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List of publications of AIIMS, New Delhi
for the month of September, 2014
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1: Agarwal KK, Sharma P, Kc SS, Bal C, Kumar R. Giant thoracic ganglioneuroma in a pediatric patient: Staging and restaging with (18)F-FDG PET-CT. *Rev Esp Med Nucl Imagen Mol*. 2014 Sep-Oct;33(5):310-1. doi: 10.1016/j.remn.2013.10.005. Epub 2014 Jul 10. PubMed PMID: 25017382.

2: Agarwal KK, Karunanithi S, Roy SG, Bal C, Kumar R. 99mTc-MDP SPECT/CT Demonstrating Extraosseous Periarticular Amyloid Deposits in Primary Systemic Amyloidosis Associated With Multiple Myeloma. *Clin Nucl Med*. 2014 Sep 30. [Epub ahead of print] PubMed PMID: 25275414.

Amyloidosis is a rare disorder characterized by variable extracellular accumulation of a complex substance consisting of proteinaceous fibrils (amyloid fibrils) and nonfibrillar glycoprotein or amyloid P component. We present a case of a primary systemic amyloidosis associated with multiple myeloma in a 48-year-old woman whose Tc-MDP SPECT/CT study revealed extraosseous periarticular uptake in amyloid deposits with no abnormal focal tracer uptake in the bone.

3: Agarwal M, Purohit AH, Mahapatra M, Kumar R, Mishra P, Seth T, Saxena R. Pleural effusion as an unusual initial presentation of acute myeloid leukemia. *Indian J Hematol Blood Transfus*. 2014 Sep;30(3):195-6. doi: 10.1007/s12288-014-0350-z. Epub 2014 Feb 18. PubMed PMID: 25114407; PubMed Central PMCID: PMC4115077.

Pleural effusions in acute myeloid leukemia (AML) can have wide differential diagnosis, however AML presenting as pleural effusion with leukemic infiltration is rarely documented. A 22 year old male presented with pleural effusion for 3 months and subsequently diagnosed as AML M2, which prompted us for this communication.

4: Aggarwal S, Devaraja K, Sharma SC, Das SN. Expression of vascular endothelial growth factor (VEGF) in patients with oral squamous cell carcinoma and its clinical significance. *Clin Chim Acta*. 2014 Sep 25;436:35-40. doi: 10.1016/j.cca.2014.04.027. Epub 2014 May 13. PubMed PMID: 24833243.

BACKGROUND: Vascular endothelial growth factor (VEGF) is an important angiogenic cytokine that plays an important role in growth, development and progression of the tumour. We investigated expression of VEGF in oral cancer patients and its effect on proliferation of OSCC cell lines.

METHODS: Cell and tissue expression of VEGF was determined by qRT-PCR, western blot and immunofluorescence assay while serum level of VEGF was determined by ELISA. Tumour cell proliferation was assessed by MTT assay.

RESULTS: Serum VEGF levels were significantly higher in oral cancer patients ($p < 0.0001$) as compared to normal controls that further showed an increasing trend with clinical stage and lymph node involvement. In ROC analysis serum VEGF level distinguished between patients and normal subjects with a higher sensitivity (65.71%) and specificity (66.67%). It was significantly upregulated in tumour tissues and in OSCC cell lines. Exogenous VEGF treatment significantly enhanced proliferation of SCC-4 and SCC-9 cell lines.

CONCLUSION: It seems therefore that serum VEGF level may be a reliable biomarker and may be a potential target for development of chemopreventive and chemotherapeutic strategies for patients with tobacco-related oral carcinoma.

5: Ahmed NR, Tripathy K, Kumar V, Gogia V. Choroidal coloboma in a case of tay-sachs disease. *Case Rep Ophthalmol Med*. 2014;2014:760746. doi: 10.1155/2014/760746. Epub 2014 Sep 10. PubMed PMID: 25295204; PubMed Central PMCID: PMC4177187.

Coloboma as an ocular finding has been documented in various syndromes. Here we have a case of infantile Tay-Sachs disease associated with unilateral choroidal

coloboma. To the best of our knowledge, such an association has not been documented in the literature. Whether such an association is a matter of chance or signifies the involvement of ganglioside metabolism in ocular embryogenesis remains to be elucidated.

6: Akhter MS, Biswas A, Rashid H, Devi L, Behari M, Saxena R. Screening of the NOS3 gene identifies the variants 894G/T, 1998C/G and 2479G/A to be associated with acute onset ischemic stroke in young Asian Indians. *J Neurol Sci.* 2014 Sep 15;344(1-2):69-75. doi: 10.1016/j.jns.2014.06.025. Epub 2014 Jun 20. PubMed PMID: 24986538.

INTRODUCTION: Nitric oxide levels and NOS3 gene variants play a pivotal role in the development of vascular diseases/stroke. We attempted to determine the role of NOS3 gene variants and plasma NO levels towards the development of ischemic stroke in young Asian-Indians.

METHODS: One hundred ischemic stroke patients and 200 age and sex matched control study subjects were screened for NOS3 gene variants using SSCP [single stranded confirmation polymorphism] and PCR based techniques. Plasma NO metabolites [NOx] were evaluated for the investigated population.

RESULTS: Significantly higher NOx levels were observed in controls [controls 56.63±25.92 µmol/L, patients 34.73±19.88 µmol/L, p<0.001]. The SNPs [single nucleotide polymorphisms] 894G/T, 1998C/G and 2479G/A were found associated with the disease phenotype with the most significant finding observed for 894G/T [$\chi^2=36.68$, p<0.001]. The SNPs 894G/T and 2479G/A were significantly associated with NOx levels [p=0.001]. The haplotypes TCA and TGA were overrepresented in the patient population [p<0.0001].

CONCLUSION: Two NOS3 SNP [894G/T and 2479G/A] variants and NOx levels are associated with ischemic stroke in young Asian Indians. These NOS3 SNPs might represent genetic risk factors for ischemic stroke in young Asian Indians. However these observations need to be confirmed by larger replicate/cross-sectional studies.

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7: Akhter MS, Biswas A, Rashid H, Devi L, Behari M, Saxena R. Screening of the GPX3 Gene Identifies the "T" Allele of the SNP -861A/T as a Risk for Ischemic Stroke in Young Asian Indians. *J Stroke Cerebrovasc Dis.* 2014 Sep;23(8):2060-8. doi: 10.1016/j.jstrokecerebrovasdis.2014.03.010. Epub 2014 Aug 8. PubMed PMID: 25126700.

