysis and echocardiography showed features suggestive of pulmonary arterial hypertension. Bone marrow showed yeast with morphology suggestive of *Histoplasma capsulatum*. Further investigations revealed hyperferritinemia, hypofibrinogenemia and increased triglycerides. With a diagnosis of progressive disseminated histoplasmosis with secondary Haemophagocytic lymphohistiocytosis, he was successfully treated with amphotericin B followed by itraconazole. We report this case to highlight the atypical and rare manifestations of histoplasmosis.

108: Gupta P, Panda U, Parmar A, Bhad R. Internalized stigma and its correlates among treatment seeking opium users in India: A cross-sectional observational study. *Asian J Psychiatr.* 2019 Jan;39:86-90. doi: 10.1016/j.ajp.2018.12.004. Epub 2018 Dec 24. PubMed PMID: 30594880.

Opium has been used in India since ancient times for social, recreational, religious and medicinal purposes. Opium users seem to constitute a distinct sub-population among opioid users, who have minimal complications, better functioning and socio-cultural acceptance. Prominent levels of stigma have been reported against people who use opioid drugs, but the same cannot be extrapolated to opium users. There is a vast number of opium users in India, and it is prudent to understand the stigma faced by them to better address their problems. Hence, in the current study we aimed to assess the internalized stigma and its correlates among opium users who seek treatment at a tertiary care drug treatment

centre in North India. 117 adult male participants having opioid dependence (opium being the most common opioid in last 3 months) were assessed using Internalized Stigma of Mental Illness (ISMI) scale - Hindi version. The stigma scores were in the mild to moderate range, which was less than that found in previous studies among heroin and alcohol users in similar setting. Moreover, higher stigma scores were associated with lower educational status and higher proportions of income spent on substances. This is the first study to document stigma among opium users. Further research needs to be conducted to understand the determinants of stigma in this population.

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109: Gupta S, Saluja G, Chaurasia AK, Behera AK, Gupta V. Transcorneal tube extrusion: Anterior segment optical coherence tomography-aided management. *Indian J Ophthalmol*. 2019 Jan;67(1):126-127. doi: 10.4103/ijo.IJO_416_18. PubMed PMID: 30574911; PubMed Central PMCID: PMC6324137.

110: Gupta S, Selvan H, Gupta V. Single-suture single-knot ab interno cyclohexy for extensive posttraumatic cyclodialysis: Modified sewing machine technique. *J Cataract Refract Surg*. 2019 Jan;45(1):3-7. doi: 10.1016/j.jcrs.2018.08.031. Epub 2018 Nov 1. PubMed PMID: 30391153.

We describe a modified sewing machine technique that is ab interno and minimally invasive. The single-suture, single-knot endocyclohexy (internal suture fixation) is performed to correct cyclodialysis. This inside-out technique is an alternative to existing standard cleft repair procedures, such as external direct/indirect cyclohexy and endocyclotamponade (internal mechanical tamponade using extraneous agents). Results in 1 case indicate that the modified technique can be used as a primary procedure and in eyes in which previous cyclohexy failed.

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111: Gupta S, Goswami K. Letter to the editor regarding the article 'individual and household risk factors of severe acute malnutrition among underfive children in Mao, Chad: a matched casecontrol study'. *Arch Public Health*. 2019 Mar 28;77:19. doi: 10.1186/s13690-019-0336-2. eCollection 2019. PubMed PMID: 30976417; PubMed Central PMCID: PMC6439988.

We would like to thank the authors Jovana Dodos et al., for the article "Individual and household risk factors of severe acute malnutrition among underfive children in Mao, Chad: a matched casecontrol study".

112: Gupta V, Sharma VK. Authors' reply. *Indian J Dermatol Venereol Leprol*. 2019 Jan-Feb;85(1):87-88. doi: 10.4103/ijdv.IJDVL_843_18. PubMed PMID: 30516169.

113: Gupta V, Taneja N, Khaitan BK, Singh M. Partial unilateral lentiginosis with ipsilateral ocular involvement and seizures. *Indian J Dermatol Venereol Leprol*. 2019 Jan-Feb;85(1):130. doi: 10.4103/ijdv.IJDVL_1025_16. PubMed PMID: 29176249.

114: Hasan R, Bhatt D, Khan S, Khan V, Verma AK, Bharti PS, Anees A, Dev K. Frequency of I655V SNP of HER-2/neu in colorectal cancer: a study from India. *3 Biotech*. 2019 Jan;9(1):11. doi: 10.1007/s13205-018-1545-z. Epub 2019 Jan 2. PubMed PMID: 30622849; PubMed Central PMCID: PMC6314952.

The present study was conducted to determine the prognostic significance of I655V SNP (rs1136201) is a genetic one in HER-2 oncoprotein in cases of colorectal cancer (CRC). We conducted a case-control study analysing 83 subjects (naïve primary CRC cases) who underwent CRC biopsy/colectomy and included 57 healthy control subjects. Analysis of HER-2 polymorphism was done by PCR-RFLP technique. The mean age was found to be 55.9 years; median age was 56 years and mode age was

54 years with a range of 43 (30-73). Males constitute 63 (75.9%) and females constitute 20 (24.1%) of patient population. According to gradewise distribution, 12 (14.45%) patients were of Grade I, 53 (63.85%) of Grade II, and 18 (21.68%) were of Grade III. We found out that out of 83 patients, 52 (62.65%) were of homozygous wild type (A/A; Ile/Ile); 27 (32.53%) were of heterozygous type (A/G; Ile/Val) and 4 (4.81%) were of homozygous mutant type (G/G; Val/Val). Allelic frequency of Ile (A) was found out to be 0.79 and that of Val (G) is 0.21 and were not significantly different from the healthy control population. Fischer's exact p value obtained was 0.86.

115: Jain D. EBUS-TBNA for Diagnosis of Extrapulmonary Lesions. *J Cytol.* 2019 Jan-Mar;36(1):59-60. doi: 10.4103/JOC.JOC_124_18. PubMed PMID: 30745742; PubMed Central PMCID: PMC6343396.

Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) has recently emerged as a minimally invasive and safe modality for the evaluation of mediastinal lymphadenopathy, particularly in staging of lung carcinoma patients. In high tuberculosis endemic countries, EBUS-TBNA is useful in obtaining tissue diagnosis of granulomatous inflammation. Role of EBUS-TBNA in workup of extrapulmonary malignancies is not widely described. Herein, a brief overview of importance of EBUS-TBNA in investigation of extrapulmonary lesions/malignancies is presented.

116: Jain M, Rojanaporn D, Chawla B, Sundar G, Gopal L, Khetan V. Retinoblastoma in Asia. *Eye (Lond).* 2019 Jan;33(1):87-96. doi: 10.1038/s41433-018-0244-7. Epub 2018 Nov 1. Review. PubMed PMID: 30385881; PubMed Central PMCID: PMC6328585.

Asia-Pacific region bears a significant global burden of retinoblastoma (RB), therefore understanding RB in Asia-Pacific region is important. Based on the year 2013 population estimates, 43% (3452 of 8099 children) of the global burden of RB lives in 6 countries of Asia-Pacific region: 1486 children in India, 1103 children in China, 277 children in Indonesia, 260 children in Pakistan, 184 children in Bangladesh, 142 children in Philippines. There exists a wide disparity, technological and socio-economical, within countries in this region resulting in a varied pattern of clinical presentation and survival varies. Challenges in developing nations are not just technological, but also social. Opportunities emerge for research to study and understand the socio-economical aspects of the disease to develop interventions that are relevant culturally and feasible economically. Possible steps include disease education and counselling, universal screening, highly subsidized/free of cost treatment for low socioeconomic strata, raising funds through the government and non-governmental organizations, sensitization and training of man-power in screening, diagnosis and treatment, and developing new specialized centers with tele-ophthalmology services.

117: Jain R, Quraishi R, Verma A, Ambekar A. Development and clinical evaluation of a dried urine spot method for detection of morphine among opioid users. *Indian J Pharmacol.* 2019 Jan-Feb;51(1):40-44. doi: 10.4103/ijp.IJP_305_18. PubMed PMID: 31031466; PubMed Central PMCID: PMC6444835.

BACKGROUND: In recent years, drug testing in body fluids has gained popularity for validating self-reported drug use. The storage and transportation of urine specimens is a major concern for remote areas where the facilities for performing drug abuse testing are lacking.

AIMS AND OBJECTIVES: The aim of the present study was to develop an efficient method for testing opiate in dried urine spots (DUS) and to evaluate its clinical applicability.

MATERIALS AND METHODS: The methodology involved optimization of conditions for extraction, recovery, short-, and long-term stability (room temperature, 4°C, -20°C) for detection of opiate from dried urine spots. Further, the extraction efficiency from dried urine spots was compared with the conventional drug testing methodology. The screening was done by using enzyme-linked immunosorbent assay technique, and confirmation was achieved by gas chromatography equipped with nitrogen phosphorus detector.

RESULTS: Deionized water was found to be a suitable extracting solvent compared to bi-carbonate buffer (pH 9.2) and saline. Primary screening was achieved by 2 punches taken from a 20- μ l (diameter 1.3 cm) spotted urine samples, whereas confirmation was achieved by 2 complete circles each of 20 μ l sample volume. The recovery was found to be 99.41% in water. No sign of significant degradation was seen among all storage conditions.

CONCLUSIONS: In the current study, DUS has achieved the same level of precision and reproducibility as that of standard methods used for drug testing in urine. Hence, the DUS sampling appears to have potential to detect opiate among drug users in a clinical setting.

118: Jain S, Ahuja V, Limdi JK. Optimal management of acute severe ulcerative colitis. *Postgrad Med J*. 2019 Jan;95(1119):32-40. doi: 10.1136/postgradmedj-2018-136072. Epub 2019 Jan 12. Review. PubMed PMID: 30636193.

Acute severe ulcerative colitis is a life-threatening medical emergency, which can be associated with significant morbidity and is preventable through prompt and effective management. Corticosteroids remain the cornerstone of initial therapy, although a third of patients will not respond. Further management hinges on timely decisions with use of rescue therapy with ciclosporin or infliximab, without compromising the health or safety of the patient, or timely surgery. Although such patients need specialist care, it is imperative that emergency care physicians are aware of the important principles of management of this condition to achieve successful outcomes. Risk stratification and the use of predictive models using clinical parameters have reduced the morbidity associated with this condition. We discuss current evidence and present a clinical approach to clinicians involved in the emergency care of patients with acute severe ulcerative colitis in this review.

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119: Jain V, Chaturvedi A, Pandia MP, Bithal PK. Effect of dexmedetomidine on recovery profile of patients undergoing anterior cervical discectomy and fusion. *J Anaesthesiol Clin Pharmacol*. 2019 Jan-Mar;35(1):92-98. doi: 10.4103/joacp.JOACP_5_18. PubMed PMID: 31057248; PubMed Central PMCID: PMC6495628.

Background and Aim: Smooth and rapid emergence and extubation, with minimal coughing, is desirable after cervical spine surgery to facilitate early neurological examination. The present study investigated the effect of dexmedetomidine as an intraoperative anesthetic adjuvant on postoperative extubation and recovery profile in patients undergoing anterior cervical discectomy and fusion (ACDF) surgery.

Material and Methods: Sixty-four, American Society of Anesthesiologist I or II adult patients (age 18-60 years) were randomized in this placebo-controlled, double-blind study. In group D, dexmedetomidine was started at 0.2 μ g/kg/h after a loading dose of 1 μ g/kg before induction and in group P, volume and infusion rate-matched normal saline was used. Perioperative hemodynamics, intraoperative anesthetic consumption, and postoperative recovery profile were observed.

Results: Thirty-one patients in each group successfully completed the study. Time to emergence (6.9 min vs 10 min, $P < 0.001$), time to extubation (8.5 min vs 12.2 min, $P = 0.002$), and time to achieve modified Aldrete score ≥ 9 (5 min vs 10 min, $P < 0.001$) were earlier in group D compared to group P, respectively. Pain score at extubation was lower (0 vs 20) and time for first analgesic was longer (50 min vs 15 min) in group D compared to group P. Coughing at extubation was comparable in both the groups. One patient in group D had severe postextubation bradycardia. **Conclusions:** Intraoperative use of dexmedetomidine at the lowest recommended dosage in adults undergoing ACDF surgery results in a favorable recovery profile with reduced emergence/extubation time and postoperative pain, but similar incidence of coughing.

120: Jat KR, Mathew JL. Continuous positive airway pressure (CPAP) for acute

bronchiolitis in children. *Cochrane Database Syst Rev.* 2019 Jan 31;1:CD010473. doi: 10.1002/14651858.CD010473.pub3. PubMed PMID: 30701528; PubMed Central PMCID: PMC6354031.

BACKGROUND: Acute bronchiolitis is one of the most frequent causes of emergency department visits and hospitalisation in children. There is no specific treatment for bronchiolitis except for supportive treatment, which includes ensuring adequate hydration and oxygen supplementation. Continuous positive airway pressure (CPAP) aims to widen the lungs' peripheral airways, enabling deflation of overdistended lungs in bronchiolitis. Increased airway pressure also prevents the collapse of poorly supported peripheral small airways during expiration. Observational studies report that CPAP is beneficial for children with acute bronchiolitis. This is an update of a review first published in 2015.

OBJECTIVES: To assess the efficacy and safety of CPAP compared to no CPAP or sham CPAP in infants and children up to three years of age with acute bronchiolitis.

SEARCH METHODS: We conducted searches of CENTRAL (2017, Issue 12), which includes the Cochrane Acute Respiratory Infections Group's Specialised Register, MEDLINE (1946 to December, 2017), Embase (1974 to December 2017), CINAHL (1981 to December 2017), and LILACS (1982 to December 2017) in January 2018.

SELECTION CRITERIA: We considered randomised controlled trials (RCTs), quasi-RCTs, cross-over RCTs, and cluster-RCTs evaluating the effect of CPAP in children with acute bronchiolitis.

DATA COLLECTION AND ANALYSIS: Two review authors independently assessed study eligibility, extracted data using a structured pro forma, analysed data, and performed meta-analyses.

MAIN RESULTS: We included three studies with a total of 122 children (62/60 in intervention/control arms) aged up to 12 months that investigated nasal CPAP compared with supportive (or "standard") therapy. We included one new trial (72 children) that contributed data to the assessment of respiratory rate and need for mechanical ventilation for this update. The included studies were single-centre trials conducted in France, the UK, and India. Two studies were parallel-group RCTs and one was a cross-over RCT. The evidence provided by the included studies was low quality; we assessed high risk of bias for blinding, incomplete outcome data, and selective reporting, and confidence intervals were wide. The effect of CPAP on the need for mechanical ventilation in children with acute bronchiolitis was uncertain due to imprecision around the effect estimate (3 RCTs, 122 children; risk ratio (RR) 0.69, 95% confidence interval (CI) 0.14 to 3.36; low-quality evidence). None of the trials measured time to recovery. Limited, low-quality evidence indicated that CPAP decreased respiratory rate (2 RCTs, 91 children; mean difference (MD) -3.81, 95% CI -5.78 to -1.84). Only one trial measured change in arterial oxygen saturation, and the results were imprecise (19 children; MD -1.70%, 95% CI -3.76 to 0.36). The effect of CPAP on change in arterial partial carbon dioxide pressure (pCO₂) was imprecise (2 RCTs, 50 children; MD -2.62 mmHg, 95% CI -5.29 to 0.05; low-quality evidence). Duration of hospital stay was similar in both CPAP and supportive care groups (2 RCTs, 50 children; MD 0.07 days, 95% CI -0.36 to 0.50; low-quality evidence). Two studies did not report about pneumothorax, but pneumothorax did not occur in one study. No studies reported occurrences of deaths. Several outcomes (change in partial oxygen pressure, hospital admission rate (from emergency department to hospital), duration of emergency department stay, and need for intensive care unit admission) were not reported in the included studies.

AUTHORS' CONCLUSIONS: Limited, low-quality evidence suggests that breathing improved (a decreased respiratory rate) in children with bronchiolitis who received CPAP; this finding is unchanged from the 2015 review. Further evidence for this outcome was provided by the inclusion of a low-quality study for the 2018 update. Due to the limited available evidence, the effect of CPAP in children with acute bronchiolitis is uncertain for other outcomes. Larger, adequately powered trials are needed to evaluate the effect of CPAP for children with acute bronchiolitis.

121: Jha V, Ur-Rashid H, Agarwal SK, Akhtar SF, Kafle RK, Sheriff R; ISN South Asia Regional Board. The state of nephrology in South Asia. *Kidney Int.* 2019 Jan;95(1):31-37. doi: 10.1016/j.kint.2018.09.001. Epub 2018 Oct 26. PubMed PMID: 30612598.

122: Joshi D, Katyal J, Arava S, Gupta YK. Effects of enalapril and losartan alone and in combination with sodium valproate on seizures, memory, and cardiac changes in rats. *Epilepsy Behav.* 2019 Mar;92:345-352. doi: 10.1016/j.yebeh.2018.12.019. Epub 2019 Jan 16. PubMed PMID: 30658894.

PURPOSE: Cardiac changes accompanying seizures may be responsible for sudden unexpected death in epilepsy (SUDEP), and drugs with antiseizure and favorable cardiovascular profile could be beneficial. The effect of losartan and enalapril alone and in combination with sodium valproate on seizures, cognition, cardiac histopathology, and serum brain-derived neurotrophic factor (BDNF) levels were determined.

METHODS: Male "Wistar" rats (200-250 g) were administered enalapril (20 mg/kg, intraperitoneally (i.p.)) and losartan (10 mg/kg, i.p.) daily and simultaneously subjected to pentylenetetrazole (PTZ)-kindling (PTZ 30 mg/kg, i.p., every alternate day). Enalapril and losartan were injected 45 & 120 min before seizure stimuli. In another set of experiments, sodium valproate (150 mg/kg, i.p.) alone or in combination with enalapril (20 mg/kg, i.p.) and losartan (10 mg/kg, i.p.) were administered daily during induction of kindling. The effect on seizures and behavior were noted; rats were sacrificed, and blood and hearts were collected for further analysis, i.e., BDNF levels, heart weight-body weight (HWBW) ratio, and cardiac histopathology.

RESULTS: Losartan, but not enalapril, suppressed the seizure score in PTZ kindling. Sodium valproate alone or in combination with losartan or enalapril prevented kindled seizures. Sodium valproate per se caused cognitive impairment, which was prevented on combining with losartan or enalapril. A decrease in HWBW ratio was observed only in enalapril group (p value=0.02). Kindling led to cardiac ischemic changes, which could be prevented by losartan and sodium valproate. Serum BDNF level was decreased in PTZ (p value=0.02) and sodium valproate per se group (p value=0.04), but sodium valproate could reverse the PTZ-induced decrease in serum BDNF level.

CONCLUSION: The use of losartan with sodium valproate in epilepsy may prevent the cognitive and cardiac sequelae of seizures. The BDNF levels as a marker for cardiovascular risk in persons with epilepsy (PWE) needs to be explored further.

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123: Joshiraj B, Sharma A, Subramaniam R, Vyas V. Perioperative management of patient with Conn's syndrome and severe hypokalaemia: How low is too low? *Indian J Anaesth.* 2019 Jan;63(1):67-68. doi: 10.4103/ija.IJA_562_18. PubMed PMID: 30745619; PubMed Central PMCID: PMC6341878.

124: Kakkar A, Sakthivel P, Rajeshwari M, Kairo A, Sharma MC. Recurrent Sinonasal CD34-Negative Malignant Solitary Fibrous Tumor Diagnosed on STAT6 Immunohistochemistry and NAB2-STAT6 Fusion. *Head Neck Pathol.* 2019 Jan 8. doi: 10.1007/s12105-018-00999-8. [Epub ahead of print] PubMed PMID: 30623305.

A spectrum of mesenchymal neoplasms occur in the sinonasal region. One of these is solitary fibrous tumor (SFT), a translocation-associated neoplasm characterized by NAB2-STAT6 gene fusion. Sinonasal SFTs characteristically display CD34 immunopositivity, which aids in diagnosis. However, a small proportion of SFTs may be negative for CD34, making diagnosis difficult. The availability of STAT6 immunohistochemistry (IHC) has helped to overcome this. Malignant SFTs, characterized by increased cellularity and mitoses >4 per ten high power fields, are extremely unusual in the sinonasal region, with only ten such cases reported to date. We report a case of a CD34-negative malignant SFT that was diagnosed using STAT6 IHC and confirmed by demonstrating NAB2 ex 4-STAT6 ex 2 fusion, and recurred 8 months after complete excision, to highlight the aggressive nature of this tumor.

125: Kakkar A, Antony VM, Pramanik R, Sakthivel P, Singh CA, Jain D. SMARCB1

(INI1)-deficient sinonasal carcinoma: a series of 13 cases with assessment of histologic patterns. *Hum Pathol.* 2019 Jan;83:59-67. doi: 10.1016/j.humpath.2018.08.008. Epub 2018 Aug 16. PubMed PMID: 30120966.

A significant proportion of sinonasal malignancies comprise poorly differentiated/undifferentiated carcinomas that defy accurate histologic classification and behave aggressively. Recent years have seen a refinement of this spectrum by inclusion of novel entities harboring specific genetic alterations, including SMARCB1 (INI1)-deficient sinonasal carcinoma (SDSC), characterized by inactivating alterations in SMARCB1 gene, as demonstrated by loss of INI1 immunoreexpression. Cyclin D1 is a cell-cycle regulatory protein downstream of INI1. Loss of INI1 leads to derepression of cyclin D1 transcription, suggesting its role as a putative therapeutic target. However, cyclin D1 expression has not been assessed in SDSCs. We retrieved all sinonasal carcinomas, including sinonasal undifferentiated carcinoma, undifferentiated carcinoma, poorly differentiated squamous cell carcinoma, and adenocarcinoma. Histopathologic features were reviewed. INI1 immunohistochemistry was performed. Cyclin D1 was performed in cases showing INI1 loss. Loss of INI1 staining was seen in 13 cases (5.8%), including 11 males and 2 females (age range, 11-65 years). Original diagnoses included SDSC (3/13), sinonasal undifferentiated carcinoma (3/13), adenocarcinoma (3/13), poorly differentiated squamous cell carcinoma (2/13), and poorly differentiated carcinoma (2/13). Tumors were predominantly basaloid in 6 cases and plasmacytoid/rhabdoid in 5 cases. We identified 2 cases having oncocytoic cells arranged in a gland-like pattern. Significant cyclin D1 immunoreexpression was absent. SDSC is a rare, emerging entity that resembles a poorly differentiated carcinoma. Histomorphologic spectrum of these tumors is evolving. In addition to basaloid and plasmacytoid/rhabdoid cells, oncocytoic/adenocarcinoma-like pattern can also be seen in SDSC and predicts INI1 loss. These histologic patterns can further be subjected to INI1 immunohistochemistry for correct diagnosis.

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126: Kalsi AK, Halder A, Jain M, Chaturvedi PK, Mathew M, Sharma JB. Association of raised levels of IL-4 and anti-TPO with hyperprolactinemia. *Am J Reprod Immunol.* 2019 Mar;81(3):e13085. doi: 10.1111/aji.13085. Epub 2019 Jan 30. PubMed PMID: 30614113.

BACKGROUND AND OBJECTIVE: The modulatory role of prolactin in autoimmune regulation is well established. Hyperprolactinemia is often associated with autoimmune disease like systemic lupus erythematosus and autoimmune thyroid diseases. The objective was to compare levels of direct and indirect autoimmune factors in different categories of hyperprolactinemia cases and predict the direction of association between hyperprolactinemia and autoimmune factors, if any.

METHODS: A total of 102 hyperprolactinemia cases (>100 ng/mL serum prolactin level) were included along with 24 controls. Among 102 hyperprolactinemia cases, there were 36 idiopathic cases, 19 pituitary adenoma cases, 36 drug-induced cases, and 11 cases associated with other secondary/systemic diseases (chronic renal failure, chronic hepatic failure, etc).

MEASUREMENTS: Direct autoimmune markers, IL-2, IFN- γ , IL-4, and IL-5, were measured in serum by ELISA. Indirect autoimmune markers, anti-TPO, anti-tg, anti-CCP, VDRL, platelet count, and aPTT, were measured as per laboratory-defined protocol.

RESULTS: Serum levels of IL-4 and anti-TPO were significantly high in idiopathic hyperprolactinemia cases. Serum IL-4 levels were also significantly high in pituitary adenoma cases, drug-induced cases, and in cases with other secondary causes of hyperprolactinemia. Serum anti-TPO levels were also significantly high in drug-induced hyperprolactinemia cases.

CONCLUSION: No significant difference in autoimmune factors is observed between macroprolactinemia and true hyperprolactinemia. Serum IL-4 and anti-TPO were high in all categories of hyperprolactinemia. This suggests a possible association of hyperprolactinemia with autoimmune conditions (high IL-4 and anti-TPO), mostly subclinical. Thus, hyperprolactinemia case with serum prolactin level >100 ng/mL

may require long-term follow-up for the development of autoimmune disease in future.

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127: Kamat N, Kedia S, Ghoshal UC, Nehra A, Makharia G, Sood A, Midha V, Gupta V, Choudhuri G, Ahuja V. Effectiveness and safety of adalimumab biosimilar in inflammatory bowel disease: A multicenter study. *Indian J Gastroenterol*. 2019 Feb;38(1):44-54. doi: 10.1007/s12664-018-0922-1. Epub 2019 Jan 15. PubMed PMID: 30645725.

BACKGROUND: Adalimumab has emerged as a useful drug for treating patients with Crohn's disease (CD) and ulcerative colitis (UC), not responding to conventional therapy. There is limited data on effectiveness and safety of adalimumab biosimilar in patients with inflammatory bowel disease (IBD).

METHODS: Patients with IBD who received at least one dose of adalimumab biosimilar from October 2015 to February 2018 were retrospectively included in this multicenter data analysis. Its effectiveness in inducing and maintaining clinical remission at 8, 26, and 52 weeks for CD and UC and safety profile of the drug was studied.

RESULTS: Seventy patients (49 CD; 21 UC) with a median age of 39 (range 13-73) years, male predominance (64.3%), and median (IQR) disease duration of 72 (33-104) months were included. Adalimumab biosimilar was effective in inducing remission (at 8 weeks) in 46.9% and 52.4% patients with CD and UC, respectively, of whom 32.7% and 33.3% (three fourths of remitters) maintained remission over 1 year, respectively. Twenty (28.6%) patients experienced adverse events; seven (10%) were serious of whom three had developed tuberculosis.

CONCLUSIONS: Adalimumab biosimilar in usual clinical practice is safe and effective in inducing and maintaining remission in Indian patients with IBD. Steroid-free clinical remission was observed in one third of patients with UC and CD at 1 year of therapy. Graphical Abstract.

128: Kapoor D, Gupta Y, Desai A, Praveen D, Joshi R, Rozati R, Bhatla N, Prabhakaran D, Reddy P, Patel A, Tandon N. Lifestyle intervention programme for Indian women with history of gestational diabetes mellitus. *Glob Health Epidemiol Genom*. 2019 Mar 11;4:e1. doi: 10.1017/gheg.2018.18. eCollection 2019. PubMed PMID: 30891248; PubMed Central PMCID: PMC6415123.

Aim: To evaluate the feasibility and potential effectiveness of a lifestyle intervention (diet and physical activity) among women with history of gestational diabetes mellitus (GDM), delivered by trained facilitators.

Methods: Fifty-six normoglycaemic or prediabetic women with prior GDM were recruited at mean of 17 months postpartum. Socio-demographic, medical and anthropometric data were collected. Six sessions on lifestyle modification were delivered in groups (total four groups, with 12-15 women in each group). Pre and post intervention (6 months) weight, body mass index (BMI), waist circumference, 75 g oral glucose tolerance test, blood pressure (BP) and lipid parameters were compared.

Results: The intervention was feasible, with 80% of women attending four or more sessions. Post-intervention analyses showed a significant mean reduction of 1.8 kg in weight, 0.6 kg/m² in BMI and 2 cm in waist circumference. There was also a significant drop of 0.3 mmol/L in fasting plasma glucose, 0.9 mmol/L in 2 h post glucose load value of plasma glucose, 3.6 mmHg in systolic BP, and 0.15 mmol/L in triglyceride levels. Changes in total cholesterol, low-density lipoprotein-cholesterol, high-density lipoprotein-cholesterol and diastolic BP were non-significant.

Conclusions: This study showed feasibility of the lifestyle intervention delivered in group sessions to women with prior gestational diabetes.

129: Kar SK, Singh A, Garg K, Gupta B. Source of information about mental illness among medical students in a tertiary care centre of North India. *Asian J Psychiatr*. 2019 Jan;39:101-103. doi: 10.1016/j.ajp.2018.12.013. Epub 2018 Dec 23. PubMed PMID: 30599449.

130: Kaur AP, Saxena N, Chandra NC. Differential response of T cells to an immunogen, a mitogen and a chemical carcinogen in a mouse model system. *J Biochem Mol Toxicol*. 2019 May;33(5):e22290. doi: 10.1002/jbt.22290. Epub 2019 Jan 21. PubMed PMID: 30664314.

In this study, we examined the relative immune response of T-lymphocytes and its intracellular cholesterol homeostasis, in a mouse model system, after treatment with immunogen, mitogen, and carcinogen. We studied the T-lymphocyte percentage, their LDL-receptor expression, along with the levels of serum interleukins (IL-2, IFN γ , IL-4, and IL-10) and intracellular cholesterol concentration (cytoplasmic and nuclear). The mitogen was found to be a better stimulator of T-cell marker expressions than the immunogen; though the immunogen was more effective on immunogenic response as was marked from interleukin levels. The chemical carcinogen benzo- α -pyrene at low concentration acted potentially like a mitogen but a reduced immune response was apparent at a carcinogenic dose. The findings in our study focus on the effect of carcinogenic dose of benzo- α -pyrene (BaP) on T-cell immunity. Benzo- α -pyrene causes immunosuppression through restriction of the T-cell population by targeting intracellular cholesterol.

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131: Kaur G, Gupta R, Mathur N, Rani L, Kumar L, Sharma A, Singh V, Gupta A, Sharma OD. Clinical impact of chromothriptic complex chromosomal rearrangements in newly diagnosed multiple myeloma. *Leuk Res*. 2019 Jan;76:58-64. doi: 10.1016/j.leukres.2018.12.005. Epub 2018 Dec 15. PubMed PMID: 30576858.

Complex Chromosomal Rearrangements (CCRs) are increasingly being reported as genetic risk factors of clinical significance in cancer owing to their identification using high resolution whole genome profiling technologies. This study employed high resolution CGH+SNP microarrays for whole genome copy number variations (CNV) profiling and identified CCRs in 11/107(10%) newly diagnosed Multiple Myeloma (MM) patients. Six patients exhibited Chromothripsis (CTH) among seven chromosomes that were confirmed with automated CTLPscanner web tool and; five cases displayed chromoplexy (CPL) which involved multiple chromosomes. Presence of chromothripsis in chromosome 17 in three out of six patients indicate a link between TP53 aberrations and incidence of CTH. Multivariable Cox regression model demonstrated a significant association of CTH with poor PFS (HR=3.09, p=0.010) and OS (HR=3.31, p=0.024) which suggests that CTH is an additional independent prognostic marker in multiple myeloma. Addition of CTH in risk stratification models in clinical setting in multiple myeloma may help in upfront identification of high risk patients for suitable customized therapy.

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132: Kaur I, Kaur J, Sooraj K, Goswami S, Saxena R, Chauhan VS, Sihota R. Comparative evaluation of the aqueous humor proteome of primary angle closure and primary open angle glaucomas and age-related cataract eyes. *Int Ophthalmol*. 2019 Jan;39(1):69-104. doi: 10.1007/s10792-017-0791-0. Epub 2018 Jan 13. PubMed PMID: 29332228.

PURPOSE: To analyze and compare the total proteome of aqueous humor (AH) from patients having primary angle closure glaucoma (PACG), primary open angle glaucoma (POAG) and age-related cataract.

MATERIALS AND METHODOLOGY: Aqueous humor was collected from age-matched PACG, POAG and cataract patients who underwent surgery, and it was immediately stored at - 80 °C until analysis. From each sample, 25 μ g of total protein was subjected to trypsin digestion and subsequently LC-MS/MS analysis was performed for the deep proteome analysis. The data acquired after the LC-MS/MS analysis were analyzed using Proteome Discoverer 1.4. The identified peptide matches were validated using percolator, at less than 1% false discovery rates.

RESULTS: A total of 625, 594 and 636 proteins were identified in PACG, POAG and cataract groups, respectively (n = 9 in each group). The inter-group comparison among all these groups showed that 246 proteins were identified in all the three

groups. An average of 236 ± 42 , 218 ± 40 and 214 ± 62 proteins from each AH sample of PACG, POAG and cataract, respectively, was identified. There were 53 proteins commonly found in all 9 PACG AH, 59 proteins in POAG AH and 42 proteins in 9 cataracts AH samples. In the individual analysis, there were 28 proteins found in all the samples analyzed representing the "constitutive AH proteome." Spectral counting analysis of 246 proteins identified in all three group types showed significant differences in protein abundance. In proteins unique to PACG AH, 7 proteins viz. ARHGEF12, APC2, WAS, PIK3CG, ITGB1, MSN and PFN1 out of 226 were found in "Regulation of Actin Cytoskeleton" pathway, whereas in POAG 5 out of 206 proteins viz. ADCY2, ITPR1, MAPK3, MAP3K2 and TUBB1 were found in "Gap Junction" pathway.