BACKGROUND: Deficiency of plasma glutathione peroxidase (GPx-3) has been associated with platelet-dependent thrombosis. Single-nucleotide polymorphisms (SNPs) in the promoter region of GPX3 gene have been found associated with the risk for ischemic stroke in Caucasian populations. The aim of our present study was to evaluate the impact of genetic variations in the GPX3 gene and plasma GPx-3 antigen levels on ischemic stroke in young Asian Indians.

METHODS: One hundred patients with ischemic stroke and 200 age- and sex-matched controls were studied. Genetic analysis for the study population was done by a combination of variant screening using single-stranded conformation polymorphism and final genotyping by polymerase chain reaction-restriction fragment length polymorphism and allele-specific polymerase chain reactions. Plasma GPx-3 antigen levels were evaluated using commercial kits. Data were analyzed using genetic analysis software and statistical tools.

RESULTS: Significantly higher GPx-3 levels were observed in controls compared with patients (controls 26.37 ± 3.66 µg/mL and patients 22.83 ± 4.57 µg/mL, P < .001). Only the SNP -861A/T was found associated with stroke phenotype (P < .0001). The SNP -568T/C was observed to significantly influence plasma GPx-3 levels (P < .05). The haplotype carrying the risk "T" allele of SNP -861A/T was significantly over-represented in patients with stroke (P < .0001).

CONCLUSIONS: The T allele of -861A/T is a risk allele for the ischemic stroke

phenotype. The -861A/T and -568T/C SNPs may show a statistically significant association with both plasma GPx-3 antigen levels and the stroke phenotype in a larger sample size.

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8: Alam F, Yadav N, Ahmad M, Shadan M. Blood substitutes: possibilities with nanotechnology. *Indian J Hematol Blood Transfus.* 2014 Sep;30(3):155-62. doi: 10.1007/s12288-013-0309-5. Epub 2013 Dec 10. Review. PubMed PMID: 25114400; PubMed Central PMCID: PMC4115085.

Nanotechnology deals with molecules in the nanometer (10⁻⁹) range and is currently being used successfully in the field of medicine. Nanotechnology has important implications in nearly all the branches of medicine and it has all the capabilities to revolutionize the vast field of medicine in future. Nanotechnological advancements have been used for the preparation of artificial hemoglobin. It is formed by assembling the hemoglobin molecules into a soluble complex. A recent approach includes the assembling of this artificial hemoglobin with enzymes such as catalase and superoxide dismutase into a nano-complex. This complex acts as an oxygen carrier as well as an antioxidant in conditions with ischemia-reperfusion injuries.

9: Arora T, Sharma N, Arora S, Titiyal JS. Anterior capsular defect with acute anterior subcapsular cataract in herpetic keratouveitis. *BMJ Case Rep.* 2014 Sep 16;2014. pii: bcr2014206056. doi: 10.1136/bcr-2014-206056. PubMed PMID: 25228677.

A 20-year-old man presented with a recurrent episode of herpetic keratouveitis in his right eye. The patient was treated with oral acyclovir and topical steroids. One week later the patient reported a sudden diminution of vision. Slitlamp biomicroscopy revealed the presence of a central anterior capsular defect and anterior subcapsular cataract. Dosage of steroids was temporarily increased and progression of cataract monitored. Subsequently, the anterior chamber reaction decreased and steroids were tapered.

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10: Arya A, Jindal A. Idiopathic Intracranial Hypertension due to Intralesional Triamcenolone Acetate. *Indian Pediatr.* 2014 Sep 8;51(9):754. PubMed PMID: 25228618.

11: Baidya DK, Chandralekha, Darlong V, Pandey R, Maitra S, Khanna P. Comparative efficacy and safety of the Ambu® AuraOnce™ laryngeal mask airway during general anaesthesia in adults: a systematic review and meta-analysis. *Anaesthesia.* 2014 Sep;69(9):1023-32. doi: 10.1111/anae.12682. Epub 2014 May 7. Review. PubMed PMID: 24801012.

Previous comparisons between the Ambu® AuraOnce™ and other laryngeal mask airways have revealed different results across various clinical studies. We aimed to perform a systematic review with meta-analysis on the efficacy and safety of the AuraOnce compared with other laryngeal mask airways for airway maintenance in adults undergoing general anaesthesia. Our search of PubMed, PubMed Central, Scopus and the Central Register of Clinical Trials of the Cochrane Collaboration yielded nine randomised controlled trials eligible for inclusion. Comparator laryngeal mask airways were the LMA Unique™ (four trials), the LMA Classic® (five trials) and the Portex® Soft Seal® (three trials). The AuraOnce provided an oropharyngeal leak pressure higher than the LMA Unique (304 participants, mean (95% CI) difference 3.1 (1.6-4.7) cmH₂O, p < 0.0001) and equivalent to the LMA Classic. The Soft Seal provided a higher leak pressure than the AuraOnce (229 participants, mean (95% CI) difference 3.5 (0.4-6.7) cmH₂O, p

= 0.03). Insertion was significantly faster with the AuraOnce than the LMA Unique (304 participants, mean (95% CI) difference 5.4 (2.1-8.71) s, $p = 0.001$) and Soft Seal (229 participants, mean (95% CI) difference 9.5 (3.0-15.9) s, $p = 0.004$), but similar to the LMA Classic. The first-insertion success rate of the AuraOnce was equivalent to the LMA Unique, LMA Classic and Soft Seal. We found a higher likelihood of bloodstaining on the cuff with the Soft Seal and a higher incidence of sore throat with the LMA Classic. We conclude that the AuraOnce is an effective alternative to the LMA Classic and LMA Unique, and easier to insert than all three other devices studied.

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12: Bandivadekar P, Sharma N, Pillai G, Agarwal T, Titiyal JS. Acute hydrops with secondary bacterial keratitis: sequelae of paediatric refractive surgery. *Int Ophthalmol*. 2014 Sep 5. [Epub ahead of print] PubMed PMID: 25189682.

A 24-year-old male patient with bilateral high myopia presented to our outpatient department with sudden onset of pain and diminution of vision in his right eye. He had sequentially undergone bilateral trabeculectomy and photorefractive keratectomy at the age of 6 years in both eyes. This was followed by radial keratotomy in right eye at the age of 8 years. The slit lamp examination demonstrated the presence of infiltrates in central cornea with an underlying fluid cleft, along with 14 radial keratotomy scars. Anterior segment optical coherence tomography confirmed the presence of intrastromal cleft in communication with anterior chamber. Bacterial culture revealed coagulase-negative Staphylococcus. The patient was successfully treated with fortified antibiotics in conjunction with the sensitivity report. This case underlines the need for a cautious approach towards refractive surgery in paediatric age group and highlights the long-term sequelae of retreatments in these cases.