CONCLUSIONS: A qualitative as well as a quantitative comparison of proteomes of AH from PACG, POAG and age-related cataract eyes showed significant differences, thus providing clues to the disease pathophysiology.

133: Kaur M, Yadav A. Anaesthetic implications of Rubinstein-Taybi syndrome. *J Clin Anesth.* 2019 Sep;56:43-44. doi: 10.1016/j.jclinane.2018.12.056. Epub 2019 Jan 23. PubMed PMID: 30684926.

134: Kaur M. Intraoperative neural monitoring in head and neck surgeries: Feasibility and concerns. *J Anaesthesiol Clin Pharmacol.* 2019 Jan-Mar;35(1):131. doi: 10.4103/joacp.JOACP_301_18. PubMed PMID: 31057256; PubMed Central PMCID: PMC6495617.

135: Kaushal A, Bindra A, Kumar A, Goyal K, Kumar N, Rath GP, Gupta D. Long Term Outcome in Survivors of Decompressive Craniectomy following Severe Traumatic Brain Injury. *Asian J Neurosurg.* 2019 Jan-Mar;14(1):52-57. doi: 10.4103/ajns.AJNS_147_17. PubMed PMID: 30937008; PubMed Central PMCID: PMC6417309.

Background: Decompressive craniectomy (DC) is done for the management of intracranial hypertension due to severe traumatic brain injury (sTBI). Despite DC, a number of patients die and others suffer from severe neurological disability. We conducted this observational study to assess functional outcome as measured by Glasgow outcome scale-extended (GOSE) in survivors of DC. The correlation between various factors at admission and hospital with functional outcome was also obtained.

Materials and Methods: Patients (15-65 years) posted for cranioplasty following DC due to sTBI were prospectively enrolled. Demographic profile, clinical data, and GOSE were noted at the time of admission for cranioplasty from the patient or nearest relative or both. Retrospective data noted from hospital records included admission Marshalls grading, Glasgow coma score (GCS), motor response, mean arterial pressure (MAP), and timing of DC at the time of initial admission following sTBI.

Results: A total of 85 patients (71 males and 14 females) were enrolled over a period of 2 years. The mean age of the patients was 33.42 ± 12.70 years. The median GCS at the time of admission due to head injury, at the time of discharge, and at the time of cranioplasty was 8 (interquartile range [IQR] 3-15), 10 (IQR 4-15), and 15 (IQR 7-15), respectively. Thirty-one patients (36%) had good functional outcome (GOSE 5-8) and 54 patients (64%) had poor functional outcome (GOSE 1-4). On univariate analysis tracheostomy ($P = 0.00$), duration of hospital stay ($P = 0.002$), MAP at admission ($P = 0.01$), and GCS at discharge ($P = 0.01$) correlated with outcome [Table 1]. On multivariate analysis MAP at admission (odds ratio [OR] [95% confidence interval {CI}]; 0.07 [0.01-0.40] and tracheostomy (OR [95% CI]; 15 [1.45-162.9]) were found to be the independent predictors of functional outcome.

Conclusion: Significant disability is seen among the survivors of DC. Tracheostomy and MAP at admission were found to be independently associated with the patient outcome.

136: Kedia S, Das P, Madhusudhan KS, Dattagupta S, Sharma R, Sahni P, Makharia G, Ahuja V. Differentiating Crohn's disease from intestinal tuberculosis. *World J*

Gastroenterol. 2019 Jan 28;25(4):418-432. doi: 10.3748/wjg.v25.i4.418. Review. PubMed PMID: 30700939; PubMed Central PMCID: PMC6350172.

Differentiating Crohn's disease (CD) and intestinal tuberculosis (ITB) has remained a dilemma for most of the clinicians in the developing world, which are endemic for ITB, and where the disease burden of inflammatory bowel disease is on the rise. Although, there are certain clinical (diarrhea/hematochezia/perianal disease common in CD; fever/night sweats common in ITB), endoscopic (longitudinal/aphthous ulcers common in CD; transverse ulcers/patulous ileocaecal valve common in ITB), histologic (caseating/confluent/large granuloma common in ITB; microgranuloma common in CD), microbiologic (positive stain/culture for acid fast-bacillus in ITB), radiologic (long segment involvement/comb sign/skip lesions common in CD; necrotic lymph node/contiguous ileocaecal involvement common in ITB), and serologic differences between CD and ITB, the only exclusive features are caseation necrosis on biopsy, positive smear for acid-fast bacillus (AFB) and/or AFB culture, and necrotic lymph node on cross-sectional imaging in ITB. However, these exclusive features are limited by poor sensitivity, and this has led to the development of multiple multi-parametric predictive models. These models are also limited by complex formulae, small sample size and lack of validation across other populations. Several new parameters have come up including the latest Bayesian meta-analysis, enumeration of peripheral blood T-regulatory cells, and updated computed tomography based predictive score. However, therapeutic anti-tubercular therapy (ATT) trial, and subsequent clinical and endoscopic response to ATT is still required in a significant proportion of patients to establish the diagnosis. Therapeutic ATT trial is associated with a delay in the diagnosis of CD, and there is a need for better modalities for improved differentiation and reduction in the need for ATT trial.

137: Khan MFJ, Little J, Nag TC, Mossey PA, Autelitano L, Meazzini MC, Merajuddin A, Singh A, Rubini M. Ultrastructural analysis of collagen fibril diameter distribution in cleft lip. *Oral Dis.* 2019 Jan;25(1):206-214. doi: 10.1111/odi.12962. Epub 2018 Sep 25. PubMed PMID: 30144227.

OBJECTIVE: A preliminary study to determine collagen fibril diameter (CF-ED) distribution on medial and lateral sides of cleft lip (CL).

MATERIAL AND METHODS: Tissue samples from medial and lateral sides of CL were fixed in 2.5% glutaraldehyde and 1% osmium tetroxide and embedded in Araldite CY212 resin for transmission electron microscopy. The analysis of CF-ED was performed using the ImageJ program. To characterize the packaging of collagen fibrils (CFs) in the two tissues, we estimated the collagen number density (CF-ND) and fibril-area-fraction (FAF). Differences in measurements across the two sides were calculated using Wilcoxon signed-rank test.

RESULTS: The CF-ED was statistically significantly ($p < 0.001$) smaller on the medial side (45.69 ± 7.89 nm) than on the lateral side (54.18 ± 7.62 nm). The medial side had a higher CF-ND and a higher percentage of FAF than the lateral side.

CONCLUSION: Our finding of a smaller CF-ED and higher CF-ND and FAF for the medial side suggests possible differences in size and distribution of CFs between medial and lateral sides of CL. This finding provides knowledge toward underlying tissue biomechanics that may help reconstruction of perioral tissue scaffolds, ultimately resulting in better treatment of patients with oral clefts.

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138: Khan NH, Kohli M, Gupta K, Das BK, Pandey RM, Sinha S. HIV Drug Resistance Mutations in Patients with HIV and HIV-TB Coinfection After Failure of First-Line Therapy: A Prevalence Study in a Resource-Limited Setting. *J Int Assoc Provid AIDS Care.* 2019 Jan-Dec;18:2325958219849061. doi: 10.1177/2325958219849061. PubMed PMID: 31117863.

INTRODUCTION: The present study aimed to report the prevalent HIV-1 drug-resistant mutations in patients with HIV-1 alone and tuberculosis (TB) coinfection alone to improve our understanding of the mutation patterns and aid

treatment decisions.

METHODS: Patients with HIV-1 and HIV-TB on treatment for more than 1 year with suspected failure were recruited. Sequencing of protease and two-thirds of the region of reverse transcriptase gene was done for drug-resistant mutations.

RESULTS: In the HIV-TB group (n = 25), 88%, 92%, and 12% had mutations to nucleoside reverse transcriptase inhibitors (NRTIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs), and protease inhibitors (PIs), respectively. In the HIV-alone group (n = 25), 84%, 100%, and 4% had mutations to NRTIs, NNRTIs, and PIs, respectively. M184V, M41L, D67N, G190A, A98G, and K103N were the most common mutations seen.

CONCLUSION: There is a high prevalence of drug-resistant mutations in HIV and HIV-TB coinfecting patients.

139: Khandelwal A, Lamsal R, Rath GP, Netam RK, Bir M. Motor-evoked potential monitoring: A valuable tool for the diagnosis of position-related neurologic deficits. *Saudi J Anaesth.* 2019 Jan-Mar;13(1):88-89. doi: 10.4103/sja.SJA_710_18. PubMed PMID: 30692901; PubMed Central PMCID: PMC6329252.

140: Khandelwal A, Debbarman S, Rath GP, Lamsal R. Sedation induced by antiepileptic drugs polytherapy: A note of caution during anesthesia. *Saudi J Anaesth.* 2019 Jan-Mar;13(1):86-87. doi: 10.4103/sja.SJA_711_18. PubMed PMID: 30692900; PubMed Central PMCID: PMC6329230.

141: Khandelwal A, Sokhal N, Kumar N, Singh S, Sokhal S. Phenytoin-induced Excessive Sedation During Awake Craniotomy: An Unusual Observation. *J Neurosurg Anesthesiol.* 2019 Jan;31(1):87-88. doi: 10.1097/ANA.0000000000000475. PubMed PMID: 29135699.

142: Khosla R, Vyas AK, Trehanpati N. Dichotomy of Notch signalling in regulating tumour immune surveillance. *Scand J Immunol.* 2019 Mar;89(3):e12744. doi: 10.1111/sji.12744. Epub 2019 Jan 15. Review. PubMed PMID: 30548971.

Notch signalling is an evolutionarily conserved multifaceted pathway that controls diverse cellular processes. Its role in regulating development and tissue homeostasis is well established. Aberrant activation of the Notch pathway has been implicated in the initiation and progression of many types of cancers. However, although in some cancers Notch signalling acts as a tumour-promoter, in others it is reported to suppress tumour growth and progression. Accumulating evidence suggests the involvement of both the innate and adaptive immune system in the development of various tumours. Currently, extensive studies on investigating the effects of Notch signalling in tumour immune surveillance are being carried out. Interestingly, recent literature shows how the changing expression of Notch genes in different T cell subsets like CD4 and CD8 helps in controlling anti-tumour immune responses. In this review, we discuss in depth the roles of Notch signalling molecules and different immune cells in the context of the tumour microenvironment. We also outline how current knowledge can be exploited to develop novel therapies in order to control the propagation of cancer stem cells.

© 2018 The Foundation for the Scandinavian Journal of Immunology.

143: Khurana C, Tandon S, Chand S, Chinmaya BR. Effectiveness of oral health education program using braille text in a group of visually impaired children-before and after comparison trial. *J Educ Health Promot.* 2019 Mar 14;8:50. doi: 10.4103/jehp.jehp_233_18. eCollection 2019. PubMed PMID: 31008117; PubMed Central PMCID: PMC6442267.

CONTEXT: Vision is the most important sense for interpreting the world and when sight is impaired, especially in childhood it can have detrimental effects on one's life. To maintain the oral health status of such group requires special approach.

AIM: The aim of this study is to evaluate the impact of Braille text and verbal, oral hygiene instructions on the oral health status of visually impaired children.

SETTINGS AND DESIGN: A prospective nonrandomized before and after comparison trial without any control group was conducted among 165 children aged 7-19 years residing in one of the blind schools in Delhi.

MATERIALS AND METHODS: A questionnaire was developed to record the source of oral health knowledge and practices. Oral health status of the children was evaluated by recording plaque index (PI) and gingival index (GI) scores at 1, 3, and 5 months intervals. Periodic reinforcement of oral health education was performed with the help of instructions in Braille language.

STATISTICAL ANALYSIS: Paired t-test and McNemar tests were used to assess the difference between the scores before and after oral health education.

RESULTS: Among completely blind children, the mean difference of PI and GI score from baseline to the last evaluation was found to be 0.56 and 0.28, whereas among partially blind children, it was found to be 0.58 and 0.25, respectively. All the above values were statistically significant ($P < 0.001$).

CONCLUSION: Visually impaired children irrespective of the degree of blindness could maintain an acceptable level of oral hygiene when taught using Braille text for instructions. However, continuous motivation and reinforcement at regular intervals are required for the maintenance of oral health status.

144: Kumar A, Kumawat D, Sundar M D, Gagrani M, Gupta B, Roop P, Hasan N, Sharma A, Chawla R. Polypoidal choroidal vasculopathy: a comprehensive clinical update. *Ther Adv Ophthalmol*. 2019 Feb 27;11:2515841419831152. doi: 10.1177/2515841419831152. eCollection 2019 Jan-Dec. Review. PubMed PMID: 30834360; PubMed Central PMCID: PMC6393826.

Polypoidal choroidal vasculopathy as a disease is yet to be comprehended completely. The clinical features consisting of huge serosanguineous retinal pigment epithelial and neurosensory layer detachments, although unique may closely mimick neovascular age-related macular degeneration and other counterparts. The investigative modalities starting from indocyanine angiography to optical coherence tomography angiography provide diagnostic challenges. The management strategies based on the available therapies are plenty and not vivid. A detailed review with clarifying images has been compiled with an aim to help the readers in getting a better understanding of the disease.

145: Kumar N, Mehra NK, Kanga U, Kaur G, Tandon N, Chuzho N, Mishra G, Neolia SC. Diverse human leukocyte antigen association of type 1 diabetes in north India. *J Diabetes*. 2019 Jan 7. doi: 10.1111/1753-0407.12898. [Epub ahead of print] PubMed PMID: 30614662.

BACKGROUND: Type 1 diabetes (T1D) is a complex disease, with involvement of various susceptibility genes. Human leukocyte antigen (HLA) on chromosome 6p21 is major susceptibility region. This study examined genetic association of HLA genes with T1D.

METHODS: The study recruited 259 T1D patients and 706 controls from north India. PCR-SSP and LiPA were used to type HLA Class I and II alleles.

RESULTS: At HLA Class I locus, HLA-A*02, A*26, B*08 and B*50 were significantly increased in patients vs controls (39.8% vs 28.9% [Bonferroni-corrected P { P_c } = 0.032], 24.7% vs 9.6% [$P_c = 4.83 \times 10^{-8}$], 37.2% vs 15.7% [$P_c = 1.92 \times 10^{-9}$], and 19.4% vs 5.5% [$P_c = 4.62 \times 10^{-9}$], respectively). Similarly, in Class II region, DRB1*03 showed a strong positive association with T1D (78.7% vs 17.5% in controls; $P = 1.02 \times 10^{-9}$). Association of DRB1*04 with T1D (28.3% vs 15.5% in controls; $P_c = 3.86 \times 10^{-4}$) was not independent of DRB1*03. Negative associations were found between T1D and DRB1*07, *11, *13, and *15 (13.8% vs 26.1% in controls [$P_c = 0.00175$], 3.9% vs 16.9% in controls [$P_c = 6.55 \times 10^{-6}$], 5.5% vs 21.6% in controls [$P_c = 2.51 \times 10^{-7}$], and 16.9% vs 43.9% in controls [$P_c = 9.94 \times 10^{-10}$], respectively). Compared with controls, patients had significantly higher haplotype frequencies of A*26-B*08-DRB1*03-DQA1*05-DQB1*02 (10.43% vs 1.96%; $P = 7.62 \times 10^{-11}$), A*02-B*50-DRB1*03-DQA1*05-DQB1*02 (6.1% vs 0.71%; $P = 2.19 \times 10^{-10}$), A*24-B*08-DRB1*03-DQA1*05-DQB1*02 (4.72% vs 0.8%;

$P=5.4 \times 10^{-7}$), A*02-B*08-DRB1*03-DQA1*05-DQB1*02 (2.36% vs 0.18%;
 $P=3.6 \times 10^{-5}$), and A*33-B*58-DRB1*03-DQA1*05-DQB1*02 (4.33% vs 1.25%;
 $P=0.00019$).

CONCLUSIONS: In north India, T1D is independently associated only with HLA-DRB1*03 haplotypes, and is negatively associated with DRB1*07, *11, *13, and *15.

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146: Kumar N, Mukhopadhyay A. Using ChIP-Based Approaches to Characterize FOXO Recruitment to its Target Promoters. *Methods Mol Biol.* 2019;1890:115-130. doi: 10.1007/978-1-4939-8900-3_10. PubMed PMID: 30414149.

Chromatin immunoprecipitation (ChIP) coupled to quantitative real-time PCR (ChIP-qPCR) or Next-Generation Sequencing (ChIP-seq) enables us to study the dynamics of chromatin recruitment of transcription factors (TFs). The popular model system *Caenorhabditis elegans* has provided us with fundamental understanding of the role of Insulin/IGF-1-like signaling (IIS) in metabolism and aging. The FOXO TF DAF-16 is the major output of the pathway that regulates most of the phenotypes associated with the IIS pathway. Here, we describe a ChIP protocol to study FOXO recruitment dynamics in whole *C. elegans* extracts. We discuss detailed practical procedures, including optimization, growth, harvesting, formaldehyde fixation, sonication of worms, TF immunoprecipitation for further downstream processing using qPCR as well as NGS for the analysis of FOXO-bound DNA.

147: Kumar P, Misra P, Yadav NK, Joshi S, Sahasrabudde AA, Dube A, Rishi N, Mitra DK. Prophylactic interferon- $\hat{1}^3$ and interleukin-17 facilitate parasite clearance in experimental visceral leishmaniasis. *Trop Parasitol.* 2019 Jan-Jun;9(1):30-35. doi: 10.4103/tp.TP_32_18. Epub 2019 May 22. PubMed PMID: 31161090; PubMed Central PMCID: PMC6542311.

Background and Objective: The synergy of interleukin (IL)-17 along with other pro-inflammatory cytokines is well known in various autoimmune and infectious diseases. A longitudinal study in the Sudanese population showed an association of IL-17 with the protection of kala-azar outbreak. The protective role of IL-17 is also known in terms of expansion of IL-17-producing cells in vaccine-induced immunity. However, the prophylactic role of IL-17 in visceral leishmaniasis has still not been validated. In the present study, we evaluated the prophylactic efficacy of IL-17A and interferon (IFN)- γ in *Leishmania donovani*-challenged Balb/c mice.

Materials and Methods: Two doses of recombinant IL (rIL)-17A and/or IFN- γ were administered intraperitoneally after/at 1 week interval and then the mice were challenged with amastigote form of *L. donovani*. At 45 days of postchallenge, mice were sacrificed and evaluated for change in the body and organ weight, parasitic load in visceral organs, and fold change in gene expression of cytokines.

Results: We observed that the prophylactic use of rIL-17A and IFN- γ alone or in combination significantly inhibited the parasitic load in visceral organs. Furthermore, pro-inflammatory cytokine gene expression increased up to 2-4-folds in mice treated with recombinant cytokines.

Conclusion: Our results suggest that prophylactic use of recombinant IFN- γ and IL-17A inhibits parasitic growth in visceral organs of *L. donovani*-challenged experimental mice model, especially through upregulation of pro-inflammatory cytokines' gene expression.

148: Kumar P, Bhaskar S. Myeloid differentiation primary response protein 88 (MyD88)-deficient dendritic cells exhibit a skewed cytokine response to BCG. *BMC Res Notes.* 2019 Jan 23;12(1):52. doi: 10.1186/s13104-019-4086-6. PubMed PMID: 30674337; PubMed Central PMCID: PMC6343232.

OBJECTIVE: Macrophages and dendritic cells (DCs) play key role in the recognition of mycobacterial infection and mounting of antimycobacterial immunity. In case of macrophages, recognition of BCG and other mycobacteria has been attributed

predominantly to MyD88-dependent signaling. Interestingly, in previous study with bone marrow-derived DCs, we have shown that BCG promotes the survival of wild-type and MyD88^{-/-} cells to the comparable levels. In the present study, we further examined MyD88^{-/-} DC's response to BCG.

RESULTS: Bone marrow-derived DCs from wild-type and MyD88^{-/-} mice were stimulated with BCG and analyzed for cytokine secretion. As expected, BCG-stimulated wild-type DCs produced significant amount of TNF- α and IL-12p40 in response to BCG. Interestingly, BCG-stimulated MyD88^{-/-} DCs were also found to secrete significantly higher levels of TNF- α and IL-12p40, compared with unstimulated DCs. We further observed that wild-type DCs produced significant level of immunosuppressive cytokine IL-10 in response to BCG, whereas MyD88^{-/-} DCs secreted very low amount of IL-10 when stimulated with BCG. These findings demonstrated that MyD88^{-/-} DCs exhibit a skewed cytokine response to BCG.

149: Kumar P, Nayyar R, Seth A, Gupta D. Management of cavernous abdominal wall defects post radical cystectomy in adult exstrophy complex. *BMJ Case Rep.* 2019 Jan 14;12(1). pii: bcr-2018-226076. doi: 10.1136/bcr-2018-226076. PubMed PMID: 30642850.

The exstrophy-epispadias complex represents a spectrum of genitourinary malformations ranging from simple glanular epispadias to an overwhelming multisystem defect, cloacal exstrophy. Neonatal total reconstruction of bladder exstrophy-epispadias complex is the treatment of choice. An adult patient presenting with untreated exstrophy is very rare. Malignant transformation, commonly adenocarcinoma, in such cases is a known complication due to mucosal metaplasia of urothelium. Management in such cases necessitates a radical surgical procedure that often results in a massive defect in the anterior abdominal wall. Providing a cover for such defects is a challenging task for the reconstructive surgeon. Local skin flaps and wide mobilisation of the rectus muscle are the usually employed techniques for closure of such defects. However, these may be inadequate in extremely large defects such as those encountered in our patients. We, hereby, describe our technique of closure of the abdominal wall defect using a pedicled anterolateral thigh flap.

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150: Kumar R. What's inside. *Indian J Urol.* 2019 Jan-Mar;35(1):4-5. doi: 10.4103/iju.IJU_370_18. PubMed PMID: 30787507; PubMed Central PMCID: PMC6334582.

151: Kumar R. IJU for the Indian subcontinent. *Indian J Urol.* 2019 Jan-Mar;35(1):1. doi: 10.4103/iju.IJU_372_18. PubMed PMID: 30692717; PubMed Central PMCID: PMC6334581.

152: Kumar S, Kumar R, Gupta YK, Singh S. In vivo anti-arthritis activity of *Bauhinia purpurea* Linn. Bark Extract. *Indian J Pharmacol.* 2019 Jan-Feb;51(1):25-30. doi: 10.4103/ijp.IJP_107_16. PubMed PMID: 31031464; PubMed Central PMCID: PMC6444833.

OBJECTIVE: *Bauhinia purpurea* (BP) Linn. (Caesalpiniaceae) is a plant of great medicinal importance and has been used since ancient times for treating many inflammatory conditions including arthritis. This study investigates the anti-arthritis potential of the hydroalcoholic extract from the stem bark of BP. **MATERIALS AND METHODS:** The anti-inflammatory and anti-arthritis activity of BP at various doses was used to evaluate its anti-inflammatory activity and anti-arthritis activity. Serum of arthritic rats was collected at day 21 for detecting serum cytokines level and to evaluate the effect of BP on its serum level. Furthermore, the safety of BP was evaluated in acute (5 days) and subacute (28 days) toxicity study in rats.

RESULTS: There was a significant inhibition ($P < 0.01$) in paw edema at a different time scale with different doses of BP (50, 100, and 200 mg/kg). BP also demonstrated dose-dependent anti-arthritis activity on all observation days (3,

7, 14, and 21). In addition, there was also a significant decrease ($P < 0.01$) in oxidative stress markers, circulating pro-inflammatory cytokine (tumor necrosis factor alpha from 45.91 to 37.44, interleukin-1 (IL-1) β from 18.24 to 16.06, and IL-6 from 69.77 to 58.44) and an increase in anti-inflammatory cytokine (IL-10 from 8.07 to 12.07) levels. BP was found to be safe with an oral LD50 value of >2 g/kg in acute toxicity study and also no toxicological effect was observed in the oral subacute toxicity study.

CONCLUSION: This study demonstrates that BP bark possesses anti-arthritic activity potential and confirm its folklore use in the treatment of inflammatory conditions.

153: Kumar V, Jain S, Bhayana AA, Singh BS. Free floating pigmented vitreous cyst. *Indian J Ophthalmol*. 2019 Jan;67(1):140-141. doi: 10.4103/ijo.IJO_855_18. PubMed PMID: 30574923; PubMed Central PMCID: PMC6324119.

154: Kumar V, Kumawat D, Mahalingam K. Macular Colobomata: Comparison of Clinical and Optical Coherence Tomography Features With Serologic Results. *Am J Ophthalmol*. 2019 Apr;200:47-56. doi: 10.1016/j.ajo.2018.12.018. Epub 2019 Jan 8. PubMed PMID: 30633892.

PURPOSE: To assess the correlation between the morphologic features and serology in eyes with macular colobomata (MC).

DESIGN: Retrospective comparative case series.

METHODS: Setting: Institutional.

STUDY POPULATION: Patients presenting with MC to the retina clinic over a period of 2 years (January 2016 to December 2017). Interventional/Observational

Procedure: Color fundus and swept-source optical coherence tomography (SSOCT) features were reviewed and assessed in 3 groups based on the serum IgG results: positive for *Toxoplasma*, positive for cytomegalovirus (CMV), and serology negative.

MAIN OUTCOME MEASURE: Morphologic features on clinical and OCT-based examination.

RESULTS: A total of 49 eyes of 27 patients were recruited. The mean age was 24.8 ± 14.9 years (range 7-60 years). While the lesion size, the presence of satellite lesions, choroidal excavation, and choroidal lacunae (large choroidal vessels) on SSOCT differed significantly among the groups, pigmentation, retinal fibrosis, shape, retinal vessel pattern, and choroidal vessel visibility did not vary significantly. The lesions in CMV serology-positive cases were mostly solitary ($n = 8/8$), large ($n = 5/8$) and deeply excavated ($n = 8/8$). The lesions in *Toxoplasma* serology-positive cases were mostly flat to shallow ($n = 18/26$), medium-sized ($n = 19/26$), and either a solitary lesion ($n = 17/26$) or multiple satellite lesions ($n = 9/26$). The lesions in serology-negative cases were mostly small to medium ($n = 13/15$), solitary ($n = 15/15$), deeply excavated lesions ($n = 11/15$) with choroidal lacunae ($n = 8/15$).

CONCLUSIONS: The clinical and SSOCT features such as the lesion size, the presence of satellite lesions, choroidal excavation, and choroidal lacunae can provide a clue toward the etiology of macular colobomata.

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155: Kumar VL, Pandey A, Verma S, Das P. Protection afforded by methanol extract of *Calotropis procera* latex in experimental model of colitis is mediated through inhibition of oxidative stress and pro-inflammatory signaling. *Biomed Pharmacother*. 2019 Jan;109:1602-1609. doi: 10.1016/j.biopha.2018.10.187. Epub 2018 Nov 15. PubMed PMID: 30551414.

Calotropis procera, a latex producing plant is known to possess medicinal properties including its beneficial effect in gastrointestinal disorders. The anti-inflammatory effect of its latex in various experimental models is noteworthy and in light of this the present study was carried out with an objective to evaluate its efficacy in ulcerative colitis, an inflammatory condition of the colon. Colitis was induced in rats by acetic acid and the rats were divided into four groups where one group served as experimental control and

the other groups were treated with two doses of methanol extract of dried latex of *C. procera* (MeDL; 50 and 150mg/kg) and mesalazine (MSZ; 300mg/kg). The study also included normal control (NC) group for comparison of various parameters related to colon like macroscopic changes, ulcer score, adherent mucus content, weight/length ratio, small intestinal transit, oxidative stress and inflammatory markers, tissue histology and immunoreactivity of cyclooxygenase-2 (COX-2), inducible nitric oxide synthase (iNOS) and nuclear factor kappa beta (NFκB) subunit p65. Treatment of colitic rats with MeDL produced a significant reduction in colonic mucosal damage as revealed by macroscopic and microscopic evaluation and normalization of tissue levels of oxidative stress markers and pro-inflammatory mediators. The protection afforded by MeDL was also evident from its restorative effect on tissue histology and expression of COX-2, iNOS and NFκB(p65). This study shows that by targeting oxidative stress and NFκB(p65) mediated pro-inflammatory signaling, the latex of *C. procera* affords protection in colitis and its effect was comparable to that of mesalazine. This study suggests that latex of *C. procera* could serve as a promising therapeutic option for treating inflammatory conditions of the colon.

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156: Kumari P, Lavania S, Tyagi S, Dhiman A, Rath D, Anthwal D, Gupta RK, Sharma N, Gadpayle AK, Taneja RS, Sharma L, Ahmad Y, Sharma TK, Haldar S, Tyagi JS. A novel aptamer-based test for the rapid and accurate diagnosis of pleural tuberculosis. *Anal Biochem.* 2019 Jan 1;564-565:80-87. doi: 10.1016/j.ab.2018.10.019. Epub 2018 Oct 22. PubMed PMID: 30352198.

Pleural tuberculosis (pTB) is diagnosed by using a composite reference standard (CRS) since microbiological methods are grossly inadequate and an accurate diagnostic test remains an unmet need. The present study aimed to evaluate the utility of Mycobacterium tuberculosis (Mtb) antigen and DNA-based tests for pTB diagnosis. Patients were classified as 'Definite TB', 'Probable TB' and 'Non-TB' disease according to the CRS. We assessed the performance of in-house antigen detection assays, namely antibody-based Enzyme-Linked ImmunoSorbent Assay (ELISA) and aptamer-based Aptamer-Linked Immobilized Sorbent Assay (ALISA), targeting Mtb HspX protein and DNA-based tests namely, Xpert MTB/RIF and in-house devR-qPCR. ROC curves were generated for the combined group of 'Definite TB' and 'Probable TB' vs. 'Non-TB' disease group and cut-off values were derived to provide specificity of ≥98%. The sensitivity of ALISA was ~93% vs. ~24% of ELISA (p-value ≤0.0001). devR-qPCR exhibited a sensitivity of 50% vs. ~22% of Xpert (p-value ≤0.01). This novel aptamer-based ALISA test surpasses the sensitivity criterion and matches the specificity requirement spelt out in the 'Target product profile' for extrapulmonary tuberculosis samples by Unitaid (Sensitivity ≥80%, Specificity 98%). The superior performance of the aptamer-based ALISA test indicates its translational potential to bridge the existing gap in pTB diagnosis.

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157: Kumawat D, Alam T, Sahay P, Chawla R. Ocular abnormalities and complications in anterior megalophthalmos: a case series. *Eye (Lond).* 2019 May;33(5):826-832. doi: 10.1038/s41433-018-0329-3. Epub 2019 Jan 7. PubMed PMID: 30617289.

OBJECTIVES: To describe the clinical and Scheimpflug imaging features in cases of anterior megalophthalmos (AM).

METHODS: Retrospective record review was performed for patients with AM who presented between June 2017 and May 2018. Clinical history, slit lamp examination, Scheimpflug imaging indices (Pentacam-HR, Oculus, GmbH), dilated fundus examination and treatment records were reviewed.

RESULTS: The study included eight eyes of four male patients (mean age 6.5 years, range 4-10 years). Corrected distance visual acuity ranged from finger counting to 20/80. The mean horizontal corneal diameter, central corneal thickness, steep keratometry, flat keratometry, anterior chamber (AC) angle, AC depth, maximum pupil diameter and axial length were 13.8±0.5mm, 538.7±68.9µm, 42.8±1.6D, 41.4±0.9D, 47.0±4.2degree, 3.8±0.3mm, 3.9±0.1mm, and 24.9±0.9mm, respectively. Posterior dislocation of crystalline lens, vitreous

degeneration and rhegmatogenous retinal detachment (consequent of retinal dialysis/atrophic hole/lattice with hole) were noted in seven, eight and five eyes, respectively. Pigment dispersion glaucoma was noted in both eyes of one patient, which was managed with topical anti-glaucoma medication. Vitrectomy with silicone oil tamponade was successful in retinal reattachment in all three eyes that underwent surgery.

CONCLUSION: Scheimpflug imaging helps in demonstrating the corneal and anterior segment pathological changes in AM. The disease extends to involve the zonules, vitreous and retina as well. Ophthalmologists should be able to identify this disorder, recognise and manage the associations and complications.

158: Kumawat D, Venkatesh P, Brar AS, Sahay P, Kumar V, Chandra P, Chawla R. ATYPICAL MACULAR HOLES. *Retina*. 2019 Jan 16. doi: 10.1097/IAE.0000000000002448. [Epub ahead of print] PubMed PMID: 30664121.

PURPOSE: To study the etiology, clinical features, management options, and visual prognosis in various types of atypical macular holes (MHs).

METHODS: A review of the literature was performed, which focused on the etiopathogenesis of atypical or secondary MHs, their differentiating clinical features, management strategies, and varied clinical outcomes. Idiopathic or age-related, myopic, and traumatic MHs were excluded.