13: Bansal AK, Vishnubhatla S, Bakhshi S. Correlation of Serum Immunoglobulins with Infection-Related Parameters During Induction Chemotherapy of Pediatric Acute Myeloid Leukemia: A Prospective Study. *Pediatr Hematol Oncol*. 2014 Sep 24. [Epub ahead of print] PubMed PMID: 25250972.

Background: Immune dysfunction may be a contributing factor for infections during induction chemotherapy of pediatric acute myeloid leukemia (AML); but this has not been evaluated as yet. Procedure: From April 2010 to May 2011, 45 consecutive de novo pediatric AML patients were prospectively evaluated along with nine healthy controls. Immunoglobulins (Ig) ($n = 45$) were measured at diagnosis and day 15. Results: There were 25 male and 20 female patients with a median age of 9 years (range 1-18 years). Baseline Ig did not correlate with any of the infection-related parameters during induction. At day 15, Ig levels reduced from baseline (IgG $p = 0.46$, IgA $p = 0.027$, IgM $p < 0.001$). Day 15 IgG levels were lower in patients with persistent fever >7 days ($p = 0.029$) and fungal infection ($p = 0.035$). Conclusion: This is the first study which has evaluated derangement in Ig with infection-related parameters in pediatric AML. At day 15, immunoglobulins decrease and reduced IgG levels correlate with infection-related parameters. Use of intravenous immunoglobulins in pediatric AML cases needs to be further evaluated to assess whether it can reduce infection-related morbidity.

14: Baranwal AK, Meena JP, Singhi SC, Muralidharan J. Dexamethasone pretreatment for 24 h versus 6 h for prevention of postextubation airway obstruction in children: a randomized double-blind trial. *Intensive Care Med*. 2014 Sep;40(9):1285-94. doi: 10.1007/s00134-014-3358-9. Epub 2014 Jun 18. PubMed PMID: 24939817.

PURPOSE: Multidose steroid pretreatment is effective in preventing postextubation airway obstruction (PEAO) in adults, however controversy continues for children. This study was designed as a randomized, placebo-controlled, double-blind trial

to compare the effect of 24-h pretreatment with dexamethasone (24hPD) versus 6-h pretreatment (6hPD) on PEAO and reintubation in children at a tertiary care hospital in a developing economy.

METHODS: Hundred twenty-four children (3 months to 12 years) intubated for ≥ 48 h and planned to have extubation during next 24 h were randomized to receive 24hPD (0.5 mg/kg/dose, q6h, total of six doses; $n = 66$) or 6hPD (total of three doses; $n = 58$). Patients with preexistent upper airway conditions, chronic respiratory diseases, steroid therapy in last 7 days, gastrointestinal bleeding, hypertension, and hyperglycemia and those likely to have poor airway reflexes were excluded.

RESULTS: The two groups were similar at baseline. 24hPD reduced the incidence of PEAO (43/66 versus 48/58; $p = 0.027$) with absolute risk reduction of 17 %. It also reduced the incidence of reintubation, though nonsignificantly, by half [5/61 versus 9/58; relative risk (RR), 1.09; 95 % confidence interval (CI), 0.96-1.25]. Time to recovery from PEAO among non-reintubated patients was shorter among 24hPD patients ($p = 0.016$). No adverse event was noted with dexamethasone use. Intubation duration >7 days and cuffed tracheal tubes were found to be independent risk factors for PEAO (odds ratio 6 and 3.12, respectively).

CONCLUSIONS: 24-h pretreatment with multidose dexamethasone reduced the incidence of PEAO and the time to recover from it. 24hPD should be considered for high-risk children intubated for >48 h in the study setting. Further studies with larger sample size from different socioeconomic background are desirable to validate these findings.

15: Bhatnagar S, Devi S, Vinod N, Jain P, Durgaprasad G, Maroo SH, Patel KR. Safety and efficacy of oral transmucosal fentanyl citrate compared to morphine sulphate immediate release tablet in management of breakthrough cancer pain. *Indian J Palliat Care*. 2014 Sep;20(3):182-7. doi: 10.4103/0973-1075.138386. PubMed PMID: 25191003; PubMed Central PMCID: PMC4154163.

AIM: To compare the efficacy and safety of oral transmucosal fentanyl citrate (OTFC) and oral morphine in Indian patients with breakthrough episodes of cancer pain.

MATERIALS AND METHODS: In this randomized, open label, active controlled, clinical study, total 186 patients who regularly experienced 1-4 episodes of breakthrough cancer pain (BTCP) daily, over the persistent pain controlled by taking oral morphine 60 mg/day or its equivalent were randomized to receive either OTFC 200 mcg or oral morphine 10 mg for the treatment of BTCP for 3 days. Improvement in pain as determined by numerical rating scale (NRS) at 5, 15, 30, and 60 minutes of drug administration and percentage of BTCP episodes showing reduction in pain intensity by $>33\%$ at 15 minutes were primary efficacy endpoints. Secondary efficacy endpoints were requirement for rescue analgesia and global assessment by physician and patient. Data of both treatment groups were analysed by appropriate statistical test using software, STATISTICA, version 11.

RESULTS: Patients treated with OTFC experienced significantly greater improvement in pain intensity of breakthrough episodes compared to those treated with oral morphine at all assessment time points ($P < 0.0001$). 56% of breakthrough pain episodes treated with OTFC showed a greater than 33% reduction in pain intensity from baseline at 15 minutes compared to 39% episodes treated with oral morphine ($P < 0.0001$). Patient's and physician's global assessment favoured OTFC than oral morphine ($P < 0.0001$). Requirement of rescue analgesia in both the study groups was similar ($P > 0.05$). Both study drugs were well tolerated.

CONCLUSIONS: OTFC was found to provide faster onset of analgesic effect than immediate release oral morphine in management of breakthrough cancer pain.

16: Bhatnagar S. Palliative care research: Indian perspective. *Indian J Palliat Care*. 2014 Sep;20(3):167-8. doi: 10.4103/0973-1075.138381. PubMed PMID: 25191000; PubMed Central PMCID: PMC4154160.

17: Birla S, Aggarwal S, Sharma A, Tandon N. Rare association of acromegaly with left atrial myxoma in Carney's complex due to novel PRKAR1A mutation. *Endocrinol Diabetes Metab Case Rep.* 2014;2014:140023. doi: 10.1530/EDM-14-0023. Epub 2014 Sep 1. PubMed PMID: 25298879.