RESULTS: Atypical or secondary MHs arise out of concurrent ocular pathologies (dystrophy, degeneration, or infections) and laser/surgery. The contributing factors may be similar to those responsible for idiopathic or typical MHs, i.e., tangential or anteroposterior vitreofoveal traction or cystoid degeneration. The management is either observation or treatment of the underlying cause. The prognosis depends on the background pathology, duration of disease, and baseline visual acuity governed by the size of MH and morphologic health of underlying RPE and photoreceptors. The closer the morphology of atypical MH is to that of an idiopathic MH, the better the surgical outcome is.

CONCLUSION: With the advancements in retinal imaging, atypical MHs are now more frequently recognized. With increasing understanding of the underlying disease processes, and improvement in investigations and surgical treatment, management of atypical MHs may improve in the future.

159: Kumawat D, Sahay P, Sundar D, Chawla R. Comment on: Feasibility and safety of vitrectomy under topical anesthesia in an office-based setting. *Indian J Ophthalmol*. 2019 Jan;67(1):181-182. doi: 10.4103/ijo.IJO_1384_18. PubMed PMID: 30574947; PubMed Central PMCID: PMC6324095.

160: Leon C, Sharma R, Kaur S. Attention-deficit/hyperactive disorder: missing the bull's eye. *Evid Based Ment Health*. 2019 Feb;22(1):e1. doi: 10.1136/ebmental-2018-300079. Epub 2019 Jan 21. PubMed PMID: 30665988.

161: Lindfors K, Ciacci C, Kurppa K, Lundin KEA, Makharia GK, Mearin ML, Murray JA, Verdu EF, Kaukinen K. Coeliac disease. *Nat Rev Dis Primers*. 2019 Jan 10;5(1):3. doi: 10.1038/s41572-018-0054-z. Review. PubMed PMID: 30631077.

Coeliac disease is an immune-mediated enteropathy against dietary gluten present in wheat, rye and barley and is one of the most common lifelong food-related disorders worldwide. Coeliac disease is also considered to be a systemic disorder characterized by a variable combination of gluten-related signs and symptoms and disease-specific antibodies in addition to enteropathy. The ingestion of gluten leads to the generation of harmful gluten peptides, which, in predisposed individuals, can induce adaptive and innate immune responses. The clinical presentation is extremely variable; patients may have severe gastrointestinal symptoms and malabsorption, extraintestinal symptoms or have no symptoms at all. Owing to the multifaceted clinical presentation, diagnosis remains a challenge and coeliac disease is heavily underdiagnosed. The diagnosis of coeliac disease is achieved by combining coeliac disease serology and small intestinal mucosal histology during a gluten-containing diet. Currently, the only effective treatment for coeliac disease is a lifelong strict gluten-free diet; however, the

diet is restrictive and gluten is difficult to avoid. Optimizing diagnosis and care in coeliac disease requires continuous research and education of both patients and health-care professionals.

162: Lohchab M, Prakash G, Arora T, Maharana P, Jhanji V, Sharma N, Vajpayee RB. Surgical management of peripheral corneal thinning disorders. *Surv Ophthalmol*. 2019 Jan - Feb;64(1):67-78. doi: 10.1016/j.survophthal.2018.06.002. Epub 2018 Jun 8. Review. PubMed PMID: 29886126.

The peripheral corneal thinning disorders are associated with degenerative, autoimmune, or infective causes. Corneal thinning can subsequently affect the visual acuity either by inducing severe astigmatism or by progressive involvement of the central cornea. In addition to this, the integrity of the eye is at risk. Medical management is necessary to address the underlying inflammatory or infectious causes; however, most of the cases require surgical intervention for tectonic support or for visual rehabilitation in patients with severe astigmatism. Preoperative investigations help in mapping the corneal curvature and thickness, thereby facilitating planning of treatment. Routine corneal transplantation techniques do not yield good results in peripheral corneal thinning disorders. Various surgical modifications have been described to manage these challenging cases. We review the available literature on causes and management of peripheral corneal thinning disorders.

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163: Madaan P, Jauhari P, Chakrabarty B, Gulati S. Ketogenic Diet in Epilepsy of Infancy With Migrating Focal Seizures. *Pediatr Neurol*. 2019 Jun;95:92. doi: 10.1016/j.pediatrneurol.2018.12.019. Epub 2019 Jan 7. PubMed PMID: 30704868.

164: Madaan P, Jauhari P, Shruthi NM, Chakrabarty B, Gulati S. Intravenous Immunoglobulin for Severe Protracted Pediatric Guillain-Barre Syndrome: Is Single Dose Adequate? *Ann Indian Acad Neurol*. 2019 Jan-Mar;22(1):123-124. doi: 10.4103/aian.AIAN_100_18. PubMed PMID: 30692777; PubMed Central PMCID: PMC6327712.

165: Mahajan S, Agarwal S, Sharma MC, Ray R, Nakra T, Kandasamy D, Chumber S. Cytological features of dyshormonogenetic goitre: A diagnostic pitfall. *Cytopathology*. 2019 Jan;30(1):125-127. doi: 10.1111/cyt.12650. PubMed PMID: 30417955.

166: Maharana PK, Sahay P, Titiyal JS, Sharma N. Sinsky hook assisted roll preparation (SHARP): A modified technique for Descemet membrane endothelial keratoplasty donor preparation. *Saudi J Ophthalmol*. 2019 Jan-Mar;33(1):28-33. doi: 10.1016/j.sjopt.2018.12.002. Epub 2018 Dec 8. PubMed PMID: 30930660; PubMed Central PMCID: PMC6424714.

Purpose: To describe a simple technique of sinsky hook assisted roll preparation (SHARP) for Descemet membrane endothelial keratoplasty (DMEK) donor preparation. **Methods:** This experimental study was conducted at National Eye Bank, India with 40 optical grade human donor corneoscleral tissues found not suitable for surgery. 25 tissues were initially used to standardize the technique and remaining 15 for establishing the final technique. Donor corneal tissues were initially placed on a sterile Teflon block partially filled with tissue culture media. Initially, a partial thickness trephination was done followed by sinsky assisted 360° separation of the Descemet membrane (DM) from the underlying stroma (2mm from the edge). The separation was further extended by 3-4mm from the edge for 4-5 clock hours followed by bimanual peeling of the DM. This was followed by central 8mm trephination. The primary outcome measures were a complete success (8mm roll without peripheral edge tears) and partial success (8mm roll with peripheral edge tears). **Results:** DMEK roll was successfully peeled in 86.6% tissues (n=13/15). Complete

success was obtained in 66.6% tissues while partial success was obtained in 20% tissues. The median age of donor tissue was 45 years. The donor age of tissues, from which DMEK roll could not be obtained (2/12) was 15 days and 18 years. Conclusion: SHARP is a simple technique of DMEK that does not require any sophisticated instruments.

167: Maitra S, Ray BR, Bhattacharjee S, Baidya DK, Dhua D, Batra RK. Distal radial arterial cannulation in adult patients: A retrospective cohort study. Saudi J Anaesth. 2019 Jan-Mar;13(1):60-62. doi: 10.4103/sja.SJA_700_18. PubMed PMID: 30692890; PubMed Central PMCID: PMC6329248.

Purpose: Safety and feasibility of distal radial artery cannulation at the anatomic snuffbox in the perioperative settings in adult patients have been assessed in this study.

Methods: Adult patients undergoing elective surgery requiring arterial cannulation were recruited in this retrospective cohort study.

Results: Data of 55 patients have been reviewed here; among which in 21 patients, arterial puncture was performed ultrasound guidance and in 34 patients puncture was guided by the pulsation of the distal radial artery at the anatomical snuffbox. First attempt success rate of distal radial arterial cannulation was 76.3% (42 of 55 patients) and it was similar between ultrasound guided (USG) and palpation technique ($P = 0.53$, Chi-square test). Overall, cannulation success rate was 87.3% (48 of 55 patients) and it was also similar between USG and palpation technique ($P = 0.79$, Chi-square test).

Conclusion: Distal radial artery cannulation is technically feasible in patients undergoing elective surgery. However, further randomized controlled trials are required to establish its clinical utility and safety profile in comparison to conventional radial artery cannulation.

168: Makhija N, Magoon R, Balakrishnan I, Das S, Malik V, Gharde P. Left ventricular outflow tract obstruction following aortic valve replacement: A review of risk factors, mechanism, and management. Ann Card Anaesth. 2019 Jan-Mar;22(1):1-5. doi: 10.4103/aca.ACA_226_17. Review. PubMed PMID: 30648672; PubMed Central PMCID: PMC6350428.

The presence of dynamic left ventricular outflow tract obstruction (LVOTO) can complicate the postoperative course of patients undergoing surgical aortic valve replacement (AVR). The phenomenon of LVOTO is a consequence of an interplay of various pathoanatomic mechanisms. The prevailing cardiovascular milieu dictates the hemodynamic significance of the resultant LVOTO in addition to the anatomical risk factors. A thorough understanding of the predisposing factors, mechanism, and hemodynamic sequel of the obstruction is pivotal in managing these cases. A comprehensive echocardiographic examination aids in risk prediction, diagnosis, severity characterization, and follow-up of management efficacy in the setting of postoperative LVOTO. The armamentarium of management modalities includes conservative (medical) and surgical options. A stepwise approach should be formulated based on the physiological and anatomical substrates predisposing to LVOTO. The index phenomenon occurs more frequently than appreciated and should be considered when the post-AVR patients exhibit hemodynamic instability unresponsive to conventional supportive measures. The present article provides an overview of various peculiarities of this under-recognized phenomenon in the context of the perioperative management of patients undergoing AVR.

169: Makhija N, Magoon R. Ischemia Begets Right Ventricular Dysfunction After Cone Repair for Ebstein's Anomaly. J Cardiothorac Vasc Anesth. 2019 Jan;33(1):261-262. doi: 10.1053/j.jvca.2018.09.026. Epub 2018 Sep 25. PubMed PMID: 30529179.

170: Makwana T, Gupta N, Vashist P. Ocular emergencies in the South Asia region. Community Eye Health. 2019;31(104):S1-S4. PubMed PMID: 31086445; PubMed Central PMCID: PMC6390520.

171: Malhi P, Kaur A, Singhi P, Sankhyan N. Sleep Dysfunction and Behavioral Daytime Problems in Children with Autism Spectrum Disorders: A Comparative Study. *Indian J Pediatr.* 2019 Jan;86(1):12-17. doi: 10.1007/s12098-018-2731-z. Epub 2018 Jun 28. PubMed PMID: 29951780.

OBJECTIVES: To compare parent reported sleep behaviors of children with Autism Spectrum Disorders (ASD) and normal healthy controls and to examine the association of sleep disturbances with daytime behavioral difficulties in children with ASD.

METHODS: Sixty ASD children (85% boys) (Mean age=6.1 y, SD=2.4) were recruited from the Psychology unit of the Department of Pediatrics of a tertiary care hospital. An age and socio-economic status matched group of typically developing (TD) children (N=60) were also recruited. The Children's Sleep Habits Questionnaire (CSHQ) was used to measure sleep problems. The Childhood Psychopathology Measurement Schedule was used to measure day time behavioral difficulties.

RESULTS: Sleep problems were nearly two times more prevalent among children with ASD (88.3%) as compared to the TD group (46.7%) ($\chi^2=23.74$, $P=0.0001$). The total CSHQ and 6 out of the 8 subscales scores of the ASD group were also significantly higher than the TD group. Overall, children with ASD displayed significant more bedtime resistance than controls ($t= 3.95$, $P=0.001$). The sleep duration subscale showed that children with ASD, relative to the TD group, slept too little ($\chi^2=23.08$, $P=0.0001$), did not sleep the right amount of time ($\chi^2= 11.86$, $P=0.003$), and displayed significant variation in the duration of time slept ($\chi^2=11.96$, $P=0.003$). In addition, parent reported sleep dysfunction had a significant relationship with daytime reported behavior difficulties ($r=0.53$, $P=0.01$) in children with ASD. Stepwise multiple regression analysis revealed that 30% of the variance in number of daytime behavioral problems was explained by only two variables: total CSHQ scores and duration of night awake time ($F=11.18$, $P=0.001$).

CONCLUSIONS: Children with ASD are at a high risk for sleep problems and this is associated with daytime behavior disturbances. Pediatricians should routinely screen ASD children for sleep problems and initiate timely and appropriate interventions.

172: Malhotra A, Sharma U, Puhan S, Chandra Bandari N, Kharb A, Arifa PP, Thakur L, Prakash H, Vasquez KM, Jain A. Stabilization of miRNAs in esophageal cancer contributes to radioresistance and limits efficacy of therapy. *Biochimie.* 2019 Jan;156:148-157. doi: 10.1016/j.biochi.2018.10.006. Epub 2018 Oct 13. Review. PubMed PMID: 30326253.

The five-year survival rate of esophageal cancer patients is less than 20%. This may be due to increased resistance (acquired or intrinsic) of tumor cells to chemo/radiotherapies, often caused by aberrant cell cycle, deregulated apoptosis, increases in growth factor signaling pathways, and/or changes in the proteome network. In addition, deregulation in non-coding RNA-mediated signaling pathways may contribute to resistance to therapies. At the molecular level, these resistance factors have now been linked to various microRNA (miRNAs), which have recently been shown to control cell development, differentiation and neoplasia. The increased stability and dysregulated expression of miRNAs have been associated with increased resistance to various therapies in several cancers, including esophageal cancer. Therefore, miRNAs represent the next generation of molecules with tremendous potential as biomarkers and therapeutic targets. However, detailed studies on miRNA-based therapeutic interventions are still in their infancy. Hence, in this review, we have summarized the current status of microRNAs in dictating the resistance/sensitivity of tumor cells to chemotherapy and radiotherapy. In addition, we have discussed various strategies to increase radiosensitivity, including targeted therapy, and the use of miRNAs as radiosensitive/radioresistance biomarkers for esophageal cancer in the clinical setting.

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173: Malhotra R, Dhawan B, Garg B, Shankar V, Nag TC. A Comparison of Bacterial

Adhesion and Biofilm Formation on Commonly Used Orthopaedic Metal Implant Materials: An In vitro Study. *Indian J Orthop.* 2019 Jan-Feb;53(1):148-153. doi: 10.4103/ortho.IJOrtho_66_18. PubMed PMID: 30905995; PubMed Central PMCID: PMC6394199.

Background: Bacterial adherence and biofilm formation on the surface of biomaterials can often lead to implant-related infections, which may vary depending on the species of microorganisms, type of biomaterial used, and physical characteristics of implant surfaces. However, there are limited studies specifically comparing biofilm formation between commonly used metallic orthopaedic implant materials and different bacterial strains. This in vitro study is to evaluate the ability of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Escherichia coli*, *Klebsiella pneumoniae*, and *Pseudomonas aeruginosa* to adhere to and to form biofilms on the surface of five orthopaedic biomaterials, viz., cobalt and chromium, highly cross-linked polyethylene, stainless steel, trabecular metal, and titanium alloy.

Materials and Methods: Bacterial adherence and bacterial biofilm-formation assays were performed by culturing *S. aureus* ATCC 29213, *S. epidermidis* ATCC 35984, *E. coli* ATCC 35218, *K. pneumoniae* ATCC 700603, and *P. aeruginosa* ATCC 27853 for 48 h on five different biomaterials. Quantitative bacterial adherence and biofilm formation were analyzed with a scanning electron microscope.

Results: The highest level of adherence was observed on highly cross-linked polyethylene, followed by titanium, stainless steel, and trabecular metal, with the lowest occurring on the cobalt-chromium alloy. Among the bacterial strains tested, the ability for high adherence was observed with *S. epidermidis* and *K. pneumoniae* followed by *P. aeruginosa* and *E. coli*, whereas *S. aureus* showed the least adherence.

Conclusion: Cobalt-chromium was observed to have the lowest proclivity towards bacterial adherence compared to the other biomaterials tested. However, bacterial adhesion occurred with all the materials. Hence, it is necessary to further evaluate newer biomaterials that are resistant to bacterial adherence.

174: Malhotra R, Bala K, Gautam D, Bhattacharya A, Xess AB, Pandey P, Verma S, Singh UB. *Mycobacterium abscessus* Periprosthetic joint infection following bilateral Total Knee arthroplasty. *IDCases.* 2019 Apr 24;17:e00542. doi: 10.1016/j.idcr.2019.e00542. eCollection 2019. PubMed PMID: 31080734; PubMed Central PMCID: PMC6505037.

Periprosthetic joint infection (PJI) can be protracted, incapacitating, needing multiple interventions and could even lead to mortality. Early post-operative PJI has been ascribed to peri-operative introduction of highly virulent bacteria, while delayed post-operative to low-virulence bacteria. Non-tuberculous mycobacteria (NTM) do not figure in the usual list of etiological agents. We report a case of difficult diagnosis of bilateral PJI caused by *Mycobacterium abscessus*, following bilateral total knee arthroplasty in an elderly male, but treated successfully despite prolonged infection. *M. abscessus* complex comprises a group of rapidly growing, multidrug-resistant NTM, capable of forming biofilms on prostheses, responsible for wide spectrum of hospital acquired infections. *M. abscessus* as a cause of PJI is not reported widely. There are a few cases described in literature worldwide. There are no policy guidelines available for treating such cases. High clinical suspicion, with a concerted effort to grow and identify the causal pathogen is important. Standard anti-tubercular therapy is not recommended for treatment due to inherent resistance. Complete excision of infected tissues and removal of prosthesis along with prolonged combination antimicrobial regimen is the treatment of choice.

175: Marwaha RK, Garg MK, Mithal A, Gupta S, Shukla M, Chadha A. Effect of Vitamin D Supplementation on Bone Turnover Markers in Children and Adolescents from North India. *Indian J Endocrinol Metab.* 2019 Jan-Feb;23(1):27-34. doi: 10.4103/ijem.IJEM_149_18. PubMed PMID: 31016149; PubMed Central PMCID: PMC6446672.

Objectives: Vitamin D is known to play an important role in bone mineral metabolism. Its deficiency may affect growth and status of bone markers in

children. Hence, we undertook to study the status of bone markers in children with vitamin D deficiency (VDD) and impact of vitamin D3 supplementation on them. Materials and Methods: Total 468 out of 615 children and adolescents with VDD, who were given either of the three doses (600, 1000, and 2000) of vitamin D supplementation, were included in the study. These 468 children with pre- and postsupplementation preserved samples with available anthropometry, serum biochemistry, 25-hydroxy-vitamin D, and parathormone were evaluated for bone formation (procollagen type 1 amino-terminal propeptide [P1NP]) and resorption (β -cross laps [CTx]) markers.

Results: The mean age and body mass index of these children were 11.3 ± 2.3 years (boys: 11.5 ± 2.4 ; girls: 12.2 ± 1.2 years; $P = 0.03$) and 18.1 ± 3.8 kg/m² (boys: 18.2 ± 3.9 ; girls: 17.6 ± 3.2 kg/m²; $P = 0.208$), respectively. There were 8.8% subjects with severe, 42.7% with moderate, and 48.5% with mild VDD. There was a significant decline in serum P1NP (from 691 ± 233 ng/ml to 640 ± 259 ng/ml, $P < 0.001$) and CTx (from 1.67 ± 0.53 ng/ml to 1.39 ± 0.51 ng/ml, $P < 0.001$) following supplementation. Though decline in serum P1NP and CTx levels was observed in both boys and girls, among all three supplementation groups and VDD categories, the effect was more marked in serum CTx than P1NP levels.

Conclusions: Vitamin D supplementation in VDD children resulted in decrease in both bone formation (P1NP) and resorption (CTx). The impact, however, was more marked on bone resorption than bone formation.

176: Meel R, Desai A, Gaur N, Bakhshi S. Myeloid sarcoma presenting as an unusual limbal mass. *BMJ Case Rep.* 2019 Jan 14;12(1). pii: bcr-2018-226284. doi: 10.1136/bcr-2018-226284. PubMed PMID: 30642851.

A 19-year-old woman presented to the outpatient department with occasional ocular pain and redness and a perilimbal mass, which she noticed 5 months ago in her left eye. She had no systemic complaints. Ultrasound biomicroscopy of the mass showed a hypoechoic lesion with uniform reflectivity. The patient underwent an excision biopsy and a histopathological analysis revealed features suggestive of a granulocytic sarcoma/myeloid sarcoma. Further haematopathological evaluation confirmed concurrent acute myeloid (myelomonocytic) leukaemia French American British classification M4. There was complete remission of the ocular surface lesion and leukaemia with systemic chemotherapy. At the last follow-up of 18 months post-treatment the patient is free of disease.

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177: Meena DS, Sonwal VS, Bohra GK, Balesa J, Rohila AK. Celiac disease with Budd-Chiari syndrome: A rare association. *SAGE Open Med Case Rep.* 2019 Apr 8;7:2050313X19842697. doi: 10.1177/2050313X19842697. eCollection 2019. PubMed PMID: 31001425; PubMed Central PMCID: PMC6454644.

Budd-Chiari syndrome is characterized by hepatic venous outflow tract obstruction. We describe an 18-year-old female of known celiac disease presented with progressive abdomen distention and shortness of breath for the last 1 month. Computed tomography of abdomen revealed hepatic vein obstruction. The patient was diagnosed with Budd-Chiari syndrome. Coagulation profile showed an increased homocysteine level. Serum folate level was also decreased. The patient was put on oral anticoagulant with a gluten-free diet. After 4 weeks, the patient showed significant improvement with decreased ascites. The association of Budd-Chiari syndrome with Celiac disease has not yet been fully understood. There have been few reports that described this rare association. Budd-Chiari syndrome should be considered as an important differential in a patient with unexplained ascites and celiac disease.

178: Meena H, Jana M, Singh V, Kabra M, Jain V. Growth Pattern and Clinical Profile of Indian Children with Classical 21-Hydroxylase Deficiency Congenital Adrenal Hyperplasia on Treatment. *Indian J Pediatr.* 2019 Jun;86(6):496-502. doi: 10.1007/s12098-018-02848-6. Epub 2019 Jan 30. PubMed PMID: 30697677.

OBJECTIVE: To prospectively assess the growth parameters in a cohort of children with classical 21-hydroxylase deficiency congenital adrenal hyperplasia, comprehensively profile their clinical data and evaluate the prevalence of testicular adrenal rest tumors among affected boys.

METHODS: Children with congenital adrenal hyperplasia aged 0-18 y were prospectively followed up for six mo to 2 y (mean follow-up: 17±6 mo). Baseline data were obtained by interviewing parents and from clinic records.

Anthropometry, biochemical parameters, X-ray for bone age, and ultrasound scrotum (in boys >5 y) for testicular adrenal rest tumors were performed.

RESULTS: Among the 81 children (32 boys, 49 girls), two-thirds (57) had salt-wasting and the remaining had simple virilizing type and the mean age at enrolment was 6.2±4.9 y. The overall height standard deviation score was -0.6 (-2.0 to 0.8) with a greater compromise in children in the age groups 0-2 y and >10 y and those with salt-wasting type. Overall, 25 (31%) children had short stature and 45 (55.6%) had growth velocity below the reference range. Bone age advancement beyond 2 standard deviation score was seen in 46% of children assessed. Testicular adrenal rest tumors were detected in 5 out of 21 boys (23.8%).

CONCLUSIONS: The auxological pattern observed in this homogenously-managed Indian pediatric cohort with congenital adrenal hyperplasia highlights that infancy and peri-pubertal age groups are the most vulnerable, reiterating the importance of diligent growth monitoring. The high prevalence of testicular adrenal rest tumors merits the incorporation of annual ultrasound in the follow-up protocol of these patients.

179: Meena RK, Gurjar HK, Singh S, Aggarwal D. Absence of axis (C2) posterior elements leading to C2-C3 instability and myelopathy in young adults. *Neurol India*. 2019 Jan-Feb;67(1):318-321. doi: 10.4103/0028-3886.253646. PubMed PMID: 30860151.

180: Mishra D, Satpathy G, Chawla R, Venkatesh P, Ahmed NH, Panda SK. Utility of broad-range 16S rRNA PCR assay versus conventional methods for laboratory diagnosis of bacterial endophthalmitis in a tertiary care hospital. *Br J Ophthalmol*. 2019 Jan;103(1):152-156. doi: 10.1136/bjophthalmol-2018-312877. Epub 2018 Oct 12. PubMed PMID: 30315133.

BACKGROUND: Endophthalmitis, a sight-threatening intraocular infection, can be of postsurgical, post-traumatic or endogenous origin. Laboratory diagnosis-based appropriate therapy can be vision-saving. Conventional culture-based laboratory diagnosis takes time and lacks sensitivity. In this study a broad-range PCR assay was assessed against conventional and automated culture methods in vitreous specimens for accurate microbiological diagnosis.

AIMS: To use broad-range PCR assay targeting 16S ribosomal RNA (rRNA) region of bacteria and to assess its performance vis-à-vis conventional and automated culture methods in the laboratory diagnosis of endophthalmitis.

METHODS: Vitreous specimens from 195 patients with clinically diagnosed endophthalmitis were processed for classical and automated culture methods, antimicrobial sensitivity and broad-range PCR assay targeting 762 bp region of 16S rRNA followed by nucleotide sequencing by Sanger's method. Causative agents were identified from the nucleotide sequences analysed against the GenBank database, and organisms were identified using the Clinical and Laboratory Standards Institute (CLSI) MM18A guidelines.

RESULTS: Bacteria could be detected from 127 (65.13%) of the 195 vitreous specimens by broad-range PCR assay; bacterial isolation was possible from 17 (8.7%) and 60 (30.76%) of these specimens by conventional and automated culture methods, respectively (p<0.0001). PCR assay could detect two uncultured bacterium, and in five cases the bacterial identity could not be determined from NCBI database matching.

CONCLUSION: Broad-range PCR assay could provide definitive microbial diagnosis within 24 hours in significantly more patients (p<0.0001). Some rare organisms could be detected, useful in treatment modalities. Automated culture was significantly more sensitive than conventional culture.

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181: Mittal S, Madan K. A 58-year-old lady with cough and breathlessness. *Lung India*. 2019 Jan-Feb;36(1):70-71. doi: 10.4103/lungindia.lungindia_278_17. PubMed PMID: 30604709; PubMed Central PMCID: PMC6330811.

182: Modak T, Singh S, Kumaran S, Deb KS, Chadda RK. Lorazepam-Assisted Interview in a Resistant Case of Functional Dysphonia. *J Voice*. 2019 Jan 28. pii: S0892-1997(18)30451-X. doi: 10.1016/j.jvoice.2019.01.002. [Epub ahead of print] PubMed PMID: 30704785.

BACKGROUND: Functional neurological symptom disorder presents with varied neurological signs often as a result of stress. It is usually treated with supportive psychotherapy and occasionally antidepressants. Literature regarding treatment for resistant cases is scarce. We describe on such presentation. **CASE PRESENTATION:** A 40-year-old man who presented with a history of sudden onset dysphonia for 5 days. There were no immediate stressors. Physical examination revealed that he was unable to make movements of the tongue while speaking although power and range of movement were normal. Magnetic resonance imaging and computed tomography of brain and endoscopic examination of oral cavity and larynx did not reveal any organic cause. Functional magnetic resonance imaging was conducted under a language protocol to determine neurophysiological circuits involved in this unique presentation. The patient failed conventional pharmacotherapy and supportive psychotherapy. Thereafter, he underwent lorazepam-assisted interviews where he would be asked to make purposive movements of the tongue and attempt to pronounce basic phonemes. He would converse normally during the lorazepam interviews and made gradual improvements after each session. The patient was able speak clearly after 12 such sessions and continues to maintain well since.

CONCLUSIONS: We describe a resistant case of functional dysphonia. The patient presented without any stressor and failed conventional treatments. The case demonstrates that Lorazepam can be used effectively in drug-assisted interviews for functional dysphonia. It also provides information regarding functional activity of the brain during a dissociative state.

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183: Modi P, Bhoi S, Aggarwal P, Murmu LR, Sinha TP, Ekka M, Kumar A, Jamshed N. The changing paradigm from subjectivity to objectivity in pupillary assessment during neurological examination. *Am J Emerg Med*. 2019 Jan 21. pii: S0735-6757(19)30037-3. doi: 10.1016/j.ajem.2019.01.031. [Epub ahead of print] PubMed PMID: 30712949.

184: Moscote-Salazar LR, Satyarthee GD. Letter: External Ventricular Drain and Hemorrhage in Aneurysmal Subarachnoid Hemorrhage Patients on Dual Antiplatelet Therapy: A Retrospective Cohort Study. *Neurosurgery*. 2019 Jan 1;84(1):E98. doi: 10.1093/neuros/nyy488. PubMed PMID: 30551190.

185: Nagori A, Dhingra LS, Bhatnagar A, Lodha R, Sethi T. Predicting Hemodynamic Shock from Thermal Images using Machine Learning. *Sci Rep*. 2019 Jan 14;9(1):91. doi: 10.1038/s41598-018-36586-8. PubMed PMID: 30643187; PubMed Central PMCID: PMC6331545.

Proactive detection of hemodynamic shock can prevent organ failure and save lives. Thermal imaging is a non-invasive, non-contact modality to capture body surface temperature with the potential to reveal underlying perfusion disturbance in shock. In this study, we automate early detection and prediction of shock using machine learning upon thermal images obtained in a pediatric intensive care unit of a tertiary care hospital. 539 images were recorded out of which 253 had

concomitant measurement of continuous intra-arterial blood pressure, the gold standard for shock monitoring. Histogram of oriented gradient features were used for machine learning based region-of-interest segmentation that achieved 96% agreement with a human expert. The segmented center-to-periphery difference along with pulse rate was used in longitudinal prediction of shock at 0, 3, 6 and 12 hours using a generalized linear mixed-effects model. The model achieved a mean area under the receiver operating characteristic curve of 75% at 0 hours (classification), 77% at 3 hours (prediction) and 69% at 12 hours (prediction) respectively. Since hemodynamic shock associated with critical illness and infectious epidemics such as Dengue is often fatal, our model demonstrates an affordable, non-invasive, non-contact and tele-diagnostic decision support system for its reliable detection and prediction.

186: Nagral A, Sarma MS, Matthai J, Kukkle PL, Devarbhavi H, Sinha S, Alam S, Bavdekar A, Dhiman RK, Eapen CE, Goyal V, Mohan N, Kandadai RM, Sathiyasekaran M, Poddar U, Sibal A, Sankaranarayanan S, Srivastava A, Thapa BR, Wadia PM, Yachha SK, Dhawan A. Wilson's Disease: Clinical Practice Guidelines of the Indian National Association for Study of the Liver, the Indian Society of Pediatric Gastroenterology, Hepatology and Nutrition, and the Movement Disorders Society of India. *J Clin Exp Hepatol*. 2019 Jan-Feb;9(1):74-98. doi: 10.1016/j.jceh.2018.08.009. Epub 2018 Sep 3. Review. PubMed PMID: 30765941; PubMed Central PMCID: PMC6363961.

Clinical practice guidelines for Wilson's disease (WD) have been published by the American Association for the Study of Liver Diseases and European Association for the Study of the Liver in 2008 and 2012, respectively. Their focus was on the hepatic aspects of the disease. Recently, a position paper on pediatric WD was published by the European Society of Pediatric Gastroenterology Hepatology and Nutrition. A need was felt to harmonize guidelines for the hepatic, pediatric, and neurological aspects of the disease and contextualize them to the resource-constrained settings. Therefore, experts from national societies from India representing 3 disciplines, hepatology (Indian National Association for Study of the Liver), pediatric hepatology (Indian Society of Pediatric Gastroenterology, Hepatology and Nutrition), and neurology (Movement Disorders Society of India) got together to evolve fresh guidelines. A literature search on retrospective and prospective studies of WD using MEDLINE (PubMed) was performed. Members voted on each recommendation, using the nominal voting technique. The Grades of Recommendation, Assessment, Development and Evaluation system was used to determine the quality of evidence. Questions related to diagnostic tests, scoring system, and its modification to a version suitable for resource-constrained settings were posed. While ceruloplasmin and 24-h urine copper continue to be important, there is little role of serum copper and penicillamine challenge test in the diagnostic algorithm. A new scoring system - Modified Leipzig score has been suggested with extra points being added for family history and serum ceruloplasmin lower than 5 mg/dl. Liver dry copper estimation and penicillamine challenge test have been removed from the scoring system. Differences in pharmacological approach to neurological and hepatic disease and global monitoring scales have been included. Rising bilirubin and worsening encephalopathy are suggested as indicators predicting need for liver transplant but need to be validated. The clinical practice guidelines provide recommendations for a comprehensive management of WD which will be of value to all specialties.

187: Nambirajan A, Longchar M, Madan K, Mallick SR, Kakkar A, Mathur S, Jain D. Endobronchial ultrasound-guided transbronchial needle aspiration cytology in patients with known or suspected extra-pulmonary malignancies: A cytopathology-based study. *Cytopathology*. 2019 Jan;30(1):82-90. doi: 10.1111/cyt.12656. Epub 2018 Dec 21. PubMed PMID: 30444548.

BACKGROUND: Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is the primary modality for mediastinal lymph node staging in lung carcinoma. We aimed to evaluate its utility in extra-pulmonary malignancies (EPM).

METHODS: Database search of EBUS-TBNA aspirations (2013-2017) done in patients

with known/suspected EPMS and mediastinal lymphadenopathy/masses was performed. All archived cytology/histology material was reviewed and categorised as positive, negative and unsatisfactory.