Carney complex (CNC) is a rare autosomal dominant syndrome characterized by pigmented lesions of the skin and mucosae along with cardiac, endocrine, cutaneous, and neural myxomatous tumors. Mutations in the PRKAR1A gene have been identified in ~70% of the CNC cases reported worldwide. A 30-year-old male was referred to the endocrinology clinic with suspected acromegaly. He had a history of recurrent atrial myxoma for the past 8 years for which he underwent repeated surgeries. Presently, he complained of having headache, excessive snoring, sweating, and also noticed increase in his shoe size. Evaluation for acromegaly revealed elevated levels of GH in random as well as in suppressed condition. Magnetic resonance imaging scan revealed enlarged sella with microadenoma in the left anterior pituitary. Screening of PRKAR1A gene was carried out for the patient, his parents and siblings who were available and willing to undergo the test. The patient was diagnosed to have the rare CNC syndrome characterized by recurrent atrial myxoma and acromegaly due to a novel 22bp insertion mutation in PRKAR1A which was predicted to be deleterious by *in silico* analysis. Screening the available family members revealed the absence of this mutation in them except the elder brother who also tested positive for this mutation. The present study reports on a novel PRKAR1A insertion mutation in a patient with acromegaly and left atrial myxoma in CNC. LEARNING POINTS: Identification of a novel deleterious PRKAR1A insertion mutation causing CNC. It is important that patients with cardiac myxoma be investigated for presence of endocrine overactivity suggestive of CNC. PRKAR1A mutation analysis should be undertaken in such cases to confirm the diagnosis in the patients as well as first degree relatives. This case highlights an important aspect of diagnosis, clinical course, and management of this rare condition.

18: Bisht A, Suri A, Bansal S, Chandra PS, Kumar R, Singh M, Sharma BS. Factors affecting surgical outcome of endoscopic third ventriculostomy in congenital hydrocephalus. *J Clin Neurosci.* 2014 Sep;21(9):1483-9. doi: 10.1016/j.jocn.2013.12.033. Epub 2014 Jun 9. PubMed PMID: 24923872.

Endoscopic third ventriculostomy (ETV) is an accepted modality of treatment for obstructive hydrocephalus, with good results in adult patients. However in the pediatric age group results vary from poor to similar to the adult population. This study evaluates the outcome of ETV in congenital hydrocephalus of both early and delayed presentation, and investigates factors that determine the outcome. Patients with congenital hydrocephalus who underwent ETV between January 2006 and December 2011 were retrospectively analyzed. Any conditions potentially influencing the need for redo surgery (persistent cerebrospinal fluid [CSF] leak not responding to local measures, tense fontanelle, increased ventricular size, recurrence of symptoms or radiological evidence of failure) were analyzed. A total of 102 patients with a mean age of 7.45 years were included. Presenting features were increasing head circumference and delayed milestones. Ninety-eight patients had triventricular hydrocephalus due to aqueductal stenosis. Procedures performed were ETV only (n=74), ETV with aqueductoplasty (n=22), ETV with cystoventriculostomy (n=2) and aqueductoplasty only (n=2). Failure of ETV occurred in 11 patients and all were managed with a ventriculoperitoneal shunt. CSF leak in the perioperative period was the only factor that was significantly associated with failure of ETV. ETV is a safe procedure with a good success rate and can be offered to children with aqueductal stenosis. There is a higher chance of failure if there is a CSF leak in the early or late postoperative period.

19: Borle AP, Chhabra A, Subramaniam R, Rewari V, Sinha R, Ramachandran R, Kumar R, Seth A. Analgesic efficacy of paravertebral bupivacaine during percutaneous nephrolithotomy: an observer blinded, randomized controlled trial. *J Endourol.* 2014 Sep;28(9):1085-90. doi: 10.1089/end.2014.0179. Epub 2014 Jun 23. PubMed PMID: 24828850.

Abstract Background and Purpose: A unilateral paravertebral (PVB) block with catheter can provide extendable analgesia without physiological changes. The objective of this study was to assess the efficacy of PVB bupivacaine for providing perioperative pain relief in adults undergoing percutaneous nephrolithotomy (PCNL) under general anesthesia. **METHODS:** Fifty American Society of Anesthesiologists Grade I, II patients, aged 18 to 65 years, were included in this prospective, randomized, controlled, observer blinded trial. PVB group patients received preinduction 20mL of 0.5% bupivacaine in the T9-10 paravertebral space and a catheter in addition to general anesthesia. Control group patients received only general anesthesia. All patients received intravenous fentanyl (2µg/kg on induction, 0.5µg/kg on 20% increase in heart rate or mean blood pressure) and paracetamol every 6 hours. Postoperative pain was assessed using the visual analog scale (VAS) (0-10 cm) at rest and movement by a blinded observer at 0, 1, 2, 4, 6, 12, and 24 hours postoperatively. **RESULTS:** Data of 48 patients were analyzed. Intraoperative fentanyl requirement was higher in the control group (2.74±0.75µg/kg [95 % confidence interval (CI) 2.42, 3.05]) than the PVB group (2.07±0.26µg/kg [95 % CI 1.96, 2.18]), (P=0.0001). Time to first postoperative analgesic requirement was longer in the PVB group (120min [30-570]) than the control group (30min [0-180]), (P=0.0000). The VAS on rest (0, 1, 2, and 12h) and movement (all time points) were significantly lower in the PVB group. Postoperative fentanyl consumption was lower in this group (175µg [25-475]) compared with the control group (525µg [150-1275]), (P=0.0000). **CONCLUSIONS:** Unilateral PVB block with catheter provided effective perioperative analgesia for PCNL.

20: Chakraborty PS, Dhull VS, Karunanithi S, Roy SG, Kumar R. Rare case of gall bladder neuroendocrine tumor: (18)F-FDG and (68)Ga-DOTANOC PET/CT findings. *Rev Esp Med Nucl Imagen Mol.* 2014 Sep-Oct;33(5):316-7. doi: 10.1016/j.remnm.2013.10.009. Epub 2014 Jul 17. PubMed PMID: 25043774.

21: Chakraborty PS, Tripathi M, Agarwal KK, Kumar R, Vijay MK, Bal C. Metastatic Poorly Differentiated Prostatic Carcinoma With Neuroendocrine Differentiation: Negative on 68Ga-PSMA PET/CT. *Clin Nucl Med.* 2014 Sep 30. [Epub ahead of print] PubMed PMID: 25275415.

Glu-NH-CO-NH-Lys-(Ahx)-[Ga-68(HBED-CC)], abbreviated as Ga-PSMA, is a novel radiotracer undergoing evaluation for PET/CT imaging of prostate carcinoma. Its major advantage is the sensitive detection of lesions even at low prostate-specific antigen level and high target-to-background ratios obtained in metastatic lesions, which is better than that obtained with F-fluoromethylcholine. We present the case of a 28-year-old man with poorly differentiated prostate carcinoma with neuroendocrine differentiation, whose lesions did not show significant Ga-PSMA localization. As literature on utility of Ga-PSMA PET/CT for imaging prostate carcinoma grows, it is important to be aware of potential false negatives that could influence study results.