RESULTS: The selected 139 patients included 100 patients with known EPMS, 11 patients with known lymphoma, and 28 patients with suspected EPM of unknown primary. EBUS-TBNA was adequate in 110 patients (79%), including 21 patients who yielded only reactive lymphoid tissue. Satisfactory blood clot cores were obtained in 34 patients and contributed significantly to diagnosis and ancillary testing. Metastasis was detected in 45 patients with known EPM, predominantly originating from a known primary in the breast in females (56%) and squamous cell carcinomas of head and neck in males (60%). Granulomatous lymphadenopathy was identified in 16 patients with known EPM (16%). Lymphoma relapse and granulomatous lymphadenopathy were identified in three and four patients with known lymphoma, respectively. In patients with suspected EPM of unknown primary site, malignancy was confirmed in 21 patients, predominantly representing metastatic adenocarcinomas (n = 5) and neuroendocrine neoplasms (n = 5). Immunocytochemistry was performed in 16 of these cases and aided in characterisation of primary site/type of tumour in 12 cases.

CONCLUSION: EBUS-TBNA is efficient for screening mediastinal lymph nodes/masses for malignancy in EPMS. Procuring sufficient material for ancillary testing would improve diagnostic accuracy and reduce need for resampling.

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188: Nangia S, Vadivel V, Thukral A, Saili A. Early Total Enteral Feeding versus Conventional Enteral Feeding in Stable Very-Low-Birth-Weight Infants: A Randomised Controlled Trial. *Neonatology*. 2019;115(3):256-262. doi: 10.1159/000496015. Epub 2019 Jan 30. PubMed PMID: 30699425.

OBJECTIVE: To evaluate the effect of early total enteral feeding (ETEF) when compared with conventional enteral feeding (CEF) in stable very-low-birth-weight (VLBW; 1,000-1,499 g) infants on the postnatal age (in days) at attaining full enteral feeds.

METHODS: In this unblinded randomised controlled trial, 180 infants were allocated to an ETEF (n = 91) or a CEF group (n = 89). Feeds were initiated as total enteral feeds in the ETEF group and as minimal enteral nutrition (20 mL/kg) in the CEF group. The rest of the day's requirement in the CEF group was provided as parenteral fluids. The primary outcome was postnatal age at attaining full enteral feeds. The secondary outcomes included episodes of feed intolerance, incidence of sepsis and necrotising enterocolitis (NEC), and duration of hospital stay.

RESULTS: The baseline variables including birth weight and gestational age were similar in the two groups. The infants of the ETEF group attained full enteral feeds earlier than those of the CEF group (6.5 ± 1.5 vs. 10.1 ± 4.1 days postnatal age; mean difference -3.6 [-4.5 to -2.7]; $p < 0.001$). Total episodes of feed intolerance and clinical sepsis were fewer, with a shorter duration of hospital stay, in the ETEF group (15.5 vs. 19.6 days) ($p = 0.01$). The incidence of NEC was similar in the two groups.

CONCLUSION: ETEF in stable VLBW infants results in earlier attainment of full feeds and decreases the duration of hospital stay without any increased risk of feed intolerance or NEC.

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189: Narayanan DL, Matta D, Gupta N, Kabra M, Ranganath P, Aggarwal S, Phadke SR, Datar C, Gowrishankar K, Kamate M, Jain JMN, Dalal A. Spectrum of ARSA variations in Asian Indian patients with Arylsulfatase A deficient metachromatic leukodystrophy. *J Hum Genet*. 2019 Apr;64(4):323-331. doi: 10.1038/s10038-019-0560-1. Epub 2019 Jan 23. PubMed PMID: 30674982.

Metachromatic leukodystrophy due to Arylsulfatase A enzyme deficiency is an autosomal recessive disorder caused by biallelic variations in ARSA gene. Till date 186 variations have been reported in ARSA gene worldwide, but the variation spectrum in India is not known. The aim of this study was to identify the

variation profile in Indian patients presenting with features of Arylsulfatase A deficient metachromatic leukodystrophy. We sequenced the ARSA gene in 51 unrelated families and identified 36 variants out of which 16 were novel. The variations included 23 missense, 3 nonsense, and 6 frameshift variants (3 single-base deletions and 3 single-base duplications), 1 indel, one 3bp deletion, and 2 splice site variations. The pathogenicity of the novel variations was inferred with the help of mutation prediction softwares like MutationTaster, SIFT, Polyphen-2, PROVEAN, and HANSA. The effects of the identified sequence variants on the protein structure were studied using in silico methods. The most common variation was c.931C>T(p.Arg311*), found in 11.4% (14 out of 122 alleles) of the tested individuals. To the best of our knowledge, this study is the first of its kind in India with respect to the size of the cohort and the molecular diagnostic method used and one of the largest cohorts of metachromatic leukodystrophy studied till date.

190: Nayak C, Acharyya B, Jain M, Kamboj K. Valgus osteotomy in delayed presentation of femoral neck fractures using fixed angle simple dynamic hip screw and plate. *Chin J Traumatol*. 2019 Feb;22(1):29-33. doi: 10.1016/j.cjtee.2018.12.003. Epub 2019 Jan 29. PubMed PMID: 30824174.

PURPOSE: Reduction and fixation in femoral neck fracture in young patients have a problem of nonunion requiring additional procedure like valgus osteotomy but fixation devices are technically difficult for inexperienced surgeons. We aims to assess the results of valgus osteotomy in femoral neck fracture in our setup. **METHODS:** We report a series of 20 patients of higher Pauwel's angled fracture of femoral neck fracture presenting late wherein for valgus osteotomy was added to reduction fixation secured with a commonly available 135° dynamic hip screw and plate.

RESULTS: Femoral neck fractures united in 16 patients (80%). Excellent to good results (Harris hip score >80) were seen in 70% patients. Angle of correction of preoperative Pauwels has been changed from 68.3 to 34.3.

CONCLUSION: 135° dynamic hip screw and plate provides rigid internal fixation after valgus osteotomy and being a more familiar fixation device simplifies the procedure with good results.

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191: Nayanar SK, Tripathy JP, Duraisamy K, Babu S. Prognostic efficiency of clinicopathologic scoring to predict cervical lymph node metastasis in oral squamous cell carcinoma. *J Oral Maxillofac Pathol*. 2019 Jan-Apr;23(1):36-42. doi: 10.4103/jomfp.JOMFP_132_17. PubMed PMID: 31110414; PubMed Central PMCID: PMC6503798.

Background: The extent of involvement of cervical lymph nodes is known to be the most important prognosticator in oral squamous cell carcinoma (SCC) that significantly affects the survival rate of patients. The clinical, radiological and pathological factors that can predict cervical lymph node metastasis are yet to be ascertained clearly, which poses a challenge for the surgeon to determine the extent of neck dissection.

Aim: This study aims to identify the clinical and histopathologic predictors of lymph node metastasis among patients with oral SCC and to devise a scoring system based on those predictors to aid in better clinical decision-making regarding the extent of neck dissection.

Setting: Malabar Cancer Centre, a specialized tertiary cancer care center in Kerala, India.

Methods: A retrospective review of 160 patient records and biopsy slides collected and preserved between June 2014 and May 2016.

Conclusion: The clinicopathologic parameters such as site of cancer (P = 0.03), histologic differentiation (P = 0.03), shape of rete pegs (P = 0.002), pattern of invasion (P = 0.0001) and depth of invasion >3 mm (P = 0.016) were significantly associated with the risk of lymph node metastasis. The risk score devised based on these predictors serves as an efficient tool in aiding clinical

decision-making regarding the extent of neck dissection.

192: Ojha A, Bhasym A, Mukherjee S, Annarapu GK, Bhakuni T, Akbar I, Seth T, Vikram NK, Vrati S, Basu A, Bhattacharyya S, Guchhait P. Platelet factor 4 promotes rapid replication and propagation of Dengue and Japanese encephalitis viruses. *EBioMedicine*. 2019 Jan;39:332-347. doi: 10.1016/j.ebiom.2018.11.049. Epub 2018 Dec 5. PubMed PMID: 30527622; PubMed Central PMCID: PMC6354622.

BACKGROUND: Activated platelets release cytokines/proteins including CXCL4 (PF4), CCL5 and fibrinopeptides, which regulate infection of several pathogenic viruses such as HIV, H1N1 and HCV in human. Since platelet activation is the hallmark of Dengue virus (DV) infection, we investigated the role of platelets in DV replication and also in a closely related Japanese Encephalitis virus (JEV). **METHODS AND FINDINGS:** Microscopy and PCR analysis revealed a 4-fold increase in DV replication in primary monocytes or monocytic THP-1 cells in vitro upon incubation with either DV-activated platelets or supernatant from DV-activated platelets. The mass spectrometry based proteomic data from extra-nuclear fraction of above THP-1 lysate showed the crucial association of PF4 with enhanced DV replication. Our cytokine analysis and immunoblot assay showed significant inhibition of IFN- α production in monocytes via p38MAPK-STAT2-IRF9 axis. Blocking PF4 through antibodies or its receptor CXCR3 through inhibitor i.e. AMG487, significantly rescued production of IFN- α resulting in potent inhibition of DV replication in monocytes. Further, flow cytometry and ELISA data showed the direct correlation between elevated plasma PF4 with increased viral NS1 in circulating monocytes in febrile DV patients at day-3 of fever than day-9. Similarly, PF4 also showed direct effects in promoting the JEV replication in monocytes and microglia cells in vitro. The in vitro results were also validated in mice, where AMG487 treatment significantly improved the survival of JEV infected animals.

INTERPRETATION: Our study suggests that PF4-CXCR3-IFN axis is a potential target for developing treatment regimen against viral infections including JEV and DV.

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193: Ojha V, Vadher A, Chandrashekhara SH, Malhi AS, Kumar S. Isolation of left subclavian artery in Tetralogy of Fallot with right aortic arch: A rare association diagnosed on dual source CT. *J Cardiovasc Comput Tomogr*. 2019 Jan 24. pii: S1934-5925(18)30500-8. doi: 10.1016/j.jcct.2019.01.017. [Epub ahead of print] PubMed PMID: 30709719.

194: Oleti T, Jeeva Sankar M, Thukral A, Sreenivas V, Gupta AK, Agarwal R, Deorari AK, Paul VK. Does ultrasound guidance for peripherally inserted central catheter (PICC) insertion reduce the incidence of tip malposition? - a randomized trial. *J Perinatol*. 2019 Jan;39(1):95-101. doi: 10.1038/s41372-018-0249-x. Epub 2018 Oct 22. PubMed PMID: 30348962.

OBJECTIVE: The aim of the study was to evaluate the incidence of peripheral inserted central catheter (PICC) tip malposition when the catheter is inserted under real-time ultrasound (RTUS) guidance when compared with conventional landmark (CL) technique in neonates. Additional objectives were to evaluate the PICC longevity and central line associated blood stream infections (CLABSI). **STUDY DESIGN:** In this randomised controlled trial, neonates were randomised to 'RTUS' (n=40) or 'CL' (n=40) groups. PICC tip was placed under ultrasound guidance in lower third of superior vena cava in the RTUS group. In 'CL' group, PICC was inserted as calculated by anatomical landmarks. **RESULTS:** The birth weight (1286 (926, 1662) vs. 1061 (889, 1636) g) and gestation (31.12 (3.1) vs. 31.4 (3.6) wks) were comparable among the groups. RTUS guidance during PICC insertion reduced incidence of tip malposition by 52% (67.5 vs. 32.5%; RR: 0.48; 95% CI: 0.29-0.79). The longevity of PICC and episodes of CLABSI were however similar in the two groups. **CONCLUSIONS:** Real-time ultrasound guidance during PICC placement reduces the incidence of tip malposition.

195: Padhi S, Kumar V. Response to comment on: Dramatic response to intravitreal bevacizumab in hypertensive retinopathy. *Indian J Ophthalmol*. 2019 Jan;67(1):181. doi: 10.4103/ijo.IJO_1740_18. PubMed PMID: 30574948; PubMed Central PMCID: PMC6324157.

196: Padhi S, Kumar V. Response to comment on: Dramatic response to intravitreal Bevacizumab in hypertensive retinopathy. *Indian J Ophthalmol*. 2019 Jan;67(1):179-180. doi: 10.4103/ijo.IJO_1739_18. PubMed PMID: 30574945; PubMed Central PMCID: PMC6324123.

197: Panaiyadiyan S, Singh P, Nayak B. Letter to the editor regarding the article "Evaluation of pain perception associated with use of the magnetic-end ureteric double-J stent for short-term ureteric stenting". *World J Urol*. 2019 Jan;37(1):209. doi: 10.1007/s00345-018-2311-x. Epub 2018 May 11. PubMed PMID: 29752512.

198: Pandey NN, Sharma A, Kumar S. Vertical vein aneurysm in supracardiac total anomalous pulmonary venous connection. *Ann Pediatr Cardiol*. 2019 Jan-Apr;12(1):69-70. doi: 10.4103/apc.APC_100_18. PubMed PMID: 30745776; PubMed Central PMCID: PMC6343375.

Aneurysmal dilatation of the vertical vein in a case of supracardiac total anomalous pulmonary venous connection (TAPVC) is an extremely rare condition. It has been reported to occur secondary to severe compression of the vertical vein when it traverses between the left bronchus and the left pulmonary artery. We present a 14-year-old male with supracardiac TAPVC with a vertical vein aneurysm, probably secondary to stenosis caused by a thin membranous web just proximal to the aneurysm.

199: Pandey NN, Rajagopal R, Ojha V, Sharma A, Kumar S. Rare and anomalous commissural origin of the left main coronary artery. *Acta Cardiol*. 2019 Jan 10:1-2. doi: 10.1080/00015385.2018.1550888. [Epub ahead of print] PubMed PMID: 30626277.

200: Pandey NN, Sharma A, Chowhan K, Jagia P. Rare and Anomalous Origin of Left Circumflex Artery From Left Anterior Descending Artery. *Ann Thorac Surg*. 2019 Jan;107(1):e61. doi: 10.1016/j.athoracsur.2018.07.034. Epub 2018 Sep 15. PubMed PMID: 30227126.

201: Pandey NN, Sharma A, Shaw M, Kumar S. Anomalous Left Internal Mammary Artery: A Cardiologist's Conundrum. *Ann Thorac Surg*. 2019 Jan;107(1):e63. doi: 10.1016/j.athoracsur.2018.06.063. Epub 2018 Aug 14. PubMed PMID: 30118704.

202: Pangasa N, Dali JS, Sharma KR, Arya M, Pachisia AV. Comparative evaluation of Truview evo2 and Macintosh laryngoscope for ease of orotracheal intubation in children - A prospective randomized controlled trial. *J Anaesthesiol Clin Pharmacol*. 2019 Jan-Mar;35(1):25-29. doi: 10.4103/joacp.JOACP_118_18. PubMed PMID: 31057235; PubMed Central PMCID: PMC6495625.

Background and Aims: Truview evo2 has been found to improve the glottic view when compared with the Miller blade in pediatric population. However, there is limited literature comparing it with Macintosh laryngoscope in children. We thus aimed to assess and compare Truview evo2 with the Macintosh laryngoscope for orotracheal intubation in children with regards to time to intubate, laryngoscopic view, ease of intubation, and associated hemodynamic changes.
Material and Methods: Fifty ASA I-II children aged 2-8 years for elective surgery requiring general anesthesia with orotracheal intubation participated in this

prospective randomized-controlled study. They were randomly allocated to two groups. In group-M (N = 25), laryngoscopy and intubation were performed using Macintosh laryngoscope, and in group-T (N = 25), Truview evo2 laryngoscope was used. Modified Cormack-Lehane grade, time to intubation, intubation difficulty score (IDS), and hemodynamic changes were compared between the groups. Data were analyzed using SPSS statistical software version 17 and P value <0.05 was considered statistically significant.

Results: CL grade 1 was found in a larger number of patients of group-T (P = 0.003) and CL grades 2a and 2b were found in a larger number of patients of group-M (P = 0.023 and P = 0.037, respectively). The mean time to intubation was significantly longer in group-T (19.0 ± 3.4 seconds) than in group-M (13.1 ± 2.1 seconds), P = 0.00. The overall IDS was lower in group-T than group M [i.e. median (IQR): 0 (0-0) vs 1 (0-2), respectively]. Heart rate, systolic and diastolic blood pressure, and oxygen saturation were comparable between the groups at all times.

Conclusion: Truview evo2 provides better laryngeal view and has a lesser IDS, but takes longer for intubation, when compared to the Macintosh laryngoscope in children.

203: Parmar V, Changela K, Srinivas B, Mani Sankar M, Mohanty S, Panigrahi SK, Hariharan K, Kalyanasundaram D. Relationship between Dislocation Density and Antibacterial Activity of Cryo-Rolled and Cold-Rolled Copper. *Materials (Basel)*. 2019 Jan 9;12(2). pii: E200. doi: 10.3390/ma12020200. PubMed PMID: 30634416; PubMed Central PMCID: PMC6356488.

In the present work, cold rolling and cryo-rolling were performed on 99% commercially pure copper substrates. Both cold and cryo-rolling processes caused severe plastic deformation that led to an increase in dislocation density by 14× and 28× respectively, as compared to the pristine material. Increases in average tensile strengths, by 75% (488 MPa) and 150% (698 MPa), were observed in the two rolled materials as the result of the enhancement in dislocation density. In addition to strength, enhanced antibacterial property of cryo-rolled copper was observed in comparison to cold rolled and pristine copper. Initial adhesion and subsequent proliferation of bio-film forming Gram-positive bacteria *Staphylococcus aureus* was reduced by 66% and 100% respectively for cryo-rolled copper. Approximately 55% protein leakage, as well as ethidium bromide (EtBr) uptake, were observed confirming rupture of cell membrane of *S. aureus*. Inductively coupled plasma-mass spectroscopy reveals higher leaching of elemental copper in nutrient broth media from the cryo-rolled copper. Detailed investigations showed that increased dislocation led to leaching of copper ions that caused damage to the bacterial cell wall and consequently killing of bacterial cells. Cryo-rolling enhanced both strength, as well as antibacterial activity, due to the presence of dislocations.

204: Pati H, Kundil Veetil K. Myelodysplastic Syndrome/Myeloproliferative Neoplasm (MDS/MPN) Overlap Syndromes: Molecular Pathogenetic Mechanisms and Their Implications. *Indian J Hematol Blood Transfus*. 2019 Jan;35(1):3-11. doi: 10.1007/s12288-019-01084-y. Epub 2019 Jan 24. Review. PubMed PMID: 30828140; PubMed Central PMCID: PMC6369066.

The MDS/MPN overlap syndromes are recently evolved entities that have been quite difficult to define since their discovery. They have overlapping features with other myeloid neoplasms such as MDS and MPN, which further complicates the task of their diagnosis. The unravelling of their molecular pathogenesis by recent diagnostic innovations was of paramount significance in understanding the mechanism of these syndromes. The identification of the major genetic pathways implicated in their pathogenesis not only will help in their diagnosis, but also will enable development of targeted molecular therapy as well as prognostic markers. This review discusses the basic molecular aberrations in MDS/MPN overlap syndromes and their possible future implications.

205: Peix A, Karthikeyan G, Massardo T, Kalaivani M, Patel C, Pabon LM, Jimenez-Heffernan A, Alexanderson E, Butt S, Kumar A, Marin V, Mesquita CT,

Morozova O, Paez D, Garcia EV. Value of intraventricular dyssynchrony assessment by gated-SPECT myocardial perfusion imaging in the management of heart failure patients undergoing cardiac resynchronization therapy (VISION-CRT). *J Nucl Cardiol*. 2019 Jan 25. doi: 10.1007/s12350-018-01589-5. [Epub ahead of print] PubMed PMID: 30684258.

BACKGROUND: Placing the left ventricular (LV) lead in a viable segment with the latest mechanical activation (vSOLA) may be associated with optimal cardiac resynchronization therapy (CRT) response. We assessed the role of gated SPECT myocardial perfusion imaging (gSPECT MPI) in predicting clinical outcomes at 6 months in patients submitted to CRT.

METHODS: Ten centers from 8 countries enrolled 195 consecutive patients. All underwent gSPECT MPI before and 6 months after CRT. The procedure was performed as per current guidelines, the operators being unaware of gSPECT MPI results. Regional LV dyssynchrony (Phase SD) and vSOLA were automatically determined using a 17 segment model. The lead was considered on-target if placed in vSOLA. The primary outcome was improvement in ≥ 1 of the following: ≥ 1 NYHA class, left ventricular ejection fraction (LVEF) by $\geq 5\%$, reduction in end-systolic volume by $\geq 15\%$, and ≥ 5 points in Minnesota Living With Heart Failure Questionnaire (MLHFQ).

RESULTS: Sixteen patients died before the follow-up gSPECT MPI. The primary outcome occurred in 152 out of 179 (84.9%) cases. Mean change in LV phase standard deviation (PSD) at 6 months was 10.5° . Baseline dyssynchrony was not associated with the primary outcome. However, change in LV PSD from baseline was associated with the primary outcome (OR 1.04, 95% CI 1.01-1.07, $P = .007$). Change in LV PSD had an AUC of 0.78 (0.66-0.90) for the primary outcome. Improvement in LV PSD of 4° resulted in the highest positive likelihood ratio of 7.4 for a favorable outcome. In 23% of the patients, the CRT lead was placed in the vSOLA, and in 42% in either this segment or in a segment within 10° of it. On-target lead placement was not significantly associated with the primary outcome (OR 1.53, 95% CI 0.71-3.28).

CONCLUSION: LV dyssynchrony improvement by gSPECT MPI, but not on-target lead placement, predicts clinical outcomes in patients undergoing CRT.

206: Philis-Tsimikas A, Astamirova K, Gupta Y, Haggag A, Roula D, Bak BA, Fita EG, Nielsen AM, Demir T. Similar glycaemic control with less nocturnal hypoglycaemia in a 38-week trial comparing the IDegAsp co-formulation with insulin glargine U100 and insulin aspart in basal insulin-treated subjects with type 2 diabetes mellitus. *Diabetes Res Clin Pract*. 2019 Jan;147:157-165. doi: 10.1016/j.diabres.2018.10.024. Epub 2018 Nov 16. PubMed PMID: 30448451.

AIMS: To confirm non-inferiority of insulin degludec/insulin aspart (IDegAsp) once-daily (OD) versus insulin glargine (IGlar) U100 OD+insulin aspart (IAsp) OD for HbA1c after 26 weeks, and compare efficacy and safety between groups at W26+W38.

METHODS: A 38-week, randomised, open-label, treat-to-target (HbA1c < 7.0%) trial in adults with type 2 diabetes mellitus (on basal insulin \pm oral antidiabetic drugs; HbA1c 7.0-10.0%). Randomisation (1:1): IDegAsp or IGlar U100 + IAsp. Intensification to IDegAsp twice daily (BID) was permitted at W26+W32, or with additional IAsp injections at W26 (maximum IAsp BID) or W32 (maximum IAsp three-times daily).

RESULTS: For W0-W26, mean percentage-change (standard deviation) HbA1c was: IDegAsp, -1.1 (0.9); IGlar U100 + IAsp, -1.1 (0.8); estimated treatment difference: 0.07% (95% confidence interval [CI]: -0.06; 0.21) confirmed non-inferiority. At W26 and W38, target HbA1c achievement, and mean fasting and postprandial glucose were similar across groups. At W38, more subjects achieved target HbA1c without hypoglycaemia with IDegAsp (22.5%) than with IGlar U100 + IAsp (21.1%), with significantly fewer nocturnal episodes (W0-W38, estimated rate ratio: 0.61 [95% CI: 0.40; 0.93]). Safety profiles were similar across treatment groups throughout.

CONCLUSIONS: IDegAsp OD/BID are effective treatment intensification options versus multiple injection basal-bolus therapies, achieving similar glycaemic control, with significantly less nocturnal hypoglycaemia.

207: Poudel RR, Kumar VS, Tiwari V, Subramani S, Khan SA. Factors affecting compliance to hospital visit among clubfoot patients: A cross-sectional study from a tertiary referral clubfoot clinic in the developing country. *J Orthop Surg (Hong Kong)*. 2019 Jan-Apr;27(1):2309499019825598. doi: 10.1177/2309499019825598. PubMed PMID: 30744526.

PURPOSE:: Ensuring compliance to treatment protocol, especially regular visit to treating facility, is an important aspect of clubfoot management. However, the factors affecting compliance to follow-up schedule are myriad.

METHODS:: A cross-sectional study was undertaken among caregivers of clubfoot patients from a tertiary referral clubfoot clinic in a developing country. Hospital records were reviewed to collect demographic data and subjects were classified as either "regular" or "irregular" if they missed ≤ 3 and > 3 scheduled hospital visits, respectively. Various factors that could affect compliance such as family size, number of children, literacy of caregiver, occupation of breadwinner, and time taken to travel to hospital were studied. Caregivers were probed regarding the reason for their irregularity.

RESULTS:: A total of 238 patients were included, of which 138 formed the "regular" group and the rest 100 formed the "irregular" group. Patients in the regular group were significantly younger (mean age 43.8 months) compared to the irregular group (59.8 months; $p = 0.001$). The mean follow-up period in the regular group was 28.1 months and in the irregular group was 33.8 months. On univariate analysis, age, duration of follow-up, and transport duration were found to be significant between the two groups. However, multivariate analysis revealed that female children with clubfoot are more likely to be irregular as compared to males ($p = 0.038$).

CONCLUSION:: In a developing country setting, higher age and being a female child are associated with irregularity to hospital visit protocol. At clubfoot clinics, identifying these children and counseling their caregivers might improve compliance.

208: Prabhakaran D, Ajay VS, Tandon N. Strategic Opportunities for Leveraging Low-cost, High-impact Technological Innovations to Promote Cardiovascular Health in India. *Ethn Dis*. 2019 Feb 21;29(Suppl 1):145-152. doi: 10.18865/ed.29.S1.145. eCollection 2019. PubMed PMID: 30906163; PubMed Central PMCID: PMC6428188.

Accelerated epidemiological transition in India over the last 40 years has resulted in a dramatic increase in the burden of cardiovascular diseases and the related risk factors of diabetes and hypertension. This increase in disease burden has been accompanied by pervasive health disparities associated with low disease detection rates, inadequate awareness, poor use of evidence-based interventions, and low adherence rates among patients in rural regions in India and those with low socioeconomic status. Several research groups in India have developed innovative technologies and care-delivery models for screening, diagnosis, clinical management, remote-monitoring, self-management, and rehabilitation for a range of chronic conditions. These innovations can leverage advances in sensor technology, genomic tools, artificial intelligence, big-data analytics, and so on, for improving access to and delivering quality and affordable personalized medicine in primary care. In addition, several health technology start-ups are entering this booming market that is set to grow rapidly. Innovations outside biomedical space (eg, protection of traditional wisdom in diet, lifestyle, yoga) are equally important and are part of a comprehensive solution. Such low-cost, culturally tailored, robust innovations to promote health and reduce disparities require partnership among multi-sectors including academia, industry, civil society, and health systems operating in a conducive policy environment that fosters adequate public and private investments. In this article, we present the unique opportunity for India to use culturally tailored, low-cost, high-impact technological innovations and strategies to ameliorate the perennial challenges of social, policy, and environmental challenges including poverty, low educational attainment, culture, and other socioeconomic factors to promote cardiovascular health and advance

health equity.

209: Prajapati B, Fatma M, Maddhesiya P, Sodhi MK, Fatima M, Dargar T, Bhagat R, Seth P, Sinha S. Identification and epigenetic analysis of divergent long non-coding RNAs in multilineage differentiation of human Neural Progenitor Cells. *RNA Biol.* 2019 Jan;16(1):13-24. doi: 10.1080/15476286.2018.1553482. Epub 2018 Dec 27. PubMed PMID: 30574830; PubMed Central PMCID: PMC6380324.

Long non-coding RNAs have emerged as an important regulatory layer in biological systems. Of the various types of lncRNAs, one class (designated as divergent RNAs/XH), which is in head-to-head overlap with the coding genes, has emerged as a critical biotype that regulates development and cellular differentiation. This work aimed to analyze previously published data on differential expression, epigenetic and network analysis in order to demonstrate the association of divergent lncRNAs, a specific biotype with the differentiation of human neural progenitor cells (hNPCs). We have analyzed various available RNAseq databases that address the neuronal and astrocytic differentiation of hNPCs and identified differentially expressed lncRNAs (DELs) during cell-fate determination. Key DELs identified from the databases were experimentally verified by us in our in-vitro hNPC differentiation system. We also analyzed the change in promoter activity using ChIP-seq datasets of the histone markers H3K4me3 (activation) and H3K27me3 (inactivation) of these DELs. Additionally, we explored the change in the euchromatinization state of DELs (by analyzing DNase-seq data) during lineage-specific differentiation of hNPCs and performed their network analysis. We were able to identify differences between neuronal and astrocytic differentiation of hNPCs at the level of divergent DELs epigenetic markers, DNAase hypersensitive sites and gene expression network. Divergent lncRNAs are more involved in neuronal rather than astrocytic differentiation, while the sense downstream lncRNA biotype appears to be more involved in astrocytic differentiation. By studying the lncRNA involvement of distinct biotypes, we have been able to indicate the preferential role of a particular biotype during lineage-specific differentiation.

210: Prakash P, Ramachandran R, Tandon N, Kumar R. Changes in blood pressure, blood sugar, and quality of life in patients undergoing pheochromocytoma surgery: a prospective cohort study. *Indian J Urol.* 2019 Jan-Mar;35(1):34-40. doi: 10.4103/iju.IJU_190_18. PubMed PMID: 30692722; PubMed Central PMCID: PMC6334590.

Introduction: Pheochromocytoma surgery is associated with significant hemodynamic and metabolic changes that require post-operative monitoring. We prospectively evaluated the trends of blood pressure, blood sugar, body mass index (BMI), and quality of life (QoL) changes in a cohort of patients undergoing pheochromocytoma surgery to determine the minimum duration of monitoring and assess factors that could predict these changes.

Materials and Methods: Consecutive patients undergoing surgery for pheochromocytoma over a 20-month period were included in this ethics review board-approved, prospective cohort study. Blood pressure and sugar levels were serially monitored using a fixed protocol in the perioperative period and subsequently at 3 months after surgery. BMI and QoL (using World Health Organization Quality of Life [WHOQOL-BREF] questionnaire) were recorded at baseline and 3 months. Changes were compared and assessed for the predictive factors.

Results: Twenty-six patients undergoing 31 procedures were included in the study of whom 8 (30%) developed hypotension and 4 (15%) developed hypoglycemia after surgery. All hypotension episodes occurred within 6 hours of surgery. However, while 3 of the 4 patients who developed hypoglycemia manifest in the first 4 h after surgery, one occurred after 12 h. Occurrence of hypotension correlated with preoperative 24-h urinary vanillylmandelic acid (VMA) levels ($P = 0.02$) and the total daily dose of prazosin ($P = 0.04$). Out of 21 hypertensive patients, 7 (33%) had persistent hypertension (HTN) at 3 months and this was associated with age ($P = 0.04$) and diabetes mellitus (DM) at presentation ($P = 0.04$). Among six diabetic patients, 1 (16%) had persistent DM. There was significant increase in the BMI ($P < 0.0001$) and in WHOQOL-BREF scores postoperatively.

Conclusions: Hypotension occurs in 30% patients and hypoglycemia in 15% after

pheochromocytoma surgery. Hypotension occurs immediately but hypoglycemia may manifest upto 12h after surgery. Older, diabetic patients are more likely to have persistent HTN. Surgery results in increase in BMI and improvement in QoL.

211: Pujari A, Agarwal D, Kumar Behera A, Bhaskaran K, Sharma N. Pathomechanism of iris sphincter tear. *Med Hypotheses*. 2019 Jan;122:147-149. doi: 10.1016/j.mehy.2018.11.013. Epub 2018 Nov 22. PubMed PMID: 30593400.

Traumatic iris sphincter tear has been thought to occur secondary to anteroposterior compression of the globe with defined forces lead to equatorial expansion and active pull along the corneoscleral junction and sphincter tear. However, here in this report, we elaborate the additional forces involved in the traumatic rupture of the sphincter pupillae muscle. During the anteroposterior compressive forces along the globe, the corneal deformation beyond certain limits leads to the development of sudden displacement forces within the anterior chamber. Aqueous within it which is incontinuous circulation with a posterior narrow pupillary aperture as its entrance, find the path of least resistance that is along the pupillary orifices leading to anexpulsive drive to displace the fluid through this small aperture. During this process, the horizontally oriented mechanical stretching forces appear to be the main cause of pupillary sphincter tear.

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212: Puri I, Bhatia R, Vibha D, Singh MB, Padma MV, Aggarwal P, Prasad K. Stroke-related education to emergency department staff: An acute stroke care quality improvement initiative. *Neurol India*. 2019 Jan-Feb;67(1):129-133. doi: 10.4103/0028-3886.253636. PubMed PMID: 30860110.

Background: Acute ischemic stroke therapy is time sensitive, and optimum treatment is missed due to pre-hospital and/or in-hospital delay.
Materials and Methods: A prospective observational (before and after) study was conducted for 1 year. The study period was defined as phase-I or pre-education phase, phase-II or immediate post-education phase, and phase-III or delayed post-education phase, with each phase lasting for 4 months. All consecutive stroke patients presenting within 12 hours of stroke onset were enrolled. Baseline and outcome data including acute stroke care quality matrices and functional outcomes were collected.