22: Chandra SP, Ramdurg SR, Kurwale N, Chauhan A, Ansari A, Garg A, Sarkar C, Sharma BS. Extended costotransversectomy to achieve circumferential fusion for pathologies causing thoracic instability. *Spine J.* 2014 Sep 1;14(9):2094-101. doi: 10.1016/j.spinee.2013.12.028. Epub 2014 Jan 18. PubMed PMID: 24448191.

BACKGROUND CONTEXT: Conventional circumferential stabilization for pathologies causing instability of the thoracic spine requires a two or even a three-staged procedure. The authors present their tertiary care center experience of single-staged procedure to establish a circumferential fusion through an extended costotransversectomy approach.

OBJECTIVE: To demonstrate neural canal decompression, removal of the pathology, achieve circumferential fusion, and correcting the deformity through a single procedure.

STUDY DESIGN: Prospective and observational.

PATIENT SAMPLE: Forty-six patients with pan thoracic column instability due to various pathologies.

OUTCOME MEASURES: Neurologic condition was evaluated using American Spinal Injury Association and Eastern Cooperative Oncology Group grading systems. Outcome was evaluated with regard to the decompression of neural canal, correction of deformity, and neurologic improvement. All patients were evaluated for neural canal compromise and degree of kyphosis preoperatively, early, and late postoperatively.

METHODS: All patients had severe spinal canal compromise (mean, 59%±9%) and loss of vertebral body height (mean, 55%±10%). A single-stage circumferential fusion was performed (four-level pedicle screw fixation along with a ventral cage fixation after a vertebrectomy or corpectomy) through an extended costotransversectomy approach.

RESULTS: The pathologies included trauma (21), tuberculosis (18), hemangioma (2), aneurysmal bone cyst (1), recurrent hemangioendothelioma (1), solitary metastasis (1) and plasmacytoma (1), and neurofibromatosis (1). Thirty-five of 46 patients (76%) demonstrated improvement in the performance status. The major complications included pneumonitis (3), pneumothorax (3) and neurologic deterioration (3; improved in two), deep venous thrombosis (2), and recurrent hemoptysis (1). No implant failures were noted on last radiology follow-up. There were two mortalities; one because of myocardial infarction and another because of respiratory complications.

CONCLUSIONS: The following study demonstrated that extended costotrasversectomy approach is a good option for achieving single-staged circumferential fusion for correcting unstable thoracic spine due to both traumatic and nontraumatic pathologies.

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23: Das RR, Naik SS. Neonatal hyperbilirubinemia and childhood allergic diseases: a systematic review. *Pediatr Allergy Immunol.* 2014 Sep 17. doi: 10.1111/pai.12281. [Epub ahead of print] PubMed PMID: 25229699.

BACKGROUND: Studies have found a link between neonatal hyperbilirubinemia (NNH) and/or phototherapy (NPT) and childhood allergic diseases. The present systematic review was conducted to provide updated evidence, and to provide direction regarding future research.

METHODS: A systematic search of the published literature was done. Observational studies including children up to 12 years of age were included. Data extraction was done using a standardized data extraction form that was designed and pilot tested a priori. The analysis was carried out with the statistical software RevMan (version 5.2) [Protocol is registered at PROSPERO: CRD42014009943].

RESULTS: Of 79 citations retrieved, a total of 7 good quality studies (n=101,499) were included in the final analysis. There was a significant increase in the odds of asthma and allergic rhinitis (AR) after NNH [asthma, OR 4.26 (95% CI 4.04-4.5); AR, OR 5.37 (95% CI 4.16-6.92)] and after NPT [asthma, OR 3.81 (95% CI

3.53-4.11); AR, OR 3.04 (95% CI 2.13-4.32)]. A similar increase in the trend was noted for late onset asthma after NNH [OR 4.1 (95% CI 2.82-5.94)], and hospitalization due to asthma after NPT [OR 3.56 (95% CI 2.93-4.33)]. The GRADE evidence generated was of "low-quality".

CONCLUSIONS: The current evidence finds a significant increase in the odds of childhood allergic diseases after NNH and/or NPT. As observational studies were included, the evidence generated was of 'low-quality'. Future studies should try to elucidate the pathophysiologic link between NNH and/or NPT and childhood allergic diseases. This article is protected by copyright. All rights reserved.

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24: Das RR, Panigrahi I, Naik SS. The effect of prophylactic antipyretic administration on post-vaccination adverse reactions and antibody response in children: a systematic review. PLoS One. 2014 Sep 2;9(9):e106629. doi: 10.1371/journal.pone.0106629. eCollection 2014. PubMed PMID: 25180516; PubMed Central PMCID: PMC4152293.

BACKGROUND: Prophylactic antipyretic administration decreases the post-vaccination adverse reactions. Recent study finds that they may also decrease the antibody responses to several vaccine antigens. This systematic review aimed to assess the evidence for a relationship between prophylactic antipyretic administration, post-vaccination adverse events, and antibody response in children.

METHODS: A systematic search of major databases including MEDLINE and EMBASE was carried out till March 2014. Randomized controlled trials (RCTs) comparing prophylactic antipyretic treatment versus placebo post-vaccination in children ≤ 6 years of age were included. Two reviewers independently applied eligibility criteria, assessed the studies for methodological quality, and extracted data [PROSPERO registration: CRD42014009717].

RESULTS: Of 2579 citations retrieved, a total of 13 RCTs including 5077 children were included in the review. Prophylactic antipyretic administration significantly reduced the febrile reactions ($\geq 38.0^{\circ}\text{C}$) after primary and booster vaccinations. Though there were statistically significant differences in the antibody responses between the two groups, the prophylactic PCM group had what would be considered protective levels of antibodies to all of the antigens given after the primary and booster vaccinations. No significant difference in the nasopharyngeal carriage rates (short-term and long-term) of *H. influenzae* or *S. pneumoniae* serotypes was found between the prophylactic and no prophylactic PCM group. There was a significant reduction in the local and systemic symptoms after primary, but not booster vaccinations.

CONCLUSIONS: Though prophylactic antipyretic administration leads to relief of the local and systemic symptoms after primary vaccinations, there is a reduction in antibody responses to some vaccine antigens without any effect on the nasopharyngeal carriage rates of *S. pneumoniae* & *H. influenzae* serotypes. Future trials and surveillance programs should also aim at assessing the effectiveness of programs where prophylactic administration of PCM is given. The timing of administration of antipyretics should be discussed with the parents after explaining the benefits & risks.

25: Das S, Matlashewski G, Bhunia GS, Kesari S, Das P. Asymptomatic Leishmania infections in northern India: a threat for the elimination programme? Trans R Soc Trop Med Hyg. 2014 Nov;108(11):679-684. Epub 2014 Sep 9. Review. PubMed PMID: 25205664.

Visceral leishmaniasis (VL) continues to embody as a mammoth public health problem and hurdle to the socioeconomic development of Bihar, India. Interestingly, all leishmanial infections do not lead to overt clinical disease and may stay asymptomatic for a period of time. Asymptomatic cases of VL are considered as probable potential reservoirs of VL, and thus can play a major role

in transmission of the disease in highly endemic areas of Bihar, India. They outnumber the exact disease burden in endemic areas of this region, thus jeopardizing the goal of the elimination program that is due by 2015. This article discusses the potential risk factors, epidemiological markers of transmission and requirement of highly sensitive diagnostic tools for efficient recognition of the high risk groups of conversion to symptomatic for proper designing of strategies for implementation of the control programs.

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26: Dhingra A, Garg A, Kaur S, Chopra S, Batra JS, Pandey A, Chaanine AH, Agarwal SK. Epidemiology of Heart Failure with Preserved Ejection Fraction. *Curr Heart Fail Rep*. 2014 Sep 16. [Epub ahead of print] PubMed PMID: 25224319.

The prevalence of heart failure (HF) and its subtype, HF with preserved ejection fraction (HFpEF), is on the rise due to aging of the population. HFpEF is convergence of several pathophysiological processes, which are not yet clearly identified. HFpEF is usually seen in association with systemic diseases, such as diabetes, hypertension, atrial fibrillation, sleep apnea, renal and pulmonary disease. The proportion of HF patients with HFpEF varies by patient demographics, study settings (cohort vs. clinical trial, outpatient clinics vs. hospitalised patients) and cut points used to define preserved function. There is an expanding body of literature about prevalence and prognostic significance of both cardiovascular and non-cardiovascular comorbidities in HFpEF patients. Current therapeutic approaches are targeted towards alleviating the symptoms, treating the associated comorbid conditions, and reducing recurrent hospital admissions. There is lack of evidence-based therapies that show a reduction in the mortality amongst HFpEF patients; however, an improvement in exercise tolerance and quality of life is seen with few interventions. In this review, we highlight the epidemiology and current treatment options for HFpEF.

27: Foster J, Wu WH, Scott SG, Bassi M, Mohan D, Daoud Y, Stark WJ, Jun AS, Chakravarti S. Transforming Growth Factor β and Insulin Signal Changes in Stromal Fibroblasts of Individual Keratoconus Patients. *PLoS One*. 2014 Sep 23;9(9):e106556. doi: 10.1371/journal.pone.0106556. eCollection 2014. PubMed PMID: 25247416; PubMed Central PMCID: PMC4172437.

Keratoconus (KC) is a complex thinning disease of the cornea that often requires transplantation. The underlying pathogenic molecular changes in this disease are poorly understood. Earlier studies reported oxidative stress, metabolic dysfunctions and accelerated death of stromal keratocytes in keratoconus (KC) patients. Utilizing mass spectrometry we found reduced stromal extracellular matrix (ECM) proteins in KC, suggesting ECM-regulatory changes that may be due to altered TGF β signals. Here we investigated properties of stromal cells from donor (DN) and KC corneas grown as fibroblasts in serum containing DMEM: F12 or in serum-free medium containing insulin, transferrin, selenium (ITS). Phosphorylation of SMAD2/3 of the canonical TGF β pathway, was high in serum-starved DN and KC fibroblast protein extracts, but pSMAD1/5/8 low at base line, was induced within 30 minutes of TGF β 1 stimulation, more so in KC than DN, suggesting a novel TGF β 1-SMAD1/5/8 axis in the cornea, that may be altered in KC. The serine/threonine kinases AKT, known to regulate proliferation, survival and biosynthetic activities of cells, were poorly activated in KC fibroblasts in high glucose media. Concordantly, alcohol dehydrogenase 1 (ADH1), an indicator of increased glucose uptake and metabolism, was reduced in KC compared to DN fibroblasts. By contrast, in low glucose (5.5 mM, normoglycemic) serum-free DMEM and ITS, cell survival and pAKT levels were comparable in KC and DN cells. Therefore, high glucose combined with serum-deprivation presents some cellular stress difficult to overcome by the KC stromal cells. Our study provides

molecular insights into AKT and TGF β signal changes in KC, and a mechanism for functional studies of stromal cells from KC corneas.

28: Gandhi AK, Roy S, Thakar A, Sharma A, Mohanti BK. Symptom Burden and Quality of Life in Advanced Head and Neck Cancer Patients: AIIMS Study of 100 Patients. *Indian J Palliat Care*. 2014 Sep;20(3):189-93. doi: 10.4103/0973-1075.138389. PubMed PMID: 25191005; PubMed Central PMCID: PMC4154165.

AIM: Head and neck cancers (HNCa) are the most common cancers among males in India and 70-80% present in advanced stage. The study aims to assess symptom burden and quality of life (QOL) in advanced incurable HNCa patients at presentation.

MATERIALS AND METHODS: One hundred patients were asked to fill EORTC QLQ-C15-PAL questionnaire, which consisted of Global QOL, physical functioning (PF), emotional functioning (EF), fatigue (FA), nausea-vomiting (NV), pain (PA), dyspnea (DY), sleep (SL), appetite (AP), and constipation (CO). Additional questions pertaining to swallowing (SW), hoarseness (HO), cough (CG), weight loss (WL), using pain killers (PK), taste (TA), bleeding (BL), hearing (HE), pain in neck lump (PALMP), opening mouth (OM), and oral secretions (OS) were asked based on a modified EORTC-HN35 questionnaire. Scoring was according to EORTC scoring manual. Mean, median and range were calculated for each item for the entire cohort.

RESULTS: The female:male ratio was 17:83.42% of them were \geq 60 years of age. Sixty-six patients had T4, 25 had T3, 36 had N2, and 33 had N3 disease. Median QOL was 50 (range 0-83.33) and PF was 77.78 (0-100). Median score for EF and FA was 50. Median score for PA, PK, and SL was 66.67 while that for AP was 33.33. Median value for SW, HO, WL, BL, PALMP, OM, and OS was 33.33 (100-0) while TA, CG, NV, DY, and HE had a median score of 0.00.

CONCLUSION: Advanced HNCa has a significant burden of symptoms. These results would help in giving patients better symptom directed therapies and improve their QOL.