Results: A total of 264 patients were enrolled. All acute stroke care quality matrices improved significantly ($P \leq 0.01$) with a median door to imaging time (DTI) of 114, 35, and 47 minutes in the three phases consecutively. In phase-II, proportions of patients imaged within 25 minutes of arrival increased by 35%. Mean door to needle (DTN) time were 142 ± 49.7 , 63.7 ± 25.1 , and 83.9 ± 38.1 minutes in the three consecutive phases. Patients with DTN < 60 minutes of arrival increased by 63%. Modified Rankin score (mRS) at 3 months improved significantly in all ischemic stroke patients ($P = 0.04$) and patients with mRS of 0-2 increased by 22%.

Conclusions: Stroke education to emergency department (ED) staff is an effective method to improve acute stroke care.

213: R S R, Dinachandra K, Bhanot A, Unisa S, Menon GT, Agrawal N, Bhatia V, Ruikar M, Daniel A, Bhattacharjee S, Parhi RN, Sachdev HPS, Gope RK, Wagt A, Sethi V. Context for layering women's nutrition interventions on a large scale poverty alleviation program: Evidence from three eastern Indian states. *PLoS One*. 2019 Jan 22;14(1):e0210836. doi: 10.1371/journal.pone.0210836. eCollection 2019. PubMed PMID: 30668595; PubMed Central PMCID: PMC6342298.

Over 70 million women of reproductive age are undernourished in India. Most poverty alleviation programs have not been systematically evaluated to assess impact on women's empowerment and nutrition outcomes. National Rural Livelihoods Mission's poverty alleviation and livelihoods generation initiative is an opportune platform to layer women's nutrition interventions being tapped by project Swabhimaan in three eastern Indian states-Bihar, Chhattisgarh and Odisha. A cross-sectional baseline survey covering 8755 mothers of children under-two

years of age, one of the three primary target groups of program are presented. Standardized questionnaire was administered and anthropometric measurements were undertaken from October 2016 to January 2017. 21 indicators on women's empowerment, Body Mass Index and Mid-upper Arm Circumference for nutrition status, food insecurity indicators as per the Food Insecurity Experience Scale and selected indicators for assessing women's access to basic health services were included. National Rural Livelihoods Mission operates in contexts with stark social and gender inequalities. Self-help group members exhibited better control on financial resources and participation in community activities than non-members. Using Body Mass Index, at least 45% mothers were undernourished irrespective of their enrolment in self-help groups. Higher proportion of self-help group members (77%-87%) belonged to food insecure households than non-members (66%-83%). Proportion of mothers reporting receipt of various components of antenatal care service package varied from over 90% for tetanus toxoid vaccination to less than 10% for height measurement. Current use of family planning methods was excruciatingly low (8.2%-32.4%) in all states but positively skewed towards self-help group members. Participation in monthly fixed day health camps was a concern in Bihar. Layering women's nutrition interventions as stipulated under Swabhimaan may yield better results for women's empowerment and nutrition status under National Rural Livelihoods Mission. While this opportunity exists in all three states, Bihar with a higher proportion of matured self-help groups offers more readiness for Swabhimaan implementation.

214: Rahman S, Archana A, Jan AT, Dutta D, Shankar A, Kim J, Minakshi R. Molecular Insights Into the Relationship Between Autoimmune Thyroid Diseases and Breast Cancer: A Critical Perspective on Autoimmunity and ER Stress. *Front Immunol.* 2019 Mar 1;10:344. doi: 10.3389/fimmu.2019.00344. eCollection 2019. Review. PubMed PMID: 30881358; PubMed Central PMCID: PMC6405522.

The etiopathologies behind autoimmune thyroid diseases (AITDs) unravel misbehavior of immune components leading to the corruption of immune homeostasis where thyroid autoantigens turn foe to the self. In AITDs lymphocytic infiltration in the thyroid shows up a deranged immune system charging the follicular cells of the thyroid gland (thyrocytes) leading to the condition of either hyperthyroidism or hypothyroidism. The inflammation in AITDs consistently associate with ER function due to which disturbances in the ER protein homeostasis leads to unfolded protein response (UPR) that promotes pathogenesis of autoimmunity. The roles of ER stress in the instantaneous downregulation of MHC class I molecules on thyrocytes and the relevance of IFN γ in the pathogenesis of AITD has been well-documented. Thyroglobulin being the major target of autoantibodies in most of the AITDs is because of its unusual processing in the ER. Autoimmune disorders display a conglomeration of ER stress-induced UPR activated molecules. Several epidemiological data highlight the preponderance of AITDs in women as well as its concurrence with breast cancer. Both being an active glandular system displaying endocrine activity, thyroid as well as breast tissue show various commonalities in the expression pattern of heterogenous molecules that not only participate in the normal functioning but at the same time share the blame during disease establishment. Studies on the development and progression of breast carcinoma display a deranged and uncontrolled immune response, which is meticulously exploited during tumor metastasis. The molecular crosstalks between AITDs and breast tumor microenvironment rely on active participation of immune cells. The induction of ER stress by Tunicamycin advocates to provide a model for cancer therapy by intervening glycosylation. Therefore, this review attempts to showcase the molecules that are involved in feeding up the relationship between breast carcinoma and AITDs.

215: Rai V, Bose S, Saha S, Kumar V, Chakraborty C. Delineating metabolic dysfunction in cellular metabolism of oral submucous fibrosis using $(1)H$ nuclear magnetic resonance spectroscopy. *Arch Oral Biol.* 2019 Jan;97:102-108. doi: 10.1016/j.archoralbio.2018.10.016. Epub 2018 Oct 21. PubMed PMID: 30384150.

OBJECTIVE: To delineate the metabolism involved in oral submucous fibrosis progression towards carcinogenesis by $1H$ nuclear magnetic resonance spectroscopy.

METHODS: The proposed study was designed using ¹H-NMR by comparing the metabolites in the serum sample of oral submucous fibrosis (n=20) compared to the normal group (n=20) using ¹H nuclear magnetic resonance spectroscopy. Various statistical analysis like multivariate statistical analysis, Principle component analysis, Partial least squares Discriminant Analysis, Hierarchical cluster analysis was applied to analyze potential serum metabolites.

RESULTS: The results generated from the principle component analysis, partial least squares discriminant analysis and hierarchical cluster analysis are sufficient to distinguish between oral submucous fibrosis group and normal group. A total of 15 significant metabolites associated with main pathways were identified, which correlated with the progression of cancer. Up-regulation of glucose metabolism-related metabolites indicated the high energy demand due to enhanced cell division rate in the oral submucous fibrosis group. A significant increase in lipid metabolism-related metabolites revealed the reprogramming of the fatty acids metabolic pathway to fulfilling the need for cell membrane formation in cancer cells. On the other hand, metabolites related to choline phosphocholine, the metabolic pathway was also altered.

CONCLUSION: Our findings could identify the differentiating metabolites in the oral submucous fibrosis group. Significant alteration in metabolites in the oral submucous fibrosis group exhibited deregulation in metabolic events. The findings reported in the study can be beneficial to further explain the molecular aspects that lead to the progression of oral submucous fibrosis towards carcinogenesis.

216: Rajbhandari H, Joshi S, Malakar S, Paudel P, Jain P, Uppadaya K, Singh M, Patterson V. Epilepsy field workers, a smartphone application and telephone telemedicine: Safe and effective epilepsy care in rural Nepal. *Seizure*. 2019 Jan;64:54-58. doi: 10.1016/j.seizure.2018.12.005. Epub 2018 Dec 10. PubMed PMID: 30562653.

PURPOSE: Most people with epilepsy live in low- or middle-income countries (LMICs) where there are relatively few doctors. Over 50% of people with epilepsy in these countries are untreated so other models of care are needed. In this report we evaluate a novel model of care.

METHODS: We trained four residents of Myagdi, a rural district in Nepal as epilepsy field workers (EFWs). They provided epilepsy awareness to their communities. When they identified someone with possible epilepsy they used a smartphone application (app) to determine the probability score for an episode being epileptic and contacted an epilepsy specialist by phone. If the specialist thought treatment was indicated this was arranged by the EFW. We recorded mortality, change of diagnosis at face-to-face consultation and drug-related events as measures of safety. Seizure frequency and general wellbeing were also recorded, and a questionnaire was devised to measure satisfaction.

RESULTS: 112 patients with app scores suggesting epileptic seizures were identified and managed in 18 months, of whom 15 had provoked seizures. Forty-three percent of epilepsy patients were untreated. At follow-up one had died of a cause other than epilepsy. Diagnostic agreement at face-to-face assessment was 93%. Overall 5% had side-effects of medication. Seizures were stopped in 33% and reduced in 57%. Ninety-six percent of patients preferred this service to travelling to other doctors.

CONCLUSION: This novel service met all criteria of safety and was effective in reducing frequency of seizures. Patients preferred it to conventional services. It should be transferable to other LMICs.

217: Ramaswamy G, Chinnakali P, Selvaraju S, Nair D, Thekkur P, Selvaraj K, Shivashankar R, Singh AR, Vrushabhendra HN. High prevalence of prediabetes among the family members of individuals with diabetes. Findings from targeted screening program from south India. *Diabetes Metab Syndr*. 2019 Jan - Feb;13(1):866-872. doi: 10.1016/j.dsx.2018.12.001. Epub 2018 Dec 11. PubMed PMID: 30641823.

AIM: We aimed to screen for prediabetes, diabetes and other cardiovascular risk factors among family members of people with diabetes registered for care in a primary health centre in South India.

METHODS: During 2017-2018, we screened eligible family members of individuals with diabetes at their homes. We measured fasting capillary blood glucose (FCBG);

for those with FCBG \geq 126mg/dl, we confirmed the diagnosis of diabetes with fasting plasma glucose (FPG). We defined prediabetes as FCBG between 100 and 125mg/dl; diabetes as both FCBG and FPG \geq 126mg/dl. We assessed non-communicable disease risk factors using WHO STEPS questionnaire.

RESULTS: Of total 884 participants, 873 (99%) underwent screening; 280 (32%) had prediabetes, and 19 (2.2%) were confirmed with diabetes. Of newly diagnosed, 17 (90%) were initiated on treatment. Of 873 participants, 180 (20.6%) were newly diagnosed with hypertension. Of the total, 7.3%, 5.2% and 16% reported tobacco use, alcohol use and high salt intake respectively. Nearly half (48%) had overweight.

CONCLUSION: Though the yield for diabetes is modest (3%), the house to house approach was able to screen 99% of eligible population. High prevalence of prediabetes and undiagnosed hypertension emphasize the need for screening and life style modifications.

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218: Ranjan A, Jamshed N, Aggarwal P, Upadhyay V. Fasciculating toxicity. *Am J Emerg Med.* 2019 Apr;37(4):798.e1-798.e2. doi: 10.1016/j.ajem.2019.01.033. Epub 2019 Jan 21. PubMed PMID: 30686539.

Organophosphorus (OP) compound poisoning with suicidal intent is common. It is one of the frequent cause for admission to hospital Emergencies and intensive care units in our region. We describe here a case of 19-year old girl who presented to the Emergency Department with atypical features of OP poisoning. She had perioral, tongue and lower limb fasciculations along with generalized muscle weakness with no or minimal muscarinic effects. OP poisoning with isolated nicotinic receptor mediated effect is often reported in children but in adult it is extremely rare. Based on history and clinical suspicion of nicotinic receptor mediated effect of OP, she was given intravenous atropine along with other supportive treatment. Patient got completely recovered from fasciculations and her motor weakness improved after 6h of atropine therapy. Emergency physician should keep a high index of suspicion of isolated nicotinic and ganglionic mediated effect of OP and a trial of atropine should be given to the patient.

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219: Ray A, Bharath, Sinha S, Paul SS. A smartphone comes to the rescue during tracheostomy. *Crit Care.* 2019 Jan 24;23(1):25. doi: 10.1186/s13054-019-2324-x. PubMed PMID: 30678695; PubMed Central PMCID: PMC6346568.

220: Razik A, Das CJ, Sharma S. Angiomyolipoma of the Kidneys: Current Perspectives and Challenges in Diagnostic Imaging and Image-Guided Therapy. *Curr Probl Diagn Radiol.* 2019 May - Jun;48(3):251-261. doi: 10.1067/j.cpradiol.2018.03.006. Epub 2018 Mar 20. Review. PubMed PMID: 29685402.

Angiomyolipomas (AML) are benign tumors of the kidneys frequently encountered in radiologic practice in large tertiary centers. In comparison to renal cell carcinomas (RCC), AML are seldom treated unless they are large, undergo malignant transformation or develop complications like acute hemorrhage. The common garden triphasic (classic) AML is an easy diagnosis, however, some variants lack macroscopic fat in which case the radiologic differentiation from RCC becomes challenging. Several imaging features, both qualitative and quantitative, have been described in differentiating the 2 entities. Although minimal fat AML is not entirely a radiologic diagnosis, the suspicion raised on imaging necessitates sampling and potentially avoids an unwanted surgery. Recently a new variant, epitheloid AML has been described which often has atypical imaging features and is at a higher risk for malignant transformation. Apart from the diagnosis, the radiologist also needs to convey information regarding nephrometric scores which help in surgical decision-making. Recently, more and more AMLs are managed with selective arterial embolization and percutaneous ablation, both of which are associated with less morbidity when compared to surgery. The purpose of this article is to review the imaging and pathologic features of classic AML as well as the differentiation of minimal fat AML from RCC. In addition, an overview of

nephrometric scoring and image-guided interventions is also provided.

221: Razik A, Madhusudhan KS, Aggarwal A, Panwar R, Srivastava DN. Gastrointestinal Stromal Tumor of the Jejunum With Active Bleeding Demonstrated on Dual-Energy MDCT Angiography: A Case Report. *Curr Probl Diagn Radiol*. 2019 May - Jun;48(3):298-301. doi: 10.1067/j.cpradiol.2017.10.008. Epub 2017 Oct 31. PubMed PMID: 29169676.

Gastrointestinal stromal tumor (GIST) is the most common mesenchymal tumor of the gastrointestinal tract and may occasionally present with acute gastrointestinal bleed (GIB). Multidetector computed tomography (MDCT) angiography is extremely useful in demonstrating the tumor as well as the presence of active hemorrhage, thereby guiding subsequent interventional or surgical management. We report a case of a 38-year-old man who presented with acute-onset melena and compensated shock, whose source of bleed remained elusive on endoscopy. MDCT angiography performed on a dual-energy scanner showed a jejunal tumor with active intraluminal contrast extravasation. The tumor was subsequently resected and the patient did well on follow-up. This was one of the few instances when MDCT angiography demonstrated active bleeding in a GIST and the first such case demonstrated on a dual-energy scanner.

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222: Reethesh SR, Ranjan P, Arora C, Kaloiya GS, Vikram NK, Dwivedi SN, Jyotsna VP, Soneja M. Development and Validation of a Questionnaire Assessing Knowledge, Attitude, and Practices about Obesity among Obese Individuals. *Indian J Endocrinol Metab*. 2019 Jan-Feb;23(1):102-110. doi: 10.4103/ijem.IJEM_487_18. PubMed PMID: 31016163; PubMed Central PMCID: PMC6446687.

Aim: The objective of this study was to develop and validate a knowledge, attitude, and practice (KAP) questionnaire about obesity among obese individuals. **Materials and Methods:** The questionnaire was developed following a standardized protocol that consisted of literature review, focused group discussions, and expert opinion. A cross-sectional survey on 100 obese individuals was carried out to validate the tool. Exploratory factor analysis was performed, using principal component with varimax rotation, to establish the construct validity of the questionnaire. Internal consistency of the questionnaire was tested using Cronbach's α coefficient.

Results: KAP questionnaire with 42 items categorized under three domains knowledge, attitude, and practices was developed. The KAP sections have 14, 15, and 13 items, respectively. Independent Cronbach's α for KAP domains were 0.75, 0.75, and 0.63, respectively, indicating good internal consistency.

Conclusion: The developed questionnaire will be helpful in achieving better understanding of the patients' KAP about obesity. It has satisfactory validity and good internal consistency.

223: Renne B, Radic J, Agrawal D, Albrecht B, Bonfield CM, Cohrs G, Davis T, Gupta A, Hebb ALO, Lamberti-Pasculli M, Knerlich-Lukoschus F, Lindsay S, McNeely PD, Pillai S, Rai HIS, Sborov KD, Vitali A, Walling S, Woerdeman P, Suryaningtyas W, Cochrane D, Singhal A, Steinbok P. Cerebellar mutism after posterior fossa tumor resection in children: a multicenter international retrospective study to determine possible modifiable factors. *Childs Nerv Syst*. 2019 Jan 18. doi: 10.1007/s00381-019-04058-7. [Epub ahead of print] PubMed PMID: 30659354.

PURPOSE: A preliminary survey of pediatric neurosurgeons working at different centers around the world suggested differences in clinical practice resulting in variation in the risk of pediatric cerebellar mutism (CM) and cerebellar mutism syndrome (CMS) after posterior fossa (PF) tumor resection. The purposes of this study were (1) to determine the incidence and severity of CM and CMS after midline PF tumor resection in children treated at these centers and (2) to identify potentially modifiable factors related to surgical management (rather than tumor biology) that correlate with the incidence of CM/CMS.

METHODS: Attending pediatric neurosurgeons at British Columbia's Children's Hospital (BCCH) and neurosurgeons who completed a pediatric neurosurgery

fellowship at BCCH were invited to provide data from the center where they currently practiced. Children aged from birth to less than 18 years who underwent initial midline PF tumor resection within a contemporary, center-selected 2-year period were included. Data was obtained by retrospective chart and imaging review. Modifiable surgical factors that were assessed included pre-resection surgical hydrocephalus treatment, surgical positioning, ultrasonic aspirator use, intraoperative external ventricular drain (EVD) use, surgical access route to the tumor, and extent of resection. CM was defined as decreased or absent speech output postoperatively and CMS as CM plus new or worsened irritability.

RESULTS: There were 263 patients from 11 centers in 6 countries (Canada, Germany, the Netherlands, India, Indonesia, and the USA). Median age at surgery was 6 years (range <1 to 17 years). The overall incidence of postoperative CM was 23.5% (range 14.7-47.6% for centers with data on ≥ 20 patients). The overall incidence of CMS was 6.5% (range 0-10.3% for centers contributing data on ≥ 20 patients). A multivariate logistic regression on the full data set showed no significant association between pre-resection surgical hydrocephalus treatment, prone position, ultrasonic aspirator use, EVD use, telovelar approach, complete or near total resection, or treating center and either postoperative CM or CMS.

CONCLUSIONS: While there was variation in surgical management of midline PF tumors among centers participating in this study, the factors in management that were examined did not predict postoperative CM or CMS.

224: Rout G, Kedia S, Nayak B, Yadav R, Das P, Acharya SK, Gunjan D, Singh V, Mahanta M, Gupta S, Aggarwal S, Shalimar. Controlled Attenuation Parameter for Assessment of Hepatic Steatosis in Indian Patients. *J Clin Exp Hepatol*. 2019 Jan-Feb;9(1):13-21. doi: 10.1016/j.jceh.2018.02.010. Epub 2018 Mar 14. PubMed PMID: 30765934; PubMed Central PMCID: PMC6363949.

Background/Aims: The gold standard method for measurement of hepatic steatosis is liver histology. Controlled Attenuation Parameter (CAP) can measure hepatic steatosis non-invasively. We aimed to assess the accuracy of CAP for detection of hepatic steatosis.

Methods: A total of 462 patients (May 2012-January 2017)-89 non-alcoholic fatty liver disease, 182 chronic hepatitis B, 88 chronic hepatitis C and 103 patients with other etiologies who underwent simultaneous liver biopsy and CAP estimation using Transient Elastography (TE) were included. Steatosis was graded as S0: steatosis in 0-5% of hepatocytes, S1: 6-33%, S2: 34-66% and S3: 67-100%. Receiver Operating Characteristic (ROC) curves were plotted to evaluate the accuracy of CAP in detecting hepatic steatosis. Predictors of CAP were assessed by multivariate linear regression model.

Results: The mean age \pm SD was 33.8 \pm 11.6 years; 296 (64.1%) were males. On liver histology, steatosis grades S0, S1, S2 and S3 were seen in 331 (71.6%), 74 (16.0%), 39 (8.4%) and 18 (3.9%), respectively. The median CAP (IQR) values for S0, S1, S2, and S3 steatosis were 206 (176-252) dB/m, 295 (257-331) dB/m, 320 (296-356) dB/m, and 349 (306-363) dB/m, respectively. For estimation of $\geq S1$, $\geq S2$, and $\geq S3$ using CAP, AUROC were 0.879, 0.893, and 0.883, respectively. In multivariate analysis, only BMI (OR 1.18; CI, 1.11-1.26, $P < 0.001$) and grade of hepatic steatosis (grade 1, OR, 3.94; 95% CI, 1.58-9.84, $P = 0.003$; grade 2, OR 42.04; 95% CI, 4.97-355.31, $P = 0.001$ and grade 3, OR 35.83; 95% CI 4.31-297.61, $P = 0.001$) independently predicted CAP.

Conclusions: CAP detects hepatic steatosis with good accuracy in Indian patients with various etiologies.

225: Sabir M, Takkar B, Joshi R, Rathi A. Nodular scleritis with strongly positive serum rheumatoid factor: forme frustÃ© rheumatoid arthritis sans arthritis. *BMJ Case Rep*. 2019 Jan 28;12(1). pii: bcr-2018-227655. doi: 10.1136/bcr-2018-227655. PubMed PMID: 30696649.

226: Sadiq M, Nayak M, Farheen A, Digge V. An Unusual Case of Huge Tophaceous Pseudogout Mimicking as a Tumor-Like Lesion around the Ankle Joint: A Case Report and Literature Review. *Case Rep Orthop*. 2019 Feb 25;2019:9617184. doi: 10.1155/2019/9617184. eCollection 2019. PubMed PMID: 30931157; PubMed Central PMCID: PMC6410423.

Pseudogout or calcium pyrophosphate dihydrate deposition disease (CPPD) primarily affects the joints and the periarticular tissues. Tophaceous or tumoral pseudogout is a rare form of this disease which is seen around the joints of extremities. It can be misdiagnosed as a neoplastic condition because of its clinicoradiological similarities, and thus, a proper histopathological examination is indispensable. We report one such case of extra-articular deposition of the CPPD crystals in a 65-year-old man who presented with an asymptomatic swelling around the left ankle. Radiographs showed a dense homogenous calcification, and FNAC revealed dense calcium deposits with numerous rhomboid-shaped crystals. It was managed by en bloc excision, and postoperative biopsy reports confirmed the diagnosis. Possibility of pseudogout should be kept as a differential diagnosis in patients presenting with calcified soft tissue swellings and should be subjected to a detailed histopathological examination for confirmation.

227: Sagar R, Patra BN, Patil V. Clinical Practice Guidelines for the management of conduct disorder. *Indian J Psychiatry*. 2019 Jan;61(Suppl 2):270-276. doi: 10.4103/psychiatry.IndianJPsychiatry_539_18. PubMed PMID: 30745702; PubMed Central PMCID: PMC6345126.

228: Sahay P, Singhal D, Nagpal R, Maharana PK, Farid M, Gelman R, Sinha R, Agarwal T, Titiyal JS, Sharma N. Pharmacologic therapy of mycotic keratitis. *Surv Ophthalmol*. 2019 May - Jun;64(3):380-400. doi: 10.1016/j.survophthal.2019.02.007. Epub 2019 Feb 22. Review. PubMed PMID: 30797882.

Mycotic keratitis continues to be an important cause of corneal blindness, especially in tropical and subtropical countries. The prognosis is poor compared with many other forms of keratitis because of the lack of effective antifungal drugs. The currently available antifungal drugs suffer from multiple drawbacks such as poor ocular penetration, unpredictable bioavailability, and adverse effects associated with systemic medications. Over the last decade, several new drugs and drug-delivery systems have been introduced in an attempt to improve the treatment outcomes. Thorough knowledge of the currently available antifungal drugs, their spectrum of action, and associated adverse effects is essential to deal with cases of mycotic keratitis. We discuss the pharmacologic properties and clinical use of the currently available antifungal drugs.

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229: Sahay P, Shaji KR, Maharana PK, Titiyal JS. Spontaneous anterior dislocation of lens in a case of ectopia lentis et pupillae: a rare entity treated by a novel technique of microscope integrated optical coherence tomography (MIOCT) guided intralenticular lens aspiration. *BMJ Case Rep*. 2019 Jan 18;12(1). pii: bcr-2018-227047. doi: 10.1136/bcr-2018-227047. PubMed PMID: 30661044.

A 7-year-old girl presented with watering and redness in the left eye for 2 months. Her parents reported poor vision in both eyes for 4 years. Visual acuity was finger counting at 1 m and finger counting close to face in the right and left eyes, respectively. Slit lamp examination of the right eye revealed corectopia, aphakia in the pupillary area, temporally subluxated clear crystalline lens, persistent pupillary membrane, irido-hyaloidal adhesion and poorly dilating pupil. Left eye revealed central corneal oedema with descemet scarring, anteriorly dislocated clear crystalline lens with lenticulo-corneal touch. Ultrasound examination of the left eye was normal. Hence a diagnosis of ectopia lentis et pupillae with left eye spontaneous anterior dislocation of the lens along with corneal decompensation was made. The child underwent microscope integrated intraoperative optical coherence tomography guided intralenticular lens aspiration with optical iridectomy in the left eye. Postoperative visual rehabilitation was done with aphakic glasses.

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230: Sahay P, Singhal D, Maharana PK, Titiyal JS. Preloaded Descemet Membrane Endothelial Keratoplasty Donor Tissue: Surgical Technique and Early Clinical Results. *Cornea*. 2019 Jan;38(1):e1. doi: 10.1097/ICO.0000000000001787. PubMed PMID: 30346345.

DOI: 10.4103/ijdv1.IJDVL_760_17
PMID: 30058570 [Indexed for MEDLINE]

231: Sahoo AK, Yadav S, Sharma VK, Parihar AS, Vyas S, Gupta S. Safety and efficacy of autologous noncultured dermal cell suspension transplantation in the treatment of localized facial volume loss: A pilot study. *Indian J Dermatol Venereol Leprol*. 2019 Jan-Feb;85(1):44-50. doi: 10.4103/ijdv1.IJDVL_760_17. PubMed PMID: 30058570.

Background: Available options for correction of facial volume loss, such as synthetic fillers, autologous fat and cultured fibroblasts, have limitations viz. temporary effect and high cost.

Aim: To assess the use of a novel technique, autologous non-cultured dermal cell suspension transplantation, for correction of localized facial volume loss due to inflammatory pathologies.

Methods: It was a pilot study conducted in the Dermatology Outpatient Department, All India Institute of Medical Sciences (AIIMS), New Delhi, India. Autologous non-cultured dermal cell suspension was transplanted in a total of 10 patients, out of which 5 had predominantly dermal loss and the rest had predominantly lipoatrophy. The donor tissue from the gluteal region was digested into a single cell suspension using collagenase-1 and injected into the recipient area. The outcome was assessed subjectively by patients and investigators and objectively using ultrasonography. Cell count, viability testing and measurement of mesenchymal stem cells were also done.

Results: On assessment of patients, the median improvement in the predominantly dermal atrophy group at 3 and 6 months was 70% (range: 10-90%) and 80% (range: 0-90%), respectively, and in the predominantly lipoatrophy group, 0% (range: 0-40) and 0% (range: 0-50), respectively. Mean thickness of dermis + subcutis at the baseline was 1.835 mm (range: 0.89-6.04 mm), which increased to 2.912 mm (range: 0.88-7.07 mm, P = 0.03) at 6 months.

Limitations: Our pilot study has some limitations such as small sample size and heterogeneity of the recruited patients.

Conclusions: Autologous non-cultured dermal cell suspension transplantation appears to be safe and effective in localized facial dermal defects because of inflammatory pathologies, but not effective in deeper defects.

232: Sahu A, Patil V, Purkayastha S, Pattanayak RD, Sagar R. Pathways to Care for Patients with Bipolar-I Disorder: An Exploratory Study from a Tertiary Care Centre of North India. *Indian J Psychol Med*. 2019 Jan-Feb;41(1):68-74. doi: 10.4103/IJPSYM.IJPSYM_201_18. PubMed PMID: 30783311; PubMed Central PMCID: PMC6337925.

Introduction: Understanding the pathways to psychiatric care is important from a public health perspective. Only a few Indian studies have focused on this, particularly for severe mental disorders. The present study was planned to assess it in patients with Bipolar-I disorder (BD-I).

Materials and Methods: Sixty-four patients with DSM 5 diagnosis of BD-I and their caregivers were included. A semi-structured interview proforma was used to gather information.

Results: Psychiatrists were the first care provider in 43.8% of the cases, followed by traditional faith healers (32.8%) and general physician/neurologists (17.2%). The median duration of untreated bipolar disorder (DUB) was 21 days (1 day to 152 months). Relatively long DUB (3.5 ± 3.5 years) was found for 17.2% of the sample. The median duration of the first contact with a psychiatrist was 45 days and the interval between the contact with the first care provider and a psychiatrist was 90 days (1 day to 151 months). At the time of first treatment seeking, 64% of patients and caregivers had poor awareness regarding psychiatric treatment.

Conclusions: Patients with BD-I seek help from psychiatrists, faith healers or other medical practitioners for multiple reasons. There is a need to sensitise the community and various service providers about early identification and optimum management of BD-I.

233: Sahu V, Nigam L, Agnihotri V, Gupta A, Shekhar S, Subbarao N, Bhaskar S, Dey S. Diagnostic Significance of p38 Isoforms (p38 α , p38 β , p38 δ , p38 γ) in Head and

Neck Squamous Cell Carcinoma: Comparative Serum Level Evaluation and Design of Novel Peptide Inhibitor Targeting the Same. *Cancer Res Treat*. 2019 Jan;51(1):313-325. doi: 10.4143/crt.2018.105. Epub 2018 May 9. PubMed PMID: 29747487; PubMed Central PMCID: PMC6333999.

PURPOSE: The p38 mitogen-activated protein kinase (MAPKs) play a crucial role in the production of pro-inflammatory cytokines and over-expression of it increase cytokines which promote cancer. Among four isoforms, p38 α has been well studied in head and neck squamous cell carcinoma (HNSCC) and other cancers as a therapeutic target. p38 δ has recently emerged as a potential disease-specific drug target. Elevated serum p38 α level in HNSCC was reported earlier from our lab. This study aims to estimate the levels of p38 MAPK-isoforms in the serum of HNSCC and design peptide inhibitor targeting the same.

Materials and Methods: Levels of p38 MAPK isoforms in the serum of HNSCC and healthy controls were quantified by surface plasmon resonance technology. The peptide inhibitor for p38 MAPK was designed by molecular modeling using Grid-based Ligand Docking with Energetics tools and compared with known specific inhibitors.

RESULTS: We have observed highly elevated levels of all four isoforms of p38 MAPK in serum of HNSCC patients compared to the control group. Further, serum p38 α , p38 β , and p38 δ levels were down regulated after therapy in follow-up patients, while p38 γ showed no response to the therapy. Present study screened designed peptide WYFH as a specific inhibitor against p38 δ . The specific inhibitor of p38 δ was found to have no effect on p38 α due to great structural difference at ATP binding pocket.

CONCLUSION: In this study, first time estimated the levels of p38 MAPK isoforms in the serum of HNSCC. It can be concluded that p38 MAPK isoforms can be a diagnostic and prognostic marker for HNSCC and p38 δ as a therapeutic target.

234: Samala R, Borkar SA, Sharma R, Garg A, Suri A, Gupta D, Kale SS. Effectiveness of preoperative facial nerve diffusion tensor imaging tractography for preservation of facial nerve function in surgery for large vestibular schwannomas: Results of a prospective randomized study. *Neurol India*. 2019 Jan-Feb;67(1):149-154. doi: 10.4103/0028-3886.253631. PubMed PMID: 30860114.

Background: The goal of surgery in case of a large vestibular schwannoma is complete excision of tumor and preservation of facial nerve function. The identification and preservation of facial nerve is very difficult during surgery, particularly in case of large tumors. This prospective randomized study was conducted to find out the effectiveness of preoperative facial nerve diffusion tensor imaging tractography (DTI) to predict location of the nerve and preservation of facial nerve function in surgery for large vestibular schwannomas.

Materials and Methods: In this prospective randomized study, we recruited 100 patients with a large vestibular schwannoma (> 3cm). After initial scrutiny, 94 patients were randomized based on a computer generated chart. In group I, preoperative DTI was done and the operating surgeon was informed about the position of facial nerve preoperatively. In group II, DTI was not done. The facial nerve preservation rates and clinical outcome at follow up was compared between the two groups.

Results: Out of 94 patients, there were 47 patients in group I (DTI group) and 47 patients in group II (Non DTI group). In DTI group, 40 patients were left for comparison after the exclusion criteria was applied. Preoperative DTI predicted that the facial nerve position was concordant with its intraoperative position in 39 patients (97.5% concordance). Facial nerve preservation rates were

statistically significant in group I (DTI group) (P value = 0.002).

Conclusion: The study establishes the role of preoperative DTI tractography for better facial nerve preservation in surgery for large vestibular schwannomas (>3 cm).