29: Garg K, Pasricha R, Gurjar HK, Kakkar A, Sharma BS. Craniotomy incision site tumor implantation in a patient with metastatic breast carcinoma. *Indian J Dermatol Venereol Leprol*. 2014 Sep-Oct;80(5):471-3. doi: 10.4103/0378-6323.140328. PubMed PMID: 25201859.

30: Garg K, Tandon V, Sharma S, Suri A, Chandra PS, Kumar R, Mahapatra AK, Sharma BS. Quadrigeminal cistern arachnoid cyst: A series of 18 patients and a review of literature. *Br J Neurosurg*. 2014 Sep 12:1-7. [Epub ahead of print] PubMed PMID: 25215563.

Background. Arachnoid cysts account for 1% of intracranial mass lesions. Quadrigeminal cistern arachnoid cysts are even rarer lesions. We report 18 cases of quadrigeminal cistern arachnoid cysts treated at our institute from 2002 to 2012. Methods. We retrospectively analysed 18 patients with quadrigeminal cistern arachnoid cyst for clinical presentation, demographic profile, management and outcome. The age of the patients ranged from 29 days to 50 years (mean 17 years). The cysts were classified into 3 subtypes based on MRI findings. Surgical intervention was carried out in all the patients. Results. Two patients had Type 1 cysts, 4 had Type 2 cysts and 12 had Type 3 cysts. Two patients (Type 1) underwent endoscopic third ventriculostomy (alone). Craniotomy and cyst wall excision along with ventriculocystostomy and cystocisternostomy were done in 4 patients with Type 2 cysts, and endoscopic fenestration of cysts to the sub-arachnoid space or the ventricles and endoscopic third ventriculostomy were done in 7 patients with Type 3 cysts. Two patients with Type 3 cysts underwent only endoscopic ventriculocystostomy and cystocisternostomy without endoscopic third ventriculostomy, while three patients underwent ventriculoperitoneal shunt. The follow-up period ranged from 6 months to 48 months (mean 23.7 \pm 12.3 months). Conclusion. Quadrigeminal plate arachnoid cysts are generally

symptomatic and require some form of surgical intervention. We believe that endoscopic fenestration of the cyst with cystocisternostomy or cystoventriculostomy, when combined with third ventriculostomy, is the procedure of choice for such patients. We do not recommend the placement of a ventriculoperitoneal shunt alone. Operative re-exploration should be planned only after obtaining proper clinico-radiological correlation and not on the basis of imaging findings alone, as sometimes the cysts fail to regress but the symptoms improve.

31: Garg K, Kumar R. Isolated central canal rupture of spinal dermoid. *J Neurosurg Spine*. 2014 Sep;21(3):361-6. doi: 10.3171/2014.5.SPINE13900. Epub 2014 Jun 13. PubMed PMID: 24926936.

Spinal dermoid tumors are rare, benign, slow-growing tumors. Rupture of spinal dermoids, in contrast to cranial dermoids, is rarely reported. Rupture in the central canal alone is even more rare, with only a few cases reported in the literature. The presence of fat droplets within the central canal is unusual because the central canal is rudimentary in adults. The authors report 3 such cases and review the pertinent literature.

32: Garg K, Tandon V, Gupta DK, Sharma BS. Multiple neural tube defect with split cord malformation - a rare entity. *Indian J Pediatr*. 2014 Sep;81(9):982-3. doi: 10.1007/s12098-014-1383-x. Epub 2014 Mar 18. PubMed PMID: 24633967.

33: Garg K, Gurjar HK, Chandra PS, Sharma BS. Pentapathology in neurofibromatosis 1. *Indian J Pediatr*. 2014 Sep;81(9):980-1. doi: 10.1007/s12098-013-1270-x. Epub 2013 Dec 22. PubMed PMID: 24362955.

34: Gerdin M, Roy N, Khajanchi M, Kumar V, Dharap S, Felländer-Tsai L, Petzold M, Bhoi S, Saha ML, von Schreeb J. Predicting early mortality in adult trauma patients admitted to three public university hospitals in urban India: a prospective multicentre cohort study. *PLoS One*. 2014 Sep 2;9(9):e105606. doi: 10.1371/journal.pone.0105606. eCollection 2014. PubMed PMID: 25180494; PubMed Central PMCID: PMC4152220.

BACKGROUND: In India alone, more than one million people die yearly due to trauma. Identification of patients at risk of early mortality is crucial to guide clinical management and explain prognosis. Prediction models can support clinical judgement, but existing models have methodological limitations. The aim of this study was to derive a vital sign based prediction model for early mortality among adult trauma patients admitted to three public university hospitals in urban India.

METHODS: We conducted a prospective cohort study of adult trauma patients admitted to three urban university hospitals in India between October 2013 and January 2014. The outcome measure was mortality within 24 hours. We used logistic regression with restricted cubic splines to derive our model. We assessed model performance in terms of discrimination, calibration, and optimism.

RESULTS: A total of 1629 patients were included. Median age was 35, 80% were males. Mortality between admission and 24 hours was 6%. Our final model included systolic blood pressure, heart rate, and Glasgow coma scale. Our model displayed good discrimination, with an area under the receiver operating characteristics curve (AUROCC) of 0.85. Predicted mortality corresponded well with observed mortality, indicating good calibration.

CONCLUSION: This study showed that routinely recorded systolic blood pressure, heart rate, and Glasgow coma scale predicted early hospital mortality in trauma patients admitted to three public university hospitals in urban India. Our model needs to be externally validated before it can be applied in the clinical setting.

35: Goswami P, Das P, Verma AK, Prakash S, Das TK, Nag TC, Ahuja V, Gupta SD, Makharia GK. Are alterations of tight junctions at molecular and ultrastructural level different in duodenal biopsies of patients with celiac disease and Crohn's disease? *Virchows Arch.* 2014 Sep 21. [Epub ahead of print] PubMed PMID: 25240724.

Abnormalities of transmembrane and cytoplasmic proteins of tight junctions (TJ) have been implicated in pathogenesis of both celiac (CeD) and Crohn's diseases (CD). Since disease pathogenesis in CeD and CD are different, we planned to study if there is any differential expression pattern of TJ marker proteins and ultrastructural changes, respectively, in duodenal villi vs crypts. Endoscopic duodenal biopsies from treatment naïve patients with CeD (n=24), active CD (n=28), and functional dyspepsia (as controls, n=15), both at baseline and 6 months after treatment, were subjected to light microscopic analysis (modified Marsh grading); immune-histochemical staining and Western blot analysis to see the expression of key TJ proteins [trans-membrane proteins (claudin-2, claudin-3, claudin-4, occludin, and JAM) and cytoplasmic protein (ZO-1)]. Transmission electron microscopy and image analysis of the TJs were also performed. There was significant overexpression of claudin-2 (pore-forming) and occludin (protein maintaining cell polarity) with under-expression of claudin-3 and claudin-4 (pore-sealing proteins) in treatment naïve CeD and active CD with simultaneous alteration in ultrastructure of TJs such as loss of penta-laminar structure and TJ dilatation. Normalization of some of these TJ proteins was noted 6 months after treatment. These changes were not disease specific and were not different in duodenal villi and crypts. Overexpression of pore-forming and under-expression of pore-sealing TJ proteins lead to dilatation of TJ. These changes are neither disease specific nor site specific and the end result of mucosal inflammation.