235: Santosh V, Sravya P, Gupta T, Muzumdar D, Chacko G, Suri V, Epari S, Balasubramaniam A, Radotra BD, Chatterjee S, Sarkar C, Jalali R. ISNO consensus guidelines for practical adaptation of the WHO 2016 classification of adult diffuse gliomas. *Neurol India*. 2019 Jan-Feb;67(1):173-182. doi: 10.4103/0028-3886.253572. PubMed PMID: 30860119.

Introduction: Recent advances in the molecular biology of adult diffuse gliomas have brought about a paradigm shift in their diagnostic criteria, as witnessed in the World Health Organization (WHO) 2016 guidelines for central nervous system tumors. It is now mandatory to perform several molecular tests to reach a definitive integrated diagnosis in most of the cases. This comes with additional cost and higher turnaround time, which is not always affordable in developing countries like India. In addition, the non-uniform distribution of advanced research and diagnostic testing centers adds to the difficulty.

Methods: The Indian Society of Neuro-oncology (ISNO) multidisciplinary expert panel consisting of neuropathologists, neurosurgeons, and radiation/medical oncologists convened to prepare the national consensus guidelines for approach to diagnosis of adult diffuse gliomas.

Results: Algorithms for arriving at an integrated diagnosis of adult diffuse gliomas predominantly using immunohistochemistry and with minimum possible additional molecular testing were agreed upon, thus addressing the problems of cost, accessibility, and turnaround time. Mandatory and optional tests were proposed for each case scenario.

Conclusion: This document represents the consensus of the various neuro-oncology disciplines involved in diagnosis and management of patients with adult diffuse gliomas. The article reflects a practical adaptation of the WHO recommendations to suit a resource constrained setup.

236: Sarkar S, Lal R, Varshney M, Kumar S, Singh Balhara YP. Can Tramadol be Used for Maintenance Treatment of Opioid Dependence? *Subst Use Misuse*. 2019;54(3):506-513. doi: 10.1080/10826084.2018.1521427. Epub 2018 Nov 5. PubMed PMID: 30395757.

BACKGROUND: Certain limitations of the existing opioid substitution therapies necessitate exploration of other options for maintenance of patients with opioid dependence. This study aimed to present the experience of use of tramadol for long-term treatment of patients with opioid dependence.

METHODS: This was a cross-sectional interview-based observational study conducted in Uttar Pradesh state in India. Patients with opioid dependence who received oral tramadol treatment for a period of more than 6 months were recruited.

Outcome was assessed in terms of self-reported abstinence on tramadol.

RESULTS: A total of 102 participants were recruited in the study, with a mean age of 41.3 years. All the participants were males. Abstinence to extraneous opioids was reported by 58.8% of the sample, and the median dose of tramadol at which abstinence was achieved was 350mg/d. Those who reported to be taking natural opioids (raw opium or poppy husk) at the time of seeking treatment had higher rates of achieving abstinence.

CONCLUSIONS: Tramadol may be a possible option for the maintenance treatment among some opioid-dependent individuals. Further studies are required to establish its efficacy vis-à-vis other medications used in opioid substitution treatment.

237: Satpathy G, Ahmed NH, Nayak N, Tandon R, Sharma N, Agarwal T, Vanathi M, Titiyal JS. Spectrum of mycotic keratitis in north India: Sixteen years study from a tertiary care ophthalmic centre. *J Infect Public Health*. 2019 May - Jun;12(3):367-371. doi: 10.1016/j.jiph.2018.12.005. Epub 2018 Dec 29. PubMed PMID: 30600158.

INTRODUCTION: To analyse the fungal culture results of patients with fungal

keratitis over sixteen years and look for variations in the trends over years and distribution across ages, gender and seasons.

MATERIALS AND METHODS: Clinical and demographic records and microbiology reports of 18,898 patients of fungal keratitis from 2001 to 2016 were analysed.

RESULTS: Overall fungal culture positivity was 21.5%. 67.3% were males and 32.7% were females. Maximum numbers of samples (17.9%) were received from age group 41-50 years, and maximum fungal culture positivity was seen in age group 31-40 years (30.8%). Most common fungus was *Aspergillus* species (31.1%), followed by *Fusarium* species (24.5%), *Alternaria* (10.5%), *Curvularia* (10.2%), *Helminthosporium* (5.7%), *Bipolaris* (5.4%), *Penicillium* (4.5%), *Candida* (4.4%), *Acremonium* (1.2%), *Rhizopus* (1.0%), *Paecilomyces* (0.8%), *Rhodotorula* (0.5%) and *Mucor* (0.2%). Fungal culture positivity and relative frequency of fungi remained almost stable over the study duration, except *Rhodotorula* spp, which showed a rise 2014 onwards. Highest numbers of culture proven fungal keratitis cases were seen in monsoon season.

CONCLUSIONS: To the best of our knowledge, our study is the largest compilation of epidemiological and microbiological features of fungal keratitis, throwing light on important attributes relevant to management of mycotic keratitis patients.

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PMID: 30600158

238: Satyarthee GD, Jagdevan A. Prof. Shokei Yamada: An International Neurosurgeon, Regarded as Father Figure for Adult Tethered Cord Syndrome Management and Dedicated Life for the Advancement of Intracranial Arteriovenous Malformation Surgery. *Asian J Neurosurg.* 2019 Jan-Mar;14(1):341-342. doi: 10.4103/ajns.AJNS_189_18. PubMed PMID: 30937074; PubMed Central PMCID: PMC6417353.

239: Saxena A, Sharma G, Tyagi S, Mourya M, Coshic P, Tiwari PK, Mehra NK, Kanga U. HLA-A*02 repertoires in three defined population groups from North and Central India: Punjabi Khatries, Kashmiri Brahmins and Sahariya Tribe. *HLA.* 2019 Jan;93(1):16-23. doi: 10.1111/tan.13447. Epub 2018 Dec 27. PubMed PMID: 30516033.

The allelic family of HLA-A*02 with a repertoire of approximately 1022 alleles represents the predominant and most heterogeneous group at the HLA-A locus. This remarkable diversity signifies its evolutionary relevance. Its population-specific diversity is attributed to environmental factors and pathogen pressure and can be harnessed in biology and medicine, particularly in disease association and for HLA-based vaccination approaches. We therefore investigated the HLA-A*02 repertoire in two North Indian caste populations, viz Punjabi Khatries (PK, N = 250), Kashmiri Brahmins (KB, N = 160) and a Central Indian tribe Sahariya (ST, N = 100) using Luminex-based high-resolution rSSO method. When required, results were confirmed with high-resolution PCR-SSP and/or next-generation sequencing (NGS). In the three populations evaluated, HLA-A*02 was observed with an overall high phenotypic/allelic frequency, however, A*02 repertoire differed among them. A total of six alleles were observed (A*02:01, *02:03, *02:05, *02:06, *02:07 and *02:11) in the caste groups, compared with four (except *02:05 and *02:07) in the tribals. Our striking observation was the high occurrence of A*02:11 at the repertoire level (80.6% in ST, 39% in PK, 31.8% in KB). Globally, this allele is rare, observed with low frequencies in limited ethnic groups. The primordial A*02:01 allele, representative A*02 allele in most ethnicities was observed as the second predominant allele (PK = 27.3%, KB = 31.8% and ST = 11.9%). Extremely high occurrence of A*02:11 in ST may be representation of ancient Austro-Asiatic genetic pool. In caste populations, the observed A*02 repertoire may be a consequence of natural selection and/or admixture from different populations.

DOI: 10.1111/tan.13447

PMID: 30516033

240: Seth A, Attri AK, Kataria H, Kochhar S, Seth SA, Gautam N. Clinical Profile and Outcome in Patients of Diabetic Foot Infection. *Int J Appl Basic Med Res.* 2019 Jan-Mar;9(1):14-19. doi: 10.4103/ijabmr.IJABMR_278_18. PubMed PMID: 30820414; PubMed Central PMCID: PMC6385536.

Purpose: The aim is to study the clinical profile and outcome of patients presenting with diabetic foot infections (DFI).

Methods: This was a prospective study recruiting patients >18 years of age, with DFI. All patients underwent a detailed history and clinical examination. Patients were classified as per the International Working Group on the Diabetic Foot -IDSA classification. The patients were followed up every month for 3 months. Clinical outcome was studied regarding the rate of amputations, readmissions, and mortality.

Results: There were 65 patients with a mean age of 58.49 ± 11.04 years with male predilection (83.08%). Mean duration of diabetes mellitus was 12.03 ± 6.96 years. Ulcer (92.31%) and discharge (72.31%) were the most common presenting complaints. Monomicrobial growth was present in 36 patients (55.38%). Majority of isolates were Gram-negative (71.43%). The most common isolates were *Escherichia coli* and *Staphylococcus aureus* (28.57% each). Mild, moderate, and severe DFI was present in 40%, 47.69%, and 12.31% of patients, respectively. Severe DFI was associated with poor ulcer healing ($P = 0.02$) and higher number of major amputations ($P < 0.001$). Minor amputations were most commonly associated with moderate and severe DFI. Severe DFI had the highest number of readmissions ($P = 0.04$). Patients undergoing minor amputations had a significant association with area of ulcer ($P < 0.001$).

Conclusion: This study shows the predominance of monomicrobial growth and Gram-negative organisms in diabetic foot patients. With increase in the severity of DFI, there was increased rate of hospital readmissions, amputations (major and minor), and mortality. Dimensions of ulcer may have a bearing on rate of minor amputations.

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PMCID: PMC6385536

PMID: 30820414

Conflict of interest statement: There are no conflicts of interest.

241: Shafneed CH. Gandhi & Health: Award-Winning Essay. *Indian J Med Res.* 2019 Jan;149(Suppl):S153-S157. doi: 10.4103/0971-5916.251673. PubMed PMID: 31070193.

242: Shaikh NF, Kumar V. Hypopigmented fundus in a young male. *Indian J Ophthalmol.* 2019 Jan;67(1):7. doi: 10.4103/ijo.IJO_1834_18. PubMed PMID: 30574882; PubMed Central PMCID: PMC6324091.

243: Shalimar, Sheikh MF, Mookerjee RP, Agarwal B, Acharya SK, Jalan R. Prognostic Role of Ammonia in Patients With Cirrhosis. *Hepatology.* 2019 Jan 31. doi: 10.1002/hep.30534. [Epub ahead of print] PubMed PMID: 30703853.

Ammonia is thought to be central to the pathogenesis of hepatic encephalopathy (HE), but its prognostic role in patients with cirrhosis and acute decompensation is unknown. The aims of this study were to determine the relationship between ammonia levels and severity of HE and its association with organ dysfunction and short-term mortality. We identified 498 patients from two institutions as part of prospective observational studies in patients with cirrhosis. Plasma ammonia levels were measured on admission and Chronic Liver Failure-Sequential Organ Failure Assessment criteria were used to determine the presence of organ failures. The 28-day patient survival was determined. Receiver operating characteristic analysis was used to identify the cutoff points for ammonia

values, and multivariable analysis was performed using the Cox proportional hazard regression model. The 28-day mortality was 43.4%. Plasma ammonia correlated with severity of HE ($P < 0.001$), was significantly higher in nonsurvivors (93 [73-121] versus 67 [55-89] $\mu\text{mol/L}$, $P < 0.001$), and was an independent predictor of 28-day mortality (hazard ratio, 1.009, $P < 0.001$). An ammonia level of 79.5 $\mu\text{mol/L}$ had sensitivity of 68.1% and specificity of 67.4% for predicting 28-day mortality. An ammonia level of ≥ 79.5 $\mu\text{mol/L}$ was associated with a higher frequency of organ failures (liver [$P = 0.004$], coagulation [$P < 0.001$], kidney [$P = 0.004$], and respiratory [$P < 0.001$]). Lack of improvement in baseline ammonia at day 5 was associated with high mortality (70.6%). Conclusion: Ammonia level correlates with not only the severity of HE but also the failure of other organs and is an independent risk factor for mortality; lack of improvement in ammonia level is associated with high risk of death, making it an important biomarker and a therapeutic target.

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PMID: 30703853

244: Sharma A, Pandey NN, Malhi AS, Kumar S. Complex right atrial mass in endomyocardial fibrosis: a diagnostic dilemma. *BMJ Case Rep.* 2019 Jan 4;12(1). pii: e227131. doi: 10.1136/bcr-2018-227131. PubMed PMID: 30612105.

Endomyocardial fibrosis, though a vanishing disease from India, remains an important cause of heart failure in children, adolescents and young adults. It may be complicated with arrhythmias and thromboembolism and is an important cause of mortality and morbidity. Moreover, usual presentation of this condition is in advanced stage with poor prognosis. Ventricular endocardial fibrosis with organised thrombus is the hall mark of this entity. Presence of associated cardiac mass poses a diagnostic challenge. We present one such case of endomyocardial fibrosis, in which a large thrombus was seen adherent to the anterolateral wall of right atrium, posing further risk of thromboembolism with complex management issues.

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DOI: 10.1136/bcr-2018-227131
PMID: 30612105 [Indexed for MEDLINE]

Conflict of interest statement: Competing interests: None declared.

245: Sharma A, Pandey NN, Kumar S. Imaging of coronary artery fistulas by multidetector CT angiography using third generation dual source CT scanner. *Clin Imaging.* 2019 Jan - Feb;53:89-96. doi: 10.1016/j.clinimag.2018.09.019. Epub 2018 Oct 8. PubMed PMID: 30317136.

Coronary artery fistulas are rare cardiac conditions which constitute a subgroup of anomalies of the coronary arteries. Though majority are asymptomatic, they may be associated with high prevalence of late symptoms and complications. Accurate identification of the fistulas, their hemodynamic significance and associated conditions generally influence management strategies. Dual source computed tomographic evaluation is valuable in delineating its precise morphology with identification and characterization of associated anomalies, thereby assisting in mapping the ideal treatment option.

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246: Sharma K, Kumar M, Gandhi R. Effect of Single-Dose Dexmedetomidine on Intraoperative Hemodynamics and Postoperative Recovery during Pediatric

Adenotonsillectomy. *Anesth Essays Res.* 2019 Jan-Mar;13(1):63-67. doi: 10.4103/aer.AER_178_18. PubMed PMID: 31031482; PubMed Central PMCID: PMC6444974.

Background: In children undergoing adenotonsillectomy, smooth recovery from anesthesia without any respiratory compromise and excessive sedation or pain is always desirable. In this placebo-controlled study, we examined the effect of single dose of dexmedetomidine on intraoperative hemodynamics and postoperative recovery profile such as emergence agitation (EA), pain, and sedation in children undergoing adenotonsillectomy.

Methods: Sixty American Society of Anesthesiologists I or II children in the age group of 5-10 years, undergoing adenotonsillectomy were randomly assigned to receive dexmedetomidine 1 µg/kg (Group D) or volume-matched saline (placebo) (Group C), 10 min before induction of anesthesia. Intraoperative heart rate (HR) and mean blood pressure (MBP), duration of surgery, time to extubation, EA using Paediatric Anaesthesia Emergence Delirium (PAED) scale, level of sedation in postanesthesia care unit using Ramsay sedation score (RSS), and postoperative visual analog score (VAS) for pain were recorded and compared.

Results: Dexmedetomidine group had lower HR and stable MBP, compared to the control group ($P < 0.05$). Postoperatively, the agitation score (PAED scale score) was statistically lower in Group D compared to Group C (13.84 ± 1.39 ; median 14 in Group C vs. 9.37 ± 1.33 ; median 9.5 in Group D; $P < 0.001$). All patients in Group C had PAED scale score >12 , while only 6.67% of patients in Group D had PAED scale score of 12. The patients in Group D had higher RSS (2.62 ± 0.49 in Group D vs. 1.60 ± 0.50 , $P = 0.004$); none of the patients were excessively sedated or had RSS >3 . No significant difference was found in VAS score of the groups at all times, except at 0 h ($P = 0.002$). Time to extubation was significantly longer in the dexmedetomidine group (7.70 ± 1.62 min in Group D vs. 5.23 ± 1.91 min in Group C; $P = 0.001$).

Conclusion: Premedication of dexmedetomidine at the dose of 1 µg/kg in children undergoing adenotonsillectomy resulted in favorable effect on intraoperative hemodynamics, significant decrease in postoperative EA without causing any excessive sedation, desaturation, or any other drug-related adverse events.

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PMID: 31031482

Conflict of interest statement: There are no conflicts of interest.

247: Sharma N, Singhal D, Maharana PK, Dhiman R, Shekhar H, Titiyal JS, Agarwal T. Phacoemulsification with coexisting corneal opacities. *J Cataract Refract Surg.* 2019 Jan;45(1):94-100. doi: 10.1016/j.jcrs.2018.09.015. Epub 2018 Nov 30. Review. PubMed PMID: 30509744.

The treatment of choice for cases of corneal opacity with significant cataract is often a triple procedure. However, in certain situations the chances of graft survival are poor, for example in cases with deep vascularization, secondary glaucoma, and healed viral keratitis. Under these circumstances, performing cataract surgery only might improve the visual acuity enough to maintain the patient's day-to-day activities. Performing cataract surgery, especially phacoemulsification, in these cases is challenging. Proper case selection, choosing the right technique, and a thorough idea about the difficulties and methods of tackling such cases is paramount to achieving optimum visual outcomes. In this review, we discuss the case selection and surgical modifications of performing phacoemulsification in cases with coexisting corneal opacities.

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DOI: 10.1016/j.jcrs.2018.09.015

PMID: 30509744

248: Sharma P, Baloda V, Gahlot GP, Singh A, Mehta R, Vishnubathla S, Kapoor K, Ahuja V, Gupta SD, Makharia GK, Das P. Clinical, endoscopic, and histological differentiation between celiac disease and tropical sprue: A systematic review. *J*

Gastroenterol Hepatol. 2019 Jan;34(1):74-83. doi: 10.1111/jgh.14403. Epub 2018 Aug 30. PubMed PMID: 30069926.

BACKGROUND AND AIM: While the prevalence of celiac disease (CD) is increasing globally, the prevalence of tropical sprue (TS) is declining. Still, there are certain regions in the world where both patients with CD and TS exist and differentiation between them is a challenging task. We conducted a systematic review of the literature to find out differentiating clinical, endoscopic, and histological characteristics between CD and TS.

METHODS: Medline, PubMed, and EMBASE databases were searched for keywords: celiac disease, coeliac, celiac, tropical sprue, sprue, clinical presentation, endoscopy, and histology. Studies published between August 1960 and January 2018 were reviewed. Out of 1063 articles available, 12 articles were included in the final analysis.

RESULTS: Between the patients with CD and TS, there was no difference in the prevalence and duration of chronic diarrhea, abdominal distension, weight loss, extent of abnormal fecal fat content, and density of intestinal inflammation. The following features were more common in CD: short stature, vomiting/dyspepsia, endoscopic scalloping/attenuation of duodenal folds, histological high modified Marsh changes, crescendo type of IELosis, surface epithelial denudation, surface mucosal flattening, thickening of subepithelial basement membrane and celiac seropositivity; while those in TS include anemia, abnormal urinary D-xylose test, endoscopic either normal duodenal folds or mild attenuation, histologically decrescendo type of IELosis, low modified Marsh changes, patchy mucosal changes, and mucosal eosinophilia.

CONCLUSIONS: Both patients with CD and TS have overlapping clinical, endoscopic, and histological characteristics, and there is no single diagnostic feature for differentiating CD from TS except for celiac specific serological tests.

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PMID: 30069926 [Indexed for MEDLINE]

249: Sharma R, Madathil S, Maheshwari V, Roy K, Kumar B, Jain V. Long-acting intramuscular ACTH stimulation test for the diagnosis of secondary adrenal insufficiency in children. *J Pediatr Endocrinol Metab.* 2019 Jan 28;32(1):57-63. doi: 10.1515/jpem-2018-0330. PubMed PMID: 30530907.

Background The diagnosis of adrenal insufficiency (AI) is based on the basal and stimulated levels of serum cortisol in response to the short Synacthen test (SST). In patients with secondary AI (SAI) due to hypothalamic-pituitary-adrenal (HPA) axis defects, the SST has been validated against the insulin tolerance test (ITT), which is the gold standard. However, injection Synacthen is not easily available in some countries, and endocrinologists often use Acton-Prolongatum (intramuscular [IM] long-acting adrenocorticotrophic hormone [ACTH]) in place of Synacthen. There are no studies validating the use of IM-ACTH in children with suspected AI. We evaluated the diagnostic value of the IM-ACTH test against the ITT for the diagnosis of SAI in children. **Methods** All children with suspected growth hormone deficiency (GHD) undergoing a routine ITT were evaluated using the IM-ACTH test within 1 week. **Results** Forty-eight patients (36 boys/12 girls, age range: 5-14 years) were evaluated using both the ITT and the IM-ACTH test. Twenty-eight patients had a normal cortisol response (≥ 18 $\mu\text{g/dL}$, 500 nmol/L) in the ITT and 20 had low values. In patients with a normal cortisol response on the ITT, the peak value obtained after the IM-ACTH test was higher than that on the ITT (28.7 $\mu\text{g/dL}$ [± 8.8] vs. 23.8 $\mu\text{g/dL}$ [± 4.54], respectively; $p=0.0012$). Compared to the ITT, the sensitivity and specificity of the IM-ACTH test for the diagnosis of SAI at cortisol cut-offs <18 $\mu\text{g/dL}$ (500 nmol/L) and <22 $\mu\text{g/dL}$ (600 nmol/L) were 57.1% and 92.8%, and 100% and 73.5%, respectively. **Conclusions** A peak cortisol value <18 $\mu\text{g/dL}$ on the IM-ACTH test is highly suggestive of SAI, whereas a value >22 $\mu\text{g/dL}$ rules out SAI.

DOI: 10.1515/jpem-2018-0330

PMID: 30530907

250: Sharma R, Sharma SK, Singh BK, Mittal A, Kumar P. High degree of fluoroquinolone resistance among pulmonary tuberculosis patients in New Delhi, India. *Indian J Med Res.* 2019 Jan;149(1):62-66. doi: 10.4103/ijmr.IJMR_1220_17. PubMed PMID: 31115377.

Background & objectives: : The fluoroquinolones (FQs) group of antibiotics is the backbone drugs for the management of drug-resistant tuberculosis (TB). In routine clinical practice, drug susceptibility testing (DST) for FQs is not performed, and the patients are empirically treated. A limited information exists regarding FQs resistance among pulmonary TB cases. The present study was conducted to determine the FQs resistance among drug sensitive and drug-resistant pulmonary TB patients in a tertiary care centre in north India.

Methods: : A total of 1619 sputum/smear-positive specimens of pulmonary TB patients were subjected to DST for first-line drugs (FLDs) and second-line drugs. In addition, FQs DST was also performed using automated Mycobacterial Growth Indicator Tube-960 liquid culture technique. The immuno-chromatographic assay was performed to distinguish Mycobacterium tuberculosis complex (MTBC) from non-MTBC.

Results: : Mycobacterium tuberculosis (Mtb) was isolated in 1499 sputum specimens; 1099 culture specimens were sensitive to FLDs, 249 grew as multidrug-resistant (MDR) Mtb and the remaining 151 isolates revealed any drug resistance to FLDs. While FQs monoresistance among the FLD sensitive isolates was 3.1 per cent (35/1099), 27.3 per cent (68/249) among MDR Mtb isolates had additional FQs resistance.

Interpretation & conclusions: : FQs resistance among drug sensitive and MDR Mtb isolates was high in Delhi, India. Based on these findings, it is recommended that the DST for FQs should be routinely performed to avoid further amplification of drug resistance.

DOI: 10.4103/ijmr.IJMR_1220_17

PMID: 31115377

Conflict of interest statement: None

251: Sharma R. Congenital Adrenal Hyperplasia and Growth Outcomes. *Indian J Pediatr.* 2019 Feb;86(2):111-112. doi: 10.1007/s12098-018-2841-7. Epub 2019 Jan 4. Review. PubMed PMID: 30607772.

252: Sharma S, Kumari P, Vashist A, Kumar C, Nandi M, Tyagi JS. Cognate sensor kinase-independent activation of Mycobacterium tuberculosis response regulator DevR (DosR) by acetyl phosphate: implications in anti-mycobacterial drug design. *Mol Microbiol.* 2019 May;111(5):1182-1194. doi: 10.1111/mmi.14196. Epub 2019 Jan 31. PubMed PMID: 30589958.

The DevRS/DosT two-component system is essential for mycobacterial survival under hypoxia, a prevailing stress within granulomas. DevR (also known as DosR) is activated by an inducing stimulus, such as hypoxia, through conventional phosphorylation by its cognate sensor kinases, DevS (also known as DosS) and DosT. Here, we show that the DevR regulon is activated by acetyl phosphate under 'non-inducing' aerobic conditions when Mycobacterium tuberculosis devS and dost double deletion strain is cultured on acetate. Overexpression of phosphotransacetylase caused a perturbation of the acetate kinase-phosphotransacetylase pathway, a decrease in the concentration of acetyl phosphate and dampened the aerobic induction response in acetate-grown bacteria. The operation of two pathways of DevR activation, one through sensor kinases and the other by acetyl phosphate, was established by an analysis of wild-type DevS and phosphorylation-defective DevSH395Q mutant strains under conditions partially mimicking a granulomatous-like environment of acetate and hypoxia. Our findings reveal that DevR can be phosphorylated in vivo by acetyl phosphate. Importantly, we demonstrate that acetyl phosphate-dependent phosphorylation can occur in the absence of DevR's cognate kinases. Based on our findings, we conclude that

anti-mycobacterial therapy should be targeted to DevR itself and not to DevS/DosT kinases.

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DOI: 10.1111/mmi.14196

PMID: 30589958

253: Sharma S, Joshi M, Gupta DK, Abraham M, Mathur P, Mahajan JK, Gangopadhyay AN, Rattan SK, Vora R, Prasad GR, Bhattacharya NC, Samuj R, Rao KLN, Basu AK. Consensus on the Management of Posterior Urethral Valves from Antenatal Period to Puberty. *J Indian Assoc Pediatr Surg.* 2019 Jan-Mar;24(1):4-14. doi: 10.4103/jiaps.JIAPS_148_18. Review. PubMed PMID: 30686881; PubMed Central PMCID: PMC6322183.

The need for successful management of posterior urethral valves always captivates the minds of pediatric surgeons. Its success, however, depends on several factors ranging from prenatal preservation of upper tracts to postoperative pharmacological compliance. Regardless of measures available, some cases do not respond and progress to end stage. The management depends on several issues ranging from age and severity at presentation to long-term follow-up and prevention of secondary renal damage and managing valve bladder syndrome. This article is based on a consensus to the set of questionnaires, prepared by research section of Indian Association of Paediatric Surgeons and discussed by experienced pediatric surgeons based in different institutions in the country. Standard operating procedures for conducting a voiding cystourethrogram and cystoscopy were formulated. Age-wise contrast dosage was calculated for ready reference. Current evidence from literature was also reviewed and included to complete the topic.

DOI: 10.4103/jiaps.JIAPS_148_18

PMCID: PMC6322183

PMID: 30686881

Conflict of interest statement: There are no conflicts of interest.

254: Sharma S. Progress in Fetal Surgery: A Buoyant Start or Watchful Reluctance? Perspectives for India. *J Indian Assoc Pediatr Surg.* 2019 Jan-Mar;24(1):1-3. doi: 10.4103/jiaps.JIAPS_84_18. PubMed PMID: 30686880; PubMed Central PMCID: PMC6322186.

255: Sharma S, Sheoran A, Gupta KB, Yadav A, Varma-Basil M, Sreenivas V, Chaudhary D, Mehta PK. Quantitative detection of a cocktail of mycobacterial MPT64 and PstS1 in tuberculosis patients by real-time immuno-PCR. *Future Microbiol.* 2019 Feb;14:223-233. doi: 10.2217/fmb-2018-0284. Epub 2019 Jan 21. PubMed PMID: 30663893.

AIM: There is an urgent need to design a reliable diagnostic test for tuberculosis (TB).

METHODS: Real-time immuno-PCR (RT-I-PCR) assay was devised for the quantitative detection of a cocktail of mycobacterial MPT64 (Rv1980c) and PstS1 (Rv0934) in TB patients.

RESULTS: A broad dynamic range of 0.95 pg/ml-95 ng/ml of MPT64+PstS1 was detected in TB patients. In smear-positive (n = 59) and smear-negative (n = 42) pulmonary TB cases, sensitivities of 93.2 and 83.3% were observed, respectively with 92.8% specificity, whereas a sensitivity of 77.9% and a specificity of 91.3% were observed in extrapulmonary TB cases (n = 86). Furthermore, significantly reduced MPT64+PstS1 concentrations (p < 0.001) were noticed in patients on therapy by RT-I-PCR as compared with untreated patients.

CONCLUSION: Our RT-I-PCR assay revealed high sensitivity especially for the rapid diagnosis of smear-negative pulmonary TB and paucibacillary extrapulmonary TB samples, which could also monitor the dynamics of disease in patients on therapy.

DOI: 10.2217/fmb-2018-0284

PMID: 30663893 [Indexed for MEDLINE]

256: Shaw M, Khurana R, Kumar S, Ojha V. Imaging Depiction of Large Pericardial Metastasis From Osteosarcoma of Tibia. *Ann Thorac Surg*. 2019 May;107(5):e355. doi: 10.1016/j.athoracsur.2018.12.005. Epub 2019 Jan 2. PubMed PMID: 30610850.

257: Shewade HD, Gupta V, Satyanarayana S, Pandey P, Bajpai UN, Tripathy JP, Kathirvel S, Pandurangan S, Mohanty S, Ghule VH, Sagili KD, Prasad BM, Nath S, Singh P, Singh K, Singh R, Jayaraman G, Rajeswaran P, Srivastava BK, Biswas M, Mallick G, Bera OP, Sahai KN, Murali L, Kamble S, Deshpande M, Kumar N, Kumar S, Jaisingh AJJ, Naqvi AJ, Verma P, Ansari MS, Mishra PC, Sumesh G, Barik S, Mathew V, Lohar MRS, Gaurkhede CS, Parate G, Bale SY, Koli I, Bharadwaj AK, Venkatraman G, Sathiyarayanan K, Lal J, Sharma AK, Rao R, Kumar AMV, Chadha SS. Patient characteristics, health seeking and delays among new sputum smear positive TB patients identified through active case finding when compared to passive case finding in India. *PLoS One*. 2019 Mar 13;14(3):e0213345. doi: 10.1371/journal.pone.0213345. eCollection 2019. PubMed PMID: 30865730; PubMed Central PMCID: PMC6415860.

BACKGROUND: Axshya SAMVAD is an active tuberculosis (TB) case finding (ACF) strategy under project Axshya (Axshya meaning 'free of TB' and SAMVAD meaning 'conversation') among marginalized and vulnerable populations in 285 districts of India.

OBJECTIVES: To compare patient characteristics, health seeking, delays in diagnosis and treatment initiation among new sputum smear positive TB patients detected through ACF and passive case finding (PCF) under the national TB programme in marginalized and vulnerable populations between March 2016 and February 2017.

METHODS: This observational analytic study was conducted in 18 randomly sampled Axshya districts. We enrolled all TB patients detected through ACF and an equal number of randomly selected patients detected through PCF in the same settings. Data on patient characteristics, health seeking and delays were collected through record review and patient interviews (at their residence). Delays included patient level delay (from eligibility for sputum examination to first contact with any health care provider (HCP)), health system level diagnosis delay (from contact with first HCP to TB diagnosis) and treatment initiation delays (from diagnosis to treatment initiation). Total delay was the sum of patient level, health system level diagnosis delay and treatment initiation delays.

RESULTS: We included 234 ACF-diagnosed and 231 PCF-diagnosed patients. When compared to PCF, ACF patients were relatively older (≥ 65 years, 14% versus 8%, $p = 0.041$), had no formal education (57% versus 36%, $p < 0.001$), had lower monthly income per capita (median 13.1 versus 15.7 USD, $p = 0.014$), were more likely from rural areas (92% versus 81%, $p < 0.002$) and residing far away from the sputum microscopy centres (more than 15 km, 24% versus 18%, $p = 0.126$). Fewer patients had history of significant loss of weight (68% versus 78%, $p = 0.011$) and sputum grade of 3+ (15% versus 21%, $p = 0.060$). Compared to PCF, HCP visits among ACF patients was significantly lower (median one versus two HCPs, $p < 0.001$). ACF patients had significantly lower health system level diagnosis delay (median five versus 19 days, $p = 0.008$) and the association remained significant after adjusting for potential confounders. Patient level and total delays were not significantly different.

CONCLUSION: Axshya SAMVAD linked the most impoverished communities to TB care and resulted in reduction of health system level diagnosis delay.

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PMCID: PMC6415860

PMID: 30865730

Conflict of interest statement: The authors have declared that no competing interests exist.

258: Shukla S, Chug A, Mahesh L, Singh S, Singh K. Optimal management of

intrabony defects: current insights. Clin Cosmet Investig Dent. 2019 Jan 17;11:19-25. doi: 10.2147/CCIDE.S166164. eCollection 2019. Review. PubMed PMID: 30697083; PubMed Central PMCID: PMC6340362.

Periodontitis is the most common condition, which causes bony defects. Intrabony defects thought not as common as the horizontal bone loss pose a risk of disease progression and thus should be managed optimally; however, it does not mean all the intrabony defects can be treated and all the mobile teeth saved! But, with the advent of new biomaterials prognosis of teeth can be improved. The objective of this article is to discuss old and new concepts toward the optimal management of intrabony defects.

DOI: 10.2147/CCIDE.S166164
PMCID: PMC6340362
PMID: 30697083

Conflict of interest statement: Disclosure The authors report no conflicts of interest in this work.

259: Sikary AK, Behera C, Murty OP. Adipocere Formation in Subtropical Climate of Northern India: A Retrospective Study. J Forensic Sci. 2019 Jan;64(1):260-263. doi: 10.1111/1556-4029.13847. Epub 2018 Jun 25. PubMed PMID: 29940696.

Adipocere formation depends upon multiple environmental factors. In comparison with temperate countries, it usually develops early in the subtropical climate. We have studied a retrospective data of 31 cases with adipocere formation at Department of Forensic Medicine at All India Institute of Medical Sciences, New Delhi. Most of the cases were recovered during the month of May to October from closed rooms at home, open grounds, open forest areas, various water sources, and riverbanks. The time duration of recovery from the time of death was from 12 h to 7 days 12 h. In 10 cases, adipocere formation was seen within 2 days, and in four male cases among them, the adipocere formed within a day. Most of the bodies showing adipocere formation within 2 days were recovered from land. These facts showed that subtropical climate having hot and humid weather promotes early adipocere formation compared to temperate climate.

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DOI: 10.1111/1556-4029.13847
PMID: 29940696 [Indexed for MEDLINE]

260: Singh A, Bhalla AS, Jana M. Bronchiectasis Revisited: Imaging-Based Pattern Approach to Diagnosis. Curr Probl Diagn Radiol. 2019 Jan;48(1):53-60. doi: 10.1067/j.cpradiol.2017.12.001. Epub 2018 Jan 6. Review. PubMed PMID: 29530453.

BACKGROUND: Bronchiectasis is one of the causes of non-resolving, persistent or recurrent pulmonary infection which, if uncorrected may have deleterious consequences on the lung parenchyma and pulmonary circulation. High-resolution computed tomography (HRCT) is needed for the confirmation, localization and directing management accordingly.

CONTENTS: Bronchiectasis is one of the major cause of morbidity worldwide. Chest radiograph is done at the initial suspicion which is supplemented by HRCT to confirm the diagnosis. Imaging diagnosis supplemented by the recognition of the pattern of involvement is essential to outline the differential diagnosis, map the complications and, hence, guiding the further management. Identification of the causative aetiology may not only prevent its further progression but obviate recurrent insults to the lung parenchyma as well. This article focuses on an algorithmic approach to bronchiectasis based on the distribution on imaging.

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DOI: 10.1067/j.cpradiol.2017.12.001
PMID: 29530453 [Indexed for MEDLINE]

261: Singh A, Sinha R, Aravindan A, Kumar KR, Datta PK. Comparison of low-fresh gas flow technique to standard technique of sevoflurane induction in children-A randomized controlled trial. *Paediatr Anaesth*. 2019 Apr;29(4):304-309. doi: 10.1111/pan.13582. Epub 2019 Jan 24. PubMed PMID: 30614138.

BACKGROUND: Although sevoflurane is preferred for inhalational induction in children, financial and environmental costs remain major limitations. The aim of this study was to determine if the use of low-fresh gas flow during inhalational induction with sevoflurane could significantly reduce agent consumption, without adversely affecting induction conditions.

METHODS: After institutional ethical committee approval, 50 children, aged 1-5 years, undergoing ophthalmic procedures under general anesthesia, were randomized into two groups-standard induction (Group S) and low-flow induction (Group L). A pediatric circle system with 1 L reservoir bag was primed with 8% sevoflurane in oxygen at 6 L min⁻¹ for 30 seconds before beginning induction. In Group S, fresh gas flow was maintained at 6 L min⁻¹ until the end of induction. In Group L, fresh gas flow was reduced to 1 L min⁻¹ after applying facemask (time = T0). In both groups, sevoflurane was reduced to 5% after loss of eyelash reflex (T1). Once adequate depth of anesthesia was achieved (regular respiration, loss of muscle tone, and absence of movement to trapezius squeeze), intravenous access was secured (T2), followed by insertion of an appropriately sized LMA-Classic™ (T3). Heart rate and endtidal sevoflurane concentration were measured at each of the above time points, and at 15 seconds following laryngeal mask airway insertion (T4). The total amount of sevoflurane consumed during induction was recorded.

RESULTS: Sevoflurane consumption was significantly lower in Group L (4.17 ± 0.70 mL) compared to Group S (8.96 ± 1.11 mL) (mean difference 4.79 [95% CI = 4.25-5.33] mL; P < 0.001). Time to successful laryngeal mask airway insertion was similar in both groups. There were no significant differences in heart rate, incidence of reflex tachycardia, or need for rescue propofol.

CONCLUSION: Induction of anesthesia with sevoflurane using low-fresh gas flow is effective in reducing sevoflurane consumption, without compromising induction time and conditions.

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262: Singh K, Ali MK, Devarajan R, Shivashankar R, Kondal D, Ajay VS, Menon VU, Varthakavi PK, Viswanathan V, Dharmalingam M, Bantwal G, Sahay RK, Masood MQ, Khadgawat R, Desai A, Prabhakaran D, Narayan KMV, Phillips VL, Tandon N; CARRS Trial Group. Rationale and protocol for estimating the economic value of a multicomponent quality improvement strategy for diabetes care in South Asia. *Glob Health Res Policy*. 2019 Mar 18;4:7. doi: 10.1186/s41256-019-0099-x. eCollection 2019. PubMed PMID: 30923749; PubMed Central PMCID: PMC6421672.

Background: Economic dimensions of implementing quality improvement for diabetes care are understudied worldwide. We describe the economic evaluation protocol within a randomised controlled trial that tested a multi-component quality improvement (QI) strategy for individuals with poorly-controlled type 2 diabetes in South Asia.

Methods/design: This economic evaluation of the Centre for Cardiometabolic Risk Reduction in South Asia (CARRS) randomised trial involved 1146 people with poorly-controlled type 2 diabetes receiving care at 10 diverse diabetes clinics across India and Pakistan. The economic evaluation comprises both a within-trial cost-effectiveness analysis (mean 2.5 years follow up) and a microsimulation model-based cost-utility analysis (life-time horizon). Effectiveness measures include multiple risk factor control (achieving HbA1c < 7% and blood pressure < 130/80 mmHg and/or LDL-cholesterol < 100 mg/dl), and patient reported outcomes including quality adjusted life years (QALYs) measured by EQ-5D-3L, hospitalizations, and diabetes related complications at the trial end. Cost measures include direct medical and non-medical costs relevant to outpatient care (consultation fee, medicines, laboratory tests, supplies, food, and

escort/accompanying person costs, transport) and inpatient care (hospitalization, transport, and accompanying person costs) of the intervention compared to usual diabetes care. Patient, healthcare system, and societal perspectives will be applied for costing. Both cost and health effects will be discounted at 3% per year for within trial cost-effectiveness analysis over 2.5 years and decision modelling analysis over a lifetime horizon. Outcomes will be reported as the incremental cost-effectiveness ratios (ICER) to achieve multiple risk factor control, avoid diabetes-related complications, or QALYs gained against varying levels of willingness to pay threshold values. Sensitivity analyses will be performed to assess uncertainties around ICER estimates by varying costs (95% CIs) across public vs. private settings and using conservative estimates of effect size (95% CIs) for multiple risk factor control. Costs will be reported in US\$ 2018.

Discussion: We hypothesize that the additional upfront costs of delivering the intervention will be counterbalanced by improvements in clinical outcomes and patient-reported outcomes, thereby rendering this multi-component QI intervention cost-effective in resource constrained South Asian settings.

Trial registration: ClinicalTrials.gov: NCT01212328.

DOI: 10.1186/s41256-019-0099-x

PMCID: PMC6421672

PMID: 30923749

Conflict of interest statement: Institutional ethics committees at each participating site and the research coordinating centres (Public Health Foundation of India and Emory University, USA) approved the study and all physicians and patients gave written informed consent prior to participating in this study. Not applicable. The authors declare that they have no competing interests.

263: Singh PK, Srichandan H, Ojha SK, Mishra S, Naik K. A comparative study of biogasification of wheat straw, sugarcane bagasse and pressmud. *J Environ Sci Health A Tox Hazard Subst Environ Eng.* 2019;54(4):306-314. doi: 10.1080/10934529.2018.1548812. Epub 2019 Jan 19. PubMed PMID: 30663503.

A study to compare biogas production potentials of wheat straw, sugarcane bagasse and pressmud was conducted at pH 8.0, temperature 40 °C and substrate concentration 20 g/L. Raw substrates were thermogravimetrically and Fourier-transform infrared spectroscopically characterised. TGA showed the weight loss of samples attributable to moisture, hemicellulose, cellulose and lignin losses. FTIR analysis indicated functional groups characteristics of hemicellulose, cellulose and lignin. Biogas production was the maximum between 10th and 25th day for all the tests. WS with 10% inoculum showed the highest cumulative biogas production of 370 mL/g followed by the SB (316 mL/g) and PM (211 mL/g) counterparts. The corresponding values with 5% inoculum were 303 mL/g (WS), 244 mL/g (SB) and 152 mL/g (PM). The inoculum volume also positively affected the cumulative biogas production (22.1, 29.5 and 38.8% respectively). The higher volatile fatty acids as observed in case of WS which further facilitated higher biogas production could be due to its maximum volatile solids content (88.9%) and water swelling capacity (7.37). A consistently increasing trend in the methane content (varying between 54 and 61%) in all the tests was observed till the 20th day. The biogas (7.7-21.7 mL/g) and the methane (35-42%) contents showed a decreasing trend thereafter, the lowest being observed during the 35-40-day period.

DOI: 10.1080/10934529.2018.1548812

PMID: 30663503

264: Singh S, Patra S, Bhari N. Dermatofibroma Over the Face. *Indian Dermatol Online J.* 2019 Jan-Feb;10(1):94-95. doi: 10.4103/idoj.IDOJ_308_17. PubMed PMID: 30775315; PubMed Central PMCID: PMC6362746.

265: Singh Y, Mirdha BR, Guleria R, Kabra SK, Mohan A, Chaudhry R, Kumar L, Dwivedi SN, Agarwal SK. Novel dihydropteroate synthase gene mutation in *Pneumocystis jirovecii* among HIV-infected patients in India: Putative association with drug resistance and mortality. *J Glob Antimicrob Resist*. 2019 Jan 15;17:236-239. doi: 10.1016/j.jgar.2019.01.007. [Epub ahead of print] PubMed PMID: 30658203.

OBJECTIVES: *Pneumocystis pneumonia* (PCP) remains a debilitating cause of death among HIV-infected patients. The combination trimethoprim/sulfamethoxazole (SXT) is the most effective anti-*Pneumocystis* treatment and prophylaxis. However, long-term use of this combination has raised alarms about the emergence of resistant organisms. This study was performed to investigate mutations in the dihydropteroate synthase (DHPS) gene and their clinical consequences in HIV-infected patients with PCP.

METHODS: A total of 76 clinically suspected cases of PCP among HIV-seropositive adult patients from March 2014 to March 2017 were included. Clinical samples (bronchoalveolar lavage fluid and sputum) were investigated for the detection of *Pneumocystis jirovecii* using both microscopy and nested PCR. DHPS genotyping and mutational analyses were performed and the data were correlated with clinical characteristics.

RESULTS: Among the 76 enrolled HIV-positive patients, only 17 (22.4%) were positive for *P. jirovecii*. DHPS gene sequencing showed a novel nucleotide substitution at position 288 (Val96Ile) in three patients (3/17; 17.6%). Patients infected with the mutant *P. jirovecii* genotype had severe episodes of PCP, did not respond to SXT and had a fatal outcome ($P=0.005$). All three patients had a CD4+ T-cell count <100 cells/ μ L, and two also had co-infections.

CONCLUSION: This study suggests that the emergence of a mutant *P. jirovecii* genotype is probably associated with drug resistance and mortality. The data also suggest that DHPS mutational analyses should be performed in HIV-seropositive patients to avoid treatment failure and death due to PCP. However, the role of underlying disease severity and co-morbidities should not be underestimated.

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PMID: 30658203

266: Singhal D, Sahay P, Maharana PK, Raj N, Sharma N, Titiyal JS. Vernal Keratoconjunctivitis. *Surv Ophthalmol*. 2019 May - Jun;64(3):289-311. doi: 10.1016/j.survophthal.2018.12.001. Epub 2018 Dec 12. Review. PubMed PMID: 30550738.

Vernal keratoconjunctivitis, a chronic bilateral seasonal allergic inflammatory disease of the eye, is an important cause of visual debilitation and impairment of quality of life in children and young adults in certain parts of the world such as the Mediterranean areas, Central and West Africa, the Middle East, Japan, the Indian subcontinent, and South America. It usually has a self-limiting course; however, in a few cases, the disease is recurrent and leads to long-term visual disabling complications such as keratoconus and limbal stem cell deficiency. The main pathogenic mechanism is immunoglobulin E mediated; however, there may be non-immunoglobulin E and certain nonspecific hypersensitivity mechanisms. The predominant cell types involved are CD4 T cells and eosinophils. The management of vernal keratoconjunctivitis is challenging. Although an acute episode can be well managed with the help of currently available topical agents, the major challenge lies in preventing recurrences and their consequences. Steroids are highly effective in controlling both an acute episode and chronic disease; however, the long-term complications of steroid use often prevent their continued use. Immunomodulators such as tacrolimus and cyclosporine may be used as steroid-sparing agents; however, the dosing and duration of use still need to be clearly defined. Surgery is required for the management of complications such as shield ulcer and corneal ectasia or opacity; however, the disease process and management are largely well defined, and genetic predisposition factors responsible for chronicity and an effective albeit safe treatment modality for

the chronic form of the disease need further research.

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DOI: 10.1016/j.survophthal.2018.12.001

PMID: 30550738

267: Singhal R, Rathore DK, Bhakuni T, Seth T, Guchhait P. Absence of Nonclassical Monocytes in Hemolytic Patients: Free Hb and NO-Mediated Mechanism. *J Immunol Res*. 2019 Mar 27;2019:1409383. doi: 10.1155/2019/1409383. eCollection 2019. PubMed PMID: 31032371; PubMed Central PMCID: PMC6458887.

In a recent work, we have described the kinetics among the monocyte subsets in the peripheral blood of hemolytic patients including paroxysmal nocturnal hemoglobinuria (PNH) and sickle cell disease (SCD). After engulfing Hb-activated platelets, classical monocytes (CD14+CD16-) significantly transformed into highly inflammatory (CD14+CD16hi) subsets in vitro. An estimated 40% of total circulating monocytes in PNH and 70% in SCD patients existed as CD14+CD16hi subsets. In this study, we show that the nonclassical (CD14dimCD16+) monocyte subsets are nearly absent in patients with PNH or SCD, compared to 10-12% cells in healthy individuals. In mechanism, we have described the unique role of both free Hb and nitric oxide (NO) in reducing number of nonclassical subsets more than classical monocytes. After engulfing Hb-activated platelets, the monocytes including nonclassical subsets acquired rapid cell death within 12h in vitro. Further, the treatment to monocytes either with the secretome of Hb-activated platelets containing NO and free Hb or purified free Hb along with GSNO (a physiological NO donor) enhanced rapid cell death. Besides, our data from both PNH and SCD patients exhibited a direct correlation between intracellular NO and cell death marker 7AAD in monocytes from the peripheral blood. Our data together suggest that due to the immune surveillance nature, the nonclassical or patrolling monocytes are encountered frequently by Hb-activated platelets, free Hb, and NO in the circulation of hemolytic patients and are predisposed to die rapidly.

DOI: 10.1155/2019/1409383

PMCID: PMC6458887

PMID: 31032371

268: Sinha A, Puraswani M, Kalaivani M, Goyal P, Hari P, Bagga A. Efficacy and safety of mycophenolate mofetil versus levamisole in frequently relapsing nephrotic syndrome: an open-label randomized controlled trial. *Kidney Int*. 2019 Jan;95(1):210-218. doi: 10.1016/j.kint.2018.08.039. Epub 2018 Nov 26. PubMed PMID: 30497684.

Both levamisole and mycophenolate mofetil (MMF) prevent relapses in patients with frequently relapsing nephrotic syndrome; however, their efficacy has not been compared prospectively. This single-center, randomized, open-label trial enrolled 149 children ages 6-18 years with frequently relapsing or steroid-dependent nephrotic syndrome. Participants were randomized in a 1:1 ratio to receive therapy with MMF (750-1000 mg/m² daily) or levamisole (2-2.5 mg/kg on alternate days) for 1 year; prednisolone was discontinued by 2-3 months. In intention-to-treat analyses, the frequency of relapse was similar between participants treated with MMF and levamisole (mean difference -0.29 relapses/patient-year; 95% confidence interval -0.65, 0.08). Relapse rates declined to almost one-third of baseline for both treatment groups. Therapy with MMF was not superior to levamisole in terms of the proportions of participants with sustained remission (40.8% vs. 34.2%), frequent relapses (14.5% vs. 16.4%), or treatment failure, a composite outcome of frequent relapses, steroid resistance, or significant steroid toxicity (15.8% vs. 20.6%). These outcomes were also similar in time to event analyses. Changes in anthropometry and blood pressure were similar between the groups, and the rates of adverse effects were low in both groups. Flow cytometry in 32 participants demonstrated similar proportions of B cells and CD4+, CD8+, T helper (Th)1, Th2, Th17, and T regulatory (Treg) cells during follow-up. Therapy with MMF was not superior to

levamisole in the frequency of relapses, likelihood of sustained remission or corticosteroid sparing in children with frequently relapsing or steroid-dependent nephrotic syndrome. Registration CTRI/2012/02/002394.

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DOI: 10.1016/j.kint.2018.08.039
PMID: 30497684

269: Sinha M, Pandey NN, Rajagopal R, Kumar S. A heart in an eggshell. *BMJ Case Rep.* 2019 Jan 10;12(1). pii: bcr-2018-227968. doi: 10.1136/bcr-2018-227968. PubMed PMID: 30635312.

270: Sinukumar S, Mehta S, Damodaran D, Rajan F, Zaveri S, Ray M, Katdare N, Sethna K, Patel MD, Kammer P, Peedicayil A, Bhatt A. Failure-to-Rescue Following Cytoreductive Surgery with or Without HIPEC is Determined by the Type of Complication—a Retrospective Study by INDEPSO. *Indian J Surg Oncol.* 2019 Feb;10(Suppl 1):71-79. doi: 10.1007/s13193-019-00877-x. Epub 2019 Jan 14. PubMed PMID: 30886497; PubMed Central PMCID: PMC6397122.

To determine factors influencing failure-to-rescue in patients with complications following cytoreductive surgery and HIPEC. A retrospective analysis of patients enrolled in the Indian HIPEC registry was performed. Complications were graded according to the CTCAE classification version 4.3. The 30- and 90-day morbidity were both recorded. Three hundred seventy-eight patients undergoing CRS with/without HIPEC for peritoneal metastases from various primary sites, between January 2013 and December 2017 were included. The median PCI was 11 [range 0-39] and a CC-0/1 resection was achieved in 353 (93.5%). Grade 3-4 morbidity was seen 95 (25.1%) at 30 days and 122 (32.5%) at 90 days. The most common complications were pulmonary complications (6.8%), neutropenia (3.7%), systemic sepsis (3.4%), anastomotic leaks (1.5%), and spontaneous bowel perforations (1.3%). Twenty-five (6.6%) patients died within 90 days of surgery due to complications. The failure-to-rescue rate was 20.4%. Pulmonary complications ($p=0.03$), systemic sepsis ($p<0.001$), spontaneous bowel perforations ($p<0.001$) and PCI >20 ($p=0.002$) increased the risk of failure-to-rescue. The independent predictors were spontaneous bowel perforation ($p=0.05$) and systemic sepsis ($p=0.001$) and PCI >20 ($p=0.02$). The primary tumor site did not have an impact on the FTR rate ($p=0.09$) or on the grade 3-4 morbidity ($p=0.08$). Nearly one-fifth of the patients who developed complications succumbed to them. Systemic sepsis, spontaneous bowel perforations, and pulmonary complications increased the risk of FTR and multidisciplinary teams should develop protocols to prevent, identify, and effectively treat such complications. All surgeons pursuing this specialty should perform a regular audit of their results, irrespective of their experience.

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PMCID: PMC6397122 [Available on 2020-02-01]
PMID: 30886497

Conflict of interest statement: Compliance with Ethical StandardsThe authors declare that they have no conflicts of interest.

271: Sinukumar S, Mehta S, As R, Damodaran D, Ray M, Zaveri S, Kammar P, Bhatt A. Analysis of Clinical Outcomes of Pseudomyxoma Peritonei from Appendicular Origin Following Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy—A Retrospective Study from INDEPSO. *Indian J Surg Oncol.* 2019 Feb;10(Suppl 1):65-70. doi: 10.1007/s13193-018-00870-w. Epub 2019 Jan 11. PubMed PMID: 30886496; PubMed Central PMCID: PMC6397130.

To evaluate the clinical outcomes of patients of pseudomyxoma peritonei of appendiceal origin undergoing cytoreductive surgery and HIPEC. Data collected from members, an independent collaborative group of Indian surgeons specializing

in the management of peritoneal surface malignancy (INDEPSO), was analyzed retrospectively. Clinicopathological and perioperative outcomes of patients treated for pseudomyxoma peritonei (PMP) of appendicular origin were evaluated. Ninety-one patients were diagnosed with pseudomyxoma peritonei of appendicular origin between March 2013 and December 2017. The median age was 53 years and 60% were females. The median PCI was 27 [range 3-39] and a CC-0/1 resection was achieved in 83.5% patients. The most common histological grade was low-grade PMP, seen in 71.4% cases. The overall rate of grades 3-4 morbidity was 33% (30/91) and the 90-day mortality rate reported was 6.5%. Pulmonary complications and systemic sepsis emerged as the most significant factors affecting morbidity, mortality, and failure to rescue. At a median follow-up of 24 months, the median OS was not reached and the median PFS was 53 months. On univariate and multivariate analysis, high-grade histology, prior chemotherapy, debulking surgery alone without HIPEC, and high PCI>10 were predictors of poor progression-free survival. The survival and morbidity results of pseudomyxoma peritonei from appendicular origin following cytoreductive surgery and hyperthermic intraperitoneal chemotherapy are encouraging. With further awareness and understanding of the disease, and improvement in surgical expertise and learning curve, there is scope for further reduction in morbidity and better improvement in survival.

DOI: 10.1007/s13193-018-00870-w

PMCID: PMC6397130 [Available on 2020-02-01]

PMID: 30886496

Conflict of interest statement: Compliance with Ethical StandardsThe authors declare that they have no conflict of interest.

272: Sood M. Psychopathology of Schizophrenia in South Asia: Has there been a change over the last few decades? *Asian J Psychiatr.* 2019 Jan;39:80-83. doi: 10.1016/j.ajp.2018.12.007. Epub 2018 Dec 22. PubMed PMID: 30593988.

INTRODUCTION: There have been a number of studies reporting on psychopathology of schizophrenia from South Asia, with the last study being reported about twenty five years back. The present study reports the clinical profile and frequency of symptoms in patients with schizophrenia and discusses the changing trends in psychopathology.

MATERIAL AND METHOD: Three hundred and thirty two patients with schizophrenia, aged 16-55, diagnosed as per DSM-IV-TR, were assessed for psychopathology on operational criteria OPCRIT checklist. The findings were compared with the previous studies on psychopathology of schizophrenia reported from South Asia.

RESULTS: Delusions (82.8%) followed by hallucinations (69.9%) were the most frequent psychopathology. First rank symptoms (FRS) were present in about three fourth of the subjects. Third person auditory hallucinations (68.6%) were the most common and thought echo (2.9%) was the least common FRS. One FRS was present in 31.7%, two in 24.7%, three in 17.7% and four in 6.8% of the subjects having FRS. A comparison with studies A comparison revealed that the prevalence of FRS were inbetween those reported in studies from Pakistan and India but higher than in the samples evaluated in Sri Lanka.

CONCLUSION: Delusions and hallucinations with persecutory themes and FRS continue to be a common symptom in patients with schizophrenia.

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PMID: 30593988 [Indexed for MEDLINE]

273: Sood S, Mahajan N, Singh R, Agrawal SK, Shende T, Kapil A, Kar HK, Sharma VK. Typing of Neisseria gonorrhoeae isolates by phenotypic and genotypic techniques in New Delhi, India. *J Lab Physicians.* 2019 Jan-Mar;11(1):45-50. doi: 10.4103/JLP.JLP_107_18. PubMed PMID: 30983802; PubMed Central PMCID: PMC6437833.

BACKGROUND: The objective of this study is to investigate gonococcal isolates using phenotypic and genotypic methods.

METHODOLOGY: Sixty gonococcal isolates obtained were examined. Strains were divided into 9 resistant phenotypes: Chromosomally mediated penicillin-resistant *Neisseria gonorrhoeae* (CMRNGP), penicillinase-producing NG (PPNG), chromosomally mediated tetracycline-resistant NG (CMRNGT), TRNG, PPNG and TRNG, CMRNGPT, quinolone resistant NG (QRNG), Azithro R, and decreased susceptibility (DS) to ceftriaxone. These isolates were also subjected to auxotyping and NG-multi-antigen sequence typing (MAST).

RESULTS: Of 60 isolates, 32 (53.33%) PPNG and only one was CMRNGP; 16 (26.66%) were CMRNGT, while 18 (30%) were TRNG. Both PPNG and TRNG found in 13 (21.66%) and none were CMRNGPT. QRNG was seen in 93.33%, 5% Azithromycin R, and 6.66% were DS to ceftriaxone. Based on auxotyping, 24 (40%) nonrequiring, 16 (26.66%) were proline requiring, 13 (21.66%) arginine requiring while 7 (11.66%) belonged to others. The most common ST was 6058 (32.5%). The discriminatory indices of antibiogram, auxotyping and NG-MAST were 0.77, 0.72, and 0.95, respectively.

CONCLUSIONS: NG-MAST is the method of choice for epidemiological studies.

DOI: 10.4103/JLP.JLP_107_18

PMCID: PMC6437833

PMID: 30983802

Conflict of interest statement: There are no conflicts of interest.

274: Srivastava AK, Reddy Sura PK. Primary angitis of the central nervous system - An Indian experience. *Neurol India*. 2019 Jan-Feb;67(1):113-114. doi: 10.4103/0028-3886.253599. PubMed PMID: 30860106.

275: Subhadarshani S, Sarangi J, Verma KK. Dermoscopy of Subungual Wart. *Dermatol Pract Concept*. 2019 Jan 31;9(1):22-23. doi: 10.5826/dpc.0901a06. eCollection 2019 Jan. PubMed PMID: 30775143; PubMed Central PMCID: PMC6368067.

276: Suchal K, Bhatia J, Malik S, Malhotra RK, Gamad N, Goyal S, Nag TC, Arya DS, Ojha S. Corrigendum: Seabuckthorn Pulp Oil Protects against Myocardial Ischemia-Reperfusion Injury in Rats through Activation of Akt/eNOS. *Front Pharmacol*. 2019 Jan 31;9:1557. doi: 10.3389/fphar.2018.01557. eCollection 2018. PubMed PMID: 30766488; PubMed Central PMCID: PMC6365674.

277: Suliankatchi RA, Sinha DN, Rath R, Aryal KK, Zaman MM, Gupta PC, Karki KB, Venugopal D. Smokeless Tobacco Use is "Replacing" the Smoking Epidemic in the South-East Asia Region. *Nicotine Tob Res*. 2019 Jan 1;21(1):95-100. doi: 10.1093/ntr/ntx272. PubMed PMID: 29281083.

Background: The sustained anti-tobacco campaign initiated in response to the mounting evidence against tobacco smoking has driven tobacco companies and smokers to look for alternative choices, such as smokeless tobacco (SLT) products. If this strategy advances, it could undermine several gains made by the campaign over the years. Our objective was to examine the trends in the prevalence of different tobacco types in three countries (Bangladesh, India, and Nepal) of South-East Asia.

Methods: Data from national surveys were used to estimate the trends of weighted and age-standardized prevalence (along with 95% CI) of different tobacco products. The share of each tobacco type was then calculated as a percentage of total tobacco use for each time point and country.

Results: In all the three countries, smoking prevalence declined (by 6% in Bangladesh, 3% in India, and 7% in Nepal) but SLT use increased (by 3% in Bangladesh, 6% in India, and 4% in Nepal) over the study period. SLT use increased irrespective of whether the total tobacco use increased or decreased. The share of SLT as a percentage of total tobacco use increased from 15% to 19% among Bangladeshi men, from 46% to 61% in India, and from 29% to 41% in Nepal.

Conclusions: In South-East Asia, a clear shift in the product preference from smoking to SLT was noted. Misleading advertising by tobacco companies may be responsible for the increase in the SLT prevalence, which is as harmful as

smoking. Countries should strengthen policies to restrict SLT usage and prevent the rise of its use.

Implications: It has been documented that the smoking prevalence has been declining in most countries of the South-East Asia region where effective anti-tobacco laws have been implemented. But, due to a number of factors, the prevalence of smokeless tobacco has been increasing steadily, making the entire anti-tobacco movement less effective in terms of reducing the tobacco-attributable disease burden. In this context, this study has provided a detailed comparative analysis of the prevalence of smokeless tobacco use and smoking in three countries of the SEAR where such data were available. It can be clearly seen that the preference for smoking has shifted towards the smokeless tobacco in all the three study countries. This study recommends that tobacco control interventions should be aligned with the changing dynamics of the tobacco epidemic, and the need of the hour is placing restrictions of smokeless tobacco use so as to drive forward the gains of the anti-tobacco movement.

DOI: 10.1093/ntr/ntx272

PMID: 29281083

278: Talawar P, Kumar A, Bhoi D, Singh A. Initial experience of erector spinae plane block in patients undergoing breast surgery: A case series. *Saudi J Anaesth.* 2019 Jan-Mar;13(1):72-74. doi: 10.4103/sja.SJA_560_17. PubMed PMID: 30692894; PubMed Central PMCID: PMC6329236.

Postoperative pain after breast surgery is difficult to manage owing to its complex innervation. Recently, erector spinae plane (ESP) block, an interfascial block, has been described to provide pain relief after thoracic and abdominal surgeries, multiple rib fractures, and neuropathic thoracic pain. Local anesthetic injected in the erector spinae muscle sheath at the level of the 5th thoracic transverse process is distributed cranially and caudally along the sheath, and to the paravertebral space through apertures in the anterior sheath wall. This may block the dorsal and ventral rami of the thoracic spinal nerves at multiple vertebral levels and the rami communicantes transmitting autonomic fibers to and from the sympathetic ganglia, causing multidermatomal somatic and visceral analgesia. The present case report demonstrates the adequate perioperative analgesia provided by the ultrasound-guided ESP block in patients undergoing various breast surgeries.

DOI: 10.4103/sja.SJA_560_17

PMCID: PMC6329236

PMID: 30692894

Conflict of interest statement: There are no conflicts of interest.

279: Talwar S, Anand A, Siddarth B, Ramakrishnan S, Choudhary SK, Airan B. Early right ventricular function following trans-right atrial versus trans-right atrial, trans-right ventricular repair of Tetralogy of Fallot: Results of a prospective randomized study. *Ann Pediatr Cardiol.* 2019 Jan-Apr;12(1):3-9. doi: 10.4103/apc.APC_40_18. PubMed PMID: 30745763; PubMed Central PMCID: PMC6343382.

Objective: We compared the pre- and post-operative right ventricular (RV) function by tricuspid annular plane systolic excursion (TAPSE) between trans-right atrial (t-RA) versus t-RA/RV (RA/RV) approach for the repair of Tetralogy of Fallot (TOF).

Patients and Methods: Fifty consecutive patients, 1-15 years of age, undergoing intracardiac repair of TOF between September 2015 and June 2016 were randomized into two groups based on the approach for repair as follows: t-RA or t-RA/RV approach. TAPSE was used for the assessment of pre- and post-operative RV function.

Results: Age, body surface area, preoperative saturation, cardiopulmonary bypass and aortic cross-clamp times, inotropic score, postoperative intensive care unit, and hospital stay were similar in both the groups. However, t-RA/RV group had significant mediastinal drainage (169 ± 163 ml vs. 90.6 ± 58.7 ml, $P < 0.05$) and pleural effusions (8 vs. 2 patients, $P < 0.05$), but had better relief of RV

outflow tract gradients. The mean follow-up was 23 ± 6.7 (median 26, range 21-29) months. There were no differences in arrhythmias in either group up to the 1st month and at last follow-up. Preoperative TAPSE for t-RA and t-RA/RV was similar (1.49 ± 0.29 vs. 1.66 ± 0.34 , $P > 0.05$) and so was the post-operative TAPSE at discharge (1.52 ± 0.30 vs. 1.43 ± 0.32 , $P > 0.05$), at 1 month (1.6 ± 0.27 vs. 1.43 ± 0.032 , $P > 0.05$) and at last follow-up (1.79 ± 0.15 , median 1.8 vs. 1.72 ± 0.17 , median 1.7 $P > 0.05$).