36: Goswami S, Gupta V, Srivastava A, Sihota R, Malik MA, Kaur J. A novel duplication in the PAX6 gene in a North Indian family with aniridia. *Int Ophthalmol.* 2014 Sep 5. [Epub ahead of print] PubMed PMID: 25189681.

Mutations in paired box gene 6 (PAX6) are the major cause of aniridia that may be associated with several other developmental anomalies of the eye, including microcornea in rare cases. Therefore, the purpose of this study was to identify the underlying genetic cause in a two-generation North Indian family diagnosed with aniridia. All the participants enrolled in the study, including the aniridia family and 20 healthy individuals (controls), underwent a comprehensive ophthalmic examination. Mutation screening was performed for the PAX6 gene by direct sequencing of the polymerase chain reaction products. A novel PAX6 duplication in exon 5 at position c.474dupC was identified in all three affected individuals from the family but not in the unaffected family members or unrelated controls. We reported a novel duplication in the PAX6 gene capable of causing the classic aniridia phenotype. This is the first report on the duplication in a North Indian family with autosomal dominant aniridia.

37: Gulati S, Jain P, Sachan D, Chakrabarty B, Kumar A, Pandey RM, Gupta AK. Seizure and radiological outcomes in children with solitary cysticercous granulomas with and without albendazole therapy: a retrospective case record analysis. *Epilepsy Res.* 2014 Sep;108(7):1212-20. doi: 10.1016/j.eplepsyres.2014.04.013. Epub 2014 May 14. PubMed PMID: 24908563.

Neurocysticercosis, parasitic infestation of the central nervous system by the *Taenia solium* larvae, is a major public health problem, primarily in the developing countries. Seizures are the primary clinical manifestation which could be acute (secondary to active lesions) or remote symptomatic (due to calcified lesions). Cysticidal therapy is the standard of care for solitary parenchymal active neurocysticerci. However treatment related side effects and tendency to spontaneous resolution raises concern from time to time whether cysticidal therapy is actually required. This is a retrospective case record analysis of two groups of patients with solitary parenchymal neurocysticerci (group A; 171

patients between 2000 and 2004 who did not receive cysticidal therapy, group B; 512 patients between 2008 and 2013 who received cysticidal therapy). Group B had significantly more radiological resolution of lesions whereas group A reported significantly more seizure recurrences on antiepileptics. There was no significant difference in occurrence of calcification in the two groups. Overall patients with calcified lesions had significantly more breakthrough seizures. Well designed prospective studies should be planned in future to understand the mechanism underlying the epileptogenicity of calcified lesions and how they are linked to host and environment factors.

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38: Gupta N, Kabra M, Kapoor S. Establishing national neonatal perinatal database and birth defects registry network - need of the hour! *Indian Pediatr.* 2014 Sep 8;51(9):693-6. PubMed PMID: 25228597.

Early detection and prevention of birth defects is necessary to further reduce neonatal morbidity and mortality. A birth defect registry or surveillance system is necessary to assess the exact magnitude, profile and modifiable risk factors for birth defects. We review the existing efforts and suggest possible options for addressing this important issue. Connecting birth defects registry with the pre-existing programs such as National Neonatal Perinatal Database could be one of the option.

39: Gupta P, Anvikar AR, Valecha N, Gupta YK. Pharmacovigilance practices for better healthcare delivery: knowledge and attitude study in the national malaria control programme of India. *Malar Res Treat.* 2014;2014:837427. doi: 10.1155/2014/837427. Epub 2014 Sep 15. PubMed PMID: 25302133.

Objective. With large scale rollout of artemisinin based therapy in the National Malaria Control Programme of India, a risk management plan is needed. This depends on adverse drug reaction (ADR) reporting by the healthcare professionals (HCPs). For the programme to be successful, an understanding of the mindset of HCPs is critical. Hence, the present study was designed to assess and compare the ADR reporting beliefs of HCPs involved in the National Malaria Control Programme of India. **Methods.** A cross-sectional survey was conducted amongst the HCPs who manage malaria up to the district level in India. A 5-point Likert scale-based questionnaire was developed as a study tool. **Results.** A total of 154 HCPs participated in the study (age: 42.4 ± 10.1 years with 33.8% being females). About 61% felt that only medically qualified HCPs are responsible for ADR reporting. Likelihood to report in future was mentioned by 45% HCPs. The knowledge score was relatively lower for life science graduates ($P = 0.09$). Knowledge correlated positively with attitude ($r(2) = 0.114$; $P < 0.0001$). **Conclusion.** Based on the caveats identified, a specific and targeted in-service education with hands-on training on ADR monitoring and reporting needs to be designed to boost real time pharmacovigilance in India.

40: Gupta S, Khokhar S, Agarwal T. A case of decentered IOL managed with optic buttonholing. *Int Ophthalmol.* 2014 Sep 17. [Epub ahead of print] PubMed PMID: 25227431.

We describe an unusual case which presented with late lateral IOL decentration secondary to bag subluxation in the presence of a posterior capsular defect. Instead of approaching the case with the usual IOL exchange with iris-fixated or anterior chamber IOL or by fixating it to the sclera, a relatively non-invasive sutureless method of IOL re-centration was performed by buttonholing the optic into the posterior capsular defect. It enabled a perfect IOL centration with minimal incidence of astigmatism, inflammation, macular edema, secondary glaucoma, or corneal decompensation.

41: Gupta S, Chaurasia S, Sankar MJ, Deorari AK, Paul VK, Agarwal R. Neonatal Research in India: Current Status, Challenges, and the Way Forward. *Indian J Pediatr.* 2014 Sep 17. [Epub ahead of print] PubMed PMID: 25223863.

The present article systematically reviews the current status of neonatal research in India by examining the research articles published by Indian authors in the last 10 years. It also enlists the major challenges and proposes a few potential solutions to improve the status of neonatal research in the country. The systematic review of 574 eligible articles indicates that majority of the studies were observational in nature, facility-based, and primarily investigator-driven with no external funding, had small sample