Conclusion: Both t-RA and t-RA/RV approaches provide safe palliation for patients with TOF. A limited right ventriculotomy neither leads to deleterious effects on early RV function nor does it increase the incidence of arrhythmias at early follow-up. Larger studies with longer follow-up are needed to further address these issues.

DOI: 10.4103/apc.APC_40_18

PMCID: PMC6343382

PMID: 30745763

Conflict of interest statement: There are no conflicts of interest.

280: Tandon PN. Remembering India's first, "unrecognized" neuroscientist: Acharya Jagdish Chandra Bose. *Neurol India*. 2019 Jan-Feb;67(1):17-19. doi: 10.4103/0028-3886.253581. PubMed PMID: 30860087.

281: Thekkur P, Kumar AN, Chinnakali P, Selvaraju S, Bairy R, Singh AR, Nirgude A, Selvaraj K, Venugopal V, Shastri S. Outcomes and implementation challenges of using daily treatment regimens with an innovative adherence support tool among HIV-infected tuberculosis patients in Karnataka, India: a mixed-methods study. *Glob Health Action*. 2019;12(1):1568826. doi: 10.1080/16549716.2019.1568826. PubMed PMID: 30712507; PubMed Central PMCID: PMC6366428.

BACKGROUND: In India, a new care package consisting of (i) daily regimen with fixed-dose combination drugs, collected once-a-month and self-administered by the patient, (ii) 'one stop service' at antiretroviral treatment (ART) centre for both HIV and tuberculosis (TB) treatment and (iii) technology-enabled adherence support (99DOTS, which required patients to give a missed phone call after consuming drugs) was piloted for treatment of TB among HIV-infected TB patients. Conventional care included intermittent regimen (drugs consumed thrice-weekly) delivered under direct observation of treatment supporter and the patients needing to visit TB and HIV care facilities, separately for treatment.

OBJECTIVE: To assess the effect of new care package on TB treatment outcomes among HIV-TB patients registered during January-December 2016, as compared to conventional care and explore the implementation challenges.

METHODS: A mixed-methods study was conducted in four districts of Karnataka, India where new care package was piloted in few ART centres while the rest provided conventional care. Quantitative component involved a secondary cohort analysis of routine programme data. Adjusted relative risk (aRR) was calculated using Poisson regression to measure association between new care package and unsuccessful treatment outcome. We conducted in-depth interviews with healthcare providers and patients to understand the challenges.

RESULTS: Unsuccessful TB treatment outcomes (death, loss to follow-up and failure) were higher in new care package ($n = 871$) compared to conventional care ($n = 961$) (30.5% vs 23.4%; P value < 0.001) and aRR was 1.3 (95% CI: 1.1-1.7). Key challenges included patients' inability to give missed call, increased work load for ART staff, reduced patient-provider interaction, deficiencies in training and lack of role clarity among providers and reduced involvement of TB program staff.

CONCLUSION: With new care package, TB treatment outcomes did not improve as expected and conversely declined compared to conventional care. TB and HIV programs need to address the operational challenges to improve the outcomes.

DOI: 10.1080/16549716.2019.1568826

PMCID: PMC6366428

PMID: 30712507

282: Thelengana A, Shukla G, Srivastava A, Singh MB, Gupta A, Rajan R, Vibha D, Pandit AK, Prasad K. Cognitive, behavioural and sleep-related adverse effects on introduction of levetiracetam versus oxcarbazepine for epilepsy. *Epilepsy Res.* 2019 Feb;150:58-65. doi: 10.1016/j.epilepsyres.2019.01.004. Epub 2019 Jan 8. PubMed PMID: 30641352.

OBJECTIVE: There is limited literature on cognitive, behaviour and sleep-related adverse effects of levetiracetam and oxcarbazepine among adult epilepsy patients, except for what is available from the initial efficacy trials. This study was initiated with the aim to evaluate the incidence and prevalence of various cognitive, behaviour and sleep-related adverse effects of levetiracetam versus oxcarbazepine among people with epilepsy.

METHODS: The study was conducted in two parts: part A was a cross-sectional study, and part B was a longitudinal study. Trail making test A & B, digit symbol substitution test, Stroop colour and word test, controlled oral word association test and PGI memory scale, Neuropsychiatric Inventory, sleep log and ESS-I were used for assessment of cognitive, behaviour and sleep-related adverse effects.

RESULTS: In the cross-sectional as well as prospective study, no significant difference was observed in the cognitive performance of patients in levetiracetam and oxcarbazepine group in any of the cognitive assessment. Among 120 patients enrolled in the cross-sectional study, significantly higher number of patients in the levetiracetam group compared to the oxcarbazepine group, had agitation/aggression (20% vs 10%, $p=0.047$) and irritability (26.7% vs 3.3%, $p=0.007$). Among 132 patients enrolled in the prospective study, significantly higher increase in the domain score of agitation/aggression (14.5% vs 1.6%, $p=0.028$) and irritability (17.7% vs 1.6%, $p=0.018$) was observed in the levetiracetam group compared to oxcarbazepine group. A significantly higher proportion of patients in the oxcarbazepine group had hypersomnolence (11.3% vs 1.6%, $p=0.026$), as compared to the levetiracetam group.

SIGNIFICANCE: On cross-sectional as well as on longitudinal assessment, nearly one-fifth of patients on levetiracetam have behaviour related adverse effects, with dose modification required for half among these. Nearly 11% of patients on oxcarbazepine reported sleep-related adverse effects (higher total sleep duration per 24h).

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PMID: 30641352

283: Titiyal JS, Kaur M, Rathi A, Falera R. Femtosecond laser-assisted successful management of subluxated cataractous lens with vitreous in anterior chamber. *Indian J Ophthalmol.* 2019 Jan;67(1):155-157. doi: 10.4103/ijo.IJO_764_18. PubMed PMID: 30574931; PubMed Central PMCID: PMC6324126.

Femtosecond laser-assisted cataract surgery was performed in a case of posttraumatic cataract with six clock hours subluxation and vitreous in the anterior chamber (AC). Femtosecond laser pretreatment allowed a closed-chamber creation of corneal incisions, capsulotomy, and lens fragmentation with minimal sudden lens-diaphragm movements and zonular stress. Integrated imaging systems allowed customization of the size and position of capsulotomy and nuclear fragmentation, based on the extent and site of subluxation. Presence of vitreous in AC did not hamper femtosecond laser application. Triamcinolone-assisted vitrectomy was performed before phacoemulsification and after implanting the intraocular lens (IOL). Postoperative uncorrected visual acuity was 20/20 with a stable IOL.

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PMCID: PMC6324126
PMID: 30574931 [Indexed for MEDLINE]

Conflict of interest statement: None

284: Tiwari DP, Razik A, Das CJ, Kumar R. Prospective analysis of factors

predicting feasibility & success of longitudinal intussusception vasoepididymostomy in men with idiopathic obstructive azoospermia. Indian J Med Res. 2019 Jan;149(1):51-56. doi: 10.4103/ijmr.IJMR_1192_17. PubMed PMID: 31115375.

Background & objectives: : Microsurgical reconstruction for idiopathic obstructive azoospermia is a challenging procedure, and selection of appropriate patients is important for successful outcomes. This prospective study was done to evaluate the ability of scrotal ultrasound measurements to predict the surgical feasibility and determine factors that could predict a patent anastomosis following vaso-epididymal anastomosis (VE) in men with idiopathic obstructive azoospermia.

Methods: : In this prospective study, men diagnosed with idiopathic obstructive azoospermia, scheduled for a longitudinal intussusception VE, underwent a scrotal ultrasound measurement of testicular and epididymal dimensions. During surgery, site and type of anastomosis, presence of sperms in the epididymal fluid and technical satisfaction with the anastomosis were recorded. All men where VE could be performed were followed up for appearance of sperms in the ejaculate. Ultrasound parameters were compared between men who had a VE versus those with negative exploration. Predictive factors were compared between men with or without a patent anastomosis.

Results: : Thirty four patients were included in the study conducted between September 2014 and August 2016 and a VE was possible in only 19 (55%) patients. Of these 19 patients, six had a patent anastomosis with one pregnancy. Preoperative ultrasound measurements could not identify patients where a VE could not be performed. Motile sperm in the epididymal fluid was the only significant predictor of a successful anastomosis.

Interpretation & conclusion: : Forty five per cent of men planned for a VE for idiopathic obstructive azoospermia could not undergo a reconstruction. Ultrasound assessment of testicular and epididymal dimensions could not predict the feasibility of performing a VE. The presence of motile sperms in the epididymal fluid was the only significant predictor of a patent VE in our study.

DOI: 10.4103/ijmr.IJMR_1192_17
PMID: 31115375

Conflict of interest statement: None

285: Tiwari R, Marwah S, Roy A, Singhal M. Novel technique to manage pacemaker exposure with buried flap reconstruction: case series. Heart Asia. 2019 Jan 10;11(1):e011086. doi: 10.1136/heartasia-2018-011086. eCollection 2019. PubMed PMID: 30728862; PubMed Central PMCID: PMC6340535.

Objective: Exposure of implantable electrical devices may increase morbidity and mortality significantly. Usually superficial infections are conservatively managed whereas invasive infections necessitate complete capsulectomy, sub-pectoral placement or implant exchange. Most commonly inadequate soft tissue coverage, soft tissue thinning and scar dehiscence over the edge of the pacemaker are the primary predisposing event. Multiple local surgical options have been described, however, with all these designs, the final scar still remains over the edge of the pacemaker and continue to have a tendency of thinning out with time. We have described a local skin flap which can be de-epithelialized and partially buried under the skin to increase the thickness over the pacemaker edge, thereby preventing further recurrence.

Methods: Three patients admitted in the Cardiology Department presented with impending exposure (n=2) and exposed implant (n=1) over the edge of pacemaker with superficial infection. Local modified rotation skin flap which was de-epithelialized and partially buried under the skin to increase the thickness over the pacemaker edge was performed under local anaesthesia in all the cases.

Results: Flaps settled well in all patients with no evidence of infection, scar dehiscence and recurrence over a follow-up period of 2 years.

Conclusions: This flap technique is recommended for cases of impending pacemaker exposure resulting due to scar dehiscence over the edge and helps by addressing the predisposing factors at an initial stage. In our experience, this technique

also helped to salvage exposed pacemaker with superficial infection. To our best of knowledge this technique has not been described before in the literature.

DOI: 10.1136/heartasia-2018-011086

PMCID: PMC6340535

PMID: 30728862

Conflict of interest statement: Competing interests: None declared.

286: Tiwari V, Goyal A, Nagar M, Santoshi JA. Hyperphosphataemic tumoral calcinosis. *Lancet*. 2019 Jan 12;393(10167):168. doi: 10.1016/S0140-6736(18)33045-9. Erratum in: *Lancet*. 2019 Jan 26;393(10169):320. PubMed PMID: 30638581.

287: Trikha V, Gaba S, Agrawal P, Das S, Kumar A, Chowdhury B. CT based management of high energy tibial plateau fractures: A retrospective review of 53 cases. *J Clin Orthop Trauma*. 2019 Jan-Feb;10(1):201-208. doi: 10.1016/j.jcot.2017.11.005. Epub 2017 Nov 21. PubMed PMID: 30705560; PubMed Central PMCID: PMC6349673.

Objectives: The management of high energy tibial plateau fractures is a surgical challenge. Recently described Luo's classification is based on CT scans and is more objective with a better inter-observer agreement as compared to Schatzker and AO/OTA classifications. We describe the functional results of a series of 53 cases classified and managed according to the Luo's column concept.

Methods: A retrospective review of 53 high energy tibial plateau fractures, operated between January 2012 and March 2015 at a Level I trauma center, was performed. CT scans were used to classify these injuries based on the number of columns involved. Plating configuration and surgical approach were chosen based on the number of independent articular fragments on axial sections at the level of fibular head.

Results: 1 one-column, 51 two-column and 1 three-column fractures were studied. Triple plating was done in 5 patients. Mean follow-up was 2.7 years and mean Insall Knee score was 95.42. Four patients had varus malalignment and 1 had joint depression in the post-operative period. These were due to imperfect reduction during the surgery itself, and no case of late collapse was detected.

Conclusion: Utilizing Luo's classification for treating these complex injuries will assist in better understanding of fracture pattern and hence help in achieving a better functional outcome. Each fractured column needs to be independently addressed.

DOI: 10.1016/j.jcot.2017.11.005

PMCID: PMC6349673

PMID: 30705560

288: Tripathi P, Gupta A, Tyagi S. Compound Heterozygote of Hb D-Punjab and Hb D-Iran; An Interesting Finding. *Indian J Hematol Blood Transfus*. 2019 Jan;35(1):172-173. doi: 10.1007/s12288-018-1021-2. Epub 2018 Oct 1. PubMed PMID: 30828167; PubMed Central PMCID: PMC6369074.

289: Tripathy K, Das A, Chawla R, Temkar S. A young female with subretinal thread-like structures. *Oman J Ophthalmol*. 2019 Jan-Apr;12(1):67. doi: 10.4103/ojo.OJO_152_2016. PubMed PMID: 30787543; PubMed Central PMCID: PMC6380156.

290: Varghese C, Nongkynrih B, Onakpoya I, McCall M, Barkley S, Collins TE. Better health and wellbeing for billion more people: integrating non-communicable diseases in primary care. *BMJ*. 2019 Jan 28;364:1327. doi: 10.1136/bmj.1327. PubMed PMID: 30692118; PubMed Central PMCID: PMC6349006.

291: Venkatesh P, Takkar B. Proposed Classification System for Retinal Capillary Angiomatosis. *Ophthalmic Res.* 2019;61(2):115-119. doi: 10.1159/000494498. Epub 2018 Nov 29. PubMed PMID: 30497078.

Retinal angiomas are rare tumors that develop within the vascular bed of the retina. Their occurrence may be sporadic or as part of the multisystem disorder called von Hippel-Lindau disease. It is well established in literature that retinal angiomas have a natural history of evolving as small aneurysmal dilatations and progressing to vision-threatening retinal detachments. Several approaches to the management of these angiomas have been reported in the literature, but it is difficult to decipher which modality is best suited for which type of angioma. A classification of retinal angiomas is proposed herein. A classification system may help in developing future guidelines for the study, screening, treatment, and prognostication of patients with retinal angiomas.

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292: Verma P, Kureel AK, Saini S, Prakash S, Kumari S, Kottarath SK, Srivastava SK, Bhat M, Dinda AK, Thakur CP, Sharma S, Rai AK. Leishmania donovani reduces the levels of retinoic acid-synthesizing enzymes in infected macrophages and favoring its own survival. *Parasitol Res.* 2019 Jan;118(1):63-71. doi: 10.1007/s00436-018-6115-0. Epub 2018 Oct 18. PubMed PMID: 30338372.

People suffering from malnutrition become susceptible to the infection like *Leishmania sp.*, as it results in a compromised immune response. Retinoic acid (RA), an important constituent of nutrition, shows an immune-modulatory activity. However, its role in the containment of infection is not yet ascertained, particularly in case of visceral leishmaniasis (VL). VL patients (n=10) and healthy endemic controls (n=9) were recruited to measure the serum levels of RA. An in vitro model of *Leishmania* infection using the murine $\text{m}\phi$ cell line J774.1 was used to investigate the RA-synthesizing enzymes (RALDH-1 and RALDH-2). Parasite loads among infected $\text{m}\phi$ were measured by quantitative expression of kDNA in the presence of an inhibitor of the RALDH-2 enzyme. We found a significant decrease in the serum levels of RA in VL cases. Importantly, we observed decreased levels of RALDH-1 and RALDH-2 among *L. donovani*-infected $\text{m}\phi$ along with simultaneous decrease as well as increase in the Th-1 and Th-2-associated factors, respectively. Furthermore, the pretreatment of $\text{m}\phi$ with an RALDH-2 inhibitor improved parasite in vitro infection. Our findings show impaired RA pathway among infected $\text{m}\phi$ and indicate that an intact RA pathway is critical for anti-*Leishmania* immune response. Graphical abstract .

DOI: 10.1007/s00436-018-6115-0

PMID: 30338372 [Indexed for MEDLINE]

293: Verma VK, Malik S, Narayanan SP, Mutneja E, Sahu AK, Bhatia J, Arya DS. Role of MAPK/NF- κ B pathway in cardioprotective effect of Morin in isoproterenol induced myocardial injury in rats. *Mol Biol Rep.* 2019 Feb;46(1):1139-1148. doi: 10.1007/s11033-018-04575-9. Epub 2019 Jan 21. PubMed PMID: 30666500.

Oxidative stress plays a major role in myocardial injury. Morin, a bioflavonoid has known to possess various biological activities in previous studies. Hence, this study evaluated the cardioprotective mechanism(s) of Morin against isoproterenol induced myocardial necrosis in rats. Male albino Wistar rats were divided into five groups (n=8) i.e., I (normal), II (ISO-control), III, IV and V (morin 20, 40 and 80 mg/kg respectively). Groups III, IV and V were treated orally with daily doses of Morin accordingly for 28 days. On 26th and 27th day, a single injection of isoproterenol was injected (85 mg/kg s.c.) at 24 h interval to induce myocardial necrosis in group II, III, IV and V. On 28th day, hemodynamic parameters were evaluated, animals were euthanised and heart was excised for measurement of various parameters. In ISO-control rats, there was

deterioration of hemodynamic parameters, decreased anti-oxidants levels, increased cardiac injury markers and pro-inflammatory cytokines (TNF- α and IL-6). Also, there was increased level of Bax, Caspase-3, p-JNK, p-38 and NF- κ B and decreased expression of Bcl-2 and p-ERK1/2 in ISO-C group. Morin dose-dependently improved hemodynamic profile, increased anti-oxidant levels, normalized myocardial architecture and reduced inflammatory markers and apoptosis. Furthermore, immunoblot analysis of MAPK pathway proteins demonstrated the mechanism responsible for anti-apoptotic and anti-inflammatory potential of morin. Thus, this study substantiated the beneficial effect of Morin by virtue of its modulation of MAPK pathway in myocardial injury.

DOI: 10.1007/s11033-018-04575-9

PMID: 30666500

294: Vincent V, Thakkar H, Aggarwal S, Mridha AR, Ramakrishnan L, Singh A. ATP-binding cassette transporter A1 (ABCA1) expression in adipose tissue and its modulation with insulin resistance in obesity. *Diabetes Metab Syndr Obes.* 2019 Feb 25;12:275-284. doi: 10.2147/DMSO.S186565. eCollection 2019. PubMed PMID: 30881070; PubMed Central PMCID: PMC6395069.

Purpose: Adipose tissue dysfunction is at the center of metabolic dysfunctions associated with obesity. Through studies in isolated adipocytes and mouse models, ATP-binding cassette transporter A1 (ABCA1) expression in the adipose tissue has been shown to regulate high-density lipoprotein (HDL) cholesterol levels in the circulation and insulin sensitivity at both adipose tissue and whole-body levels. We aimed to explore the possible link between ABCA1 expression in the adipose tissue and metabolic derangements associated with obesity in humans.

Patients and methods: This exploratory study among individuals who were lean (body mass index [BMI]: 22.3 \pm 0.34 kg/m², n=28) and obese (BMI: 44.48 \pm 5.3 kg/m², n=34) compared the expression of ABCA1, adiponectin and GLUT4 (SLC2A4) in visceral and subcutaneous adipose tissue using quantitative real-time PCR and immunohistochemistry. Homeostatic model assessment for insulin resistance (HOMA-IR) and adipose tissue insulin resistance (adipo-IR) were used as insulin resistance markers.

Results: Visceral adipose tissue from individuals who were obese had significantly lower ABCA1 (P=0.04 for mRNA and protein) and adiponectin (P=0.001 for mRNA) expression compared to that from lean individuals. Subcutaneous adipose tissue did not show any significant difference in the expression. When individuals were divided into insulin-sensitive (IS) and insulin-resistant (IR) groups based on HOMA-IR, IR individuals had lower ABCA1 (P=0.0001 for mRNA and P=0.009 for protein) expression compared to IS individuals in visceral adipose tissue, but not in subcutaneous adipose tissue. The difference was significant after adjusting for age, gender and BMI. ABCA1 mRNA expression in visceral adipose tissue correlated negatively with both HOMA-IR (r=-0.44, P=0.0003) and adipo-IR (r=-0.35, P=0.005) after adjusting for age, gender and BMI. ABCA1 expression in either visceral or subcutaneous adipose tissue did not have any significant correlation with HDL cholesterol levels or mean adipocyte area.

Conclusion: Obesity and insulin resistance are associated with lower expression of ABCA1 in visceral adipose tissue in humans.

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PMCID: PMC6395069

PMID: 30881070

Conflict of interest statement: Disclosure The authors report no conflicts of interest in this work

295: Vishnu VY, Padma Srivastava MV. Innovations in Acute Stroke Reperfusion Strategies. *Ann Indian Acad Neurol.* 2019 Jan-Mar;22(1):6-12. doi: 10.4103/aian.AIAN_263_18. PubMed PMID: 30692752; PubMed Central PMCID: PMC6327700.

Vascular neurology is witnessing unprecedented innovations in the management of acute ischemic stroke, especially in reperfusion strategies. The emergence of

mechanical thrombectomy with new generation devices has revolutionized the treatment of acute ischemic stroke with large vessel occlusion. The reperfusion strategies are evolving with the extension of the window period for thrombolysis and endovascular therapy through the concept of "tissue clock" in addition to the established "time clock." The newer generation of thrombolytic drugs like tenecteplase are promising exciting times ahead in acute stroke care. In this "viewpoint," the evolution of reperfusion therapy in acute ischemic stroke will be discussed followed by recent innovations in reperfusion strategies.

DOI: 10.4103/aian.AIAN_263_18
 PMCID: PMC6327700
 PMID: 30692752

Conflict of interest statement: There are no conflicts of interest.

296: Viswanathan R, George S, Murhekar MV, Abraham AM, Singh MP, Jadhav SM, Nag V, Naik S, Raut C, Munivenkatappa A, Gupta M, Jagtap V, Kaduskar O, Gupta N, Sapkal GN. Comparison of two commercial ELISA kits for detection of rubella specific IgM in suspected congenital rubella syndrome cases and rubella IgG antibodies in a serosurvey of pregnant women. *Diagn Microbiol Infect Dis*. 2019 Jan 24. pii: S0732-8893(19)30082-3. doi: 10.1016/j.diagmicrobio.2019.01.009. [Epub ahead of print] PubMed PMID: 30782464.

Enzyme linked immunosorbent assay (ELISA) for antibody identification, is important for laboratory confirmation of rubella infection in different settings. The Enzygnost rubella ELISA, widely used in the World Health Organization (WHO) Global Measles and Rubella Laboratory Network, is expensive and often unavailable. Qualitative and quantitative performance of the Euroimmun ELISA was compared with the Enzygnost ELISA, for detection of rubella specific IgM, using 283 sera collected from suspected congenital rubella syndrome (CRS) patients and IgG antibodies using 435 sera from a serosurvey among pregnant women. Good qualitative agreement was observed for detection of both rubella specific IgM (94.7% agreement and κ of 0.86) and IgG (96.3% agreement and κ of 0.84). Bland-Altman analysis for IgG yielded a mean difference of 0.781 IU/ml with 97.1% values within ± 2 SD of the mean difference. Our study findings suggest that Euroimmun ELISA may be considered for detection of rubella specific IgM in suspected CRS cases and rubella specific IgG in surveillance studies.

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DOI: 10.1016/j.diagmicrobio.2019.01.009
 PMID: 30782464

297: Yadav K, Goel AD, Yadav V, Upadhyay RP, Palepu S, Pandav CS. Meta-analysis of efficacy of iron and iodine fortified salt in improving iron nutrition status. *Indian J Public Health*. 2019 Jan-Mar;63(1):58-64. doi: 10.4103/ijph.IJPH_420_17. PubMed PMID: 30880739.

Background: Salt fortification with iron is a potential strategy to increase population-level iron intake. The current evidence regarding double-fortified salt (DFS) in improving iron nutrition status is equivocal.
Objective: To study the efficacy of DFS as compared to iodine fortified salt (IS) in improving iron nutrition status.
Methods: Randomized controlled trials comparing DFS and IS until August 2016 were systematically searched across multiple databases to assess for change in mean hemoglobin (Hb), prevalence of anemia, iron deficiency (ID), ID anemia (IDA), serum ferritin, and serum transferrin receptor (TfR). Meta-analysis was performed using R software.
Results: Of the initial 215 articles retrieved using the predetermined search strategy, data from 10 comparisons of DFS and IS across 8 randomized controlled trials are included. There was significant heterogeneity across included studies and the studies were of low to very low quality as per GRADE criteria. DFS significantly increased mean Hb by 0.44 g/dl (95% confidence interval [CI]: 0.16, 0.71) and significantly decreased anemia (risk difference -0.16; 95% CI: -0.26,

-0.06) and ID (risk difference -0.20; 95% CI: -0.32, -0.08) as compared to IS. There was no statistically significant difference in change in ferritin levels (mean difference 0.62 µg/L; 95% CI: -0.12, 1.37), serum TfR levels (mean difference -0.23 mg/dL; 95% CI: -0.85, 0.38), and IDA (risk difference -0.08; 95% CI: -0.28, 0.11).

Conclusion: DFS is a potentially efficacious strategy of addressing anemia as a public health problem at population level. There is a need for effectiveness trials before DFS can be scaled up in program mode at population level.

DOI: 10.4103/ijph.IJPH_420_17
PMID: 30880739

Conflict of interest statement: None

298: Yadav P, Kumar M, Bansal R, Kaur P, Ethayathulla AS. Structure model of ferrochelatase from *Salmonella Typhi* elucidating metalation mechanism. *Int J Biol Macromol*. 2019 Apr 15;127:585-593. doi: 10.1016/j.ijbiomac.2019.01.066. Epub 2019 Jan 17. PubMed PMID: 30660563.

A homology model of ferrochelatase (HemH), the heme biosynthesis terminal step enzyme from *Salmonella Typhi* was generated to understand the mechanism of metal insertion into protoporphyrin IX for heme biosynthesis. The overall fold of membrane associated ferrochelatase (StFc) from *S. Typhi* is similar to human and Yeast ferrochelatase than *Bacillus subtilis*, and *Bacillus anthracis*. An insertion of 16 amino acid residues in helical switch having hydrophobic patch proposed to interact with membrane lipids and in opening and closing of heme binding cleft. The sequence analysis and the docking study revealed that the protoporphyrin binding site in StFc has a crucial replacement of Tyr/Met to Leu13 unique in comparison to other known structures, where Tyr13 observed in *B. subtilis*/*B. anthracis* while Met76 in human/yeast play important role in holding protoporphyrin in optimal orientation for metalation. A sitting-a-top (SAT) complex mechanism for metalation is proposed with His194 and Glu264 lie at the bottom and Leu13 on the top of the porphyrin ring. In addition, an entry and exit mechanism is also proposed for protoporphyrin binding into cavity by opening and closing of helical switch using molecular dynamics simulation studies of Apo and heme complexed model structure of *S. Typhi* HemH.

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DOI: 10.1016/j.ijbiomac.2019.01.066
PMID: 30660563

299: Yadav R, Yadav RK, Khadgawat R, Pandey RM, Upadhyay AD, Mehta N. Randomized Controlled Trial of A 12-Week Yoga-Based (Including Diet) Lifestyle vs. Dietary Intervention on Cardio-Metabolic Risk Factors and Continuous Risk Score in Indian Adults with Metabolic Syndrome. *Behav Med*. 2019 Jan 7:1-12. doi: 10.1080/08964289.2018.1538098. [Epub ahead of print] PubMed PMID: 30615583.

Metabolic syndrome, a prediabetic and precardiovascular pathologic condition that begins early in life, tracks into adulthood and magnifies with age. Randomized controlled trials evaluating efficacy of yoga-based lifestyle vs. dietary intervention on metabolic syndrome are lacking. Here, the efficacy of a 12-week yoga-based lifestyle intervention vs. dietary intervention on cardio-metabolic risk factors and metabolic syndrome risk scores have been assessed in Indian adults with metabolic syndrome. In this two-arm, open label, parallel group, randomized controlled trial, 260 adults (20-45 years) diagnosed with metabolic syndrome as per joint interim statement, 2009 were randomized to yoga-based (including diet) lifestyle or dietary intervention alone (n=130, each) for 12 weeks. Primary endpoints were the 12-week changes in cardio-metabolic risk factors and metabolic risk scores. The secondary endpoints were the 12-week changes in the proportion of subjects recovered from metabolic syndrome, dietary intake, and physical activity. Intent-to-treat analysis was performed including all the subjects with baseline data with imputed missing data. Treatment×time interaction showed yoga-based lifestyle intervention had a greater treatment

effect over dietary intervention by significantly reducing waist circumference, continuous metabolic syndrome z-score, and dietary intake/day while significantly increasing physical activity. High-density lipoprotein cholesterol showed a significantly greater reduction following dietary intervention than yoga-based lifestyle intervention. A significantly greater proportion of subjects recovered from metabolic syndrome in yoga-based lifestyle (45.4%) vs. dietary intervention group (32.3%). A 12-week yoga-based lifestyle intervention is more efficacious than usual dietary intervention in improving cardio-metabolic risk factor and metabolic risk score in Indian adults with metabolic syndrome.

DOI: 10.1080/08964289.2018.1538098

PMID: 30615583

300: Yagnick NS, Singh R, Tripathi M, Mohindra S, Deora H, Suri A, Gupta SK. Need for Grass Root Innovation in Developing Countries: Case for Stationary Binder Clips in Scalp Hemostasis. *World Neurosurg.* 2019 Jan;121:222-226. doi: 10.1016/j.wneu.2018.09.182. Epub 2018 Oct 4. PubMed PMID: 30292660.

OBJECTIVE: The primary training in any surgical practice starts with tissue handling and effective hemostasis. Neurosurgical procedures start with an incision in the scalp and require summative use of mechanical hemostats and bipolar coagulation to achieve hemostasis. Though Raney clips are the most popular and effective in maintaining hemostasis, their high cost and nonreusability become deterrents for routine use in resource-stricken environments.

METHODS: We have compared stationery binder clips of different sizes with Raney clips on the parameters of effectiveness, availability, and cost. Binder clips were also used in intraoperative settings for scalp hemostasis. The comparative efficacy, additional usage of cautery, and need for sterilization are also discussed.

RESULTS: We describe our experience with simple stationery metal binder clips in maintaining effective hemostasis in a cost-effective manner. The 25-mm size binder clip exerts same force as a Raney clip without any tissue injury. Practical application revealed effective scalp hemostasis up to blood pressure of 150 mm Hg.

CONCLUSIONS: Stationery binder clips are a cost-effective, ready-to-use alternative for standard Raney clips.

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PMID: 30292660 [Indexed for MEDLINE]

301: Yoosuf S, Makharia GK. Evolving Therapy for Celiac Disease. *Front Pediatr.* 2019 May 14;7:193. doi: 10.3389/fped.2019.00193. eCollection 2019. Review. PubMed PMID: 31157194; PubMed Central PMCID: PMC6530343.

Gluten is known to be the main triggering factor for celiac disease (CeD), an immune-mediated disorder. CeD is therefore managed using a strict and lifelong gluten-free diet (GFD), the only effective treatment available currently. However, the GFD is restrictive. Hence, efforts are being made to explore alternative therapies. Based on their mechanisms of action on various molecular targets involved in the pathogenesis of CeD, these therapies may be classified into one of the following five broad approaches. The first approach focuses on decreasing the immunogenic content of gluten, using strategies like genetically modified wheat, intra-intestinal gluten digestion using glutenases, microwave thermal treatment of hydrated wheat kernels, and gluten pretreatment with either bacterial/ fungal derived endopeptidases or microbial transglutaminase. The second approach involves sequestering gluten in the gut lumen before it is digested into immunogenic peptides and absorbed, using binder drugs like polymer p(HEMA-co-SS), single chain fragment variable (scFv), and anti-gluten antibody AGY. The third approach aims to prevent uptake of digested gluten through intestinal epithelial tight junctions, using a zonulin antagonist. The fourth

approach involves tissue transglutaminase (tTG) inhibitors to prevent the enhancement of immunogenicity of digested gluten by the intestinal tTG enzyme. The fifth approach seeks to prevent downstream immune activation after uptake of gluten immunogenic peptides through the intestinal mucosal epithelial layer. Examples include HLA-DQ2 blockers that prevent presentation of gluten derived-antigens by dendritic cells to T cells, immune-tolerizing therapies like the vaccine Nexvax2 and TIMP-Glia, cathepsin inhibitors, immunosuppressants like corticosteroids, azathioprine etc., and anti-cytokine agents targeting TNF- α and interleukin-15. Apart from these approaches, research is being done to evaluate the effectiveness of probiotics/prebiotics, helminth therapy using *Necator americanus*, low FODMAP diet, and pancreatic enzyme supplementation in CeD symptom control; however, the mechanisms by which they play a beneficial role in CeD are yet to be clearly established. Overall, although many therapies being explored are still in the pre-clinical phase, some like the zonulin antagonist, immune tolerizing therapies and glutenases have reached phase II/III clinical trials. While these potential options appear exciting, currently they may at best be used to supplement rather than supplant the GFD.

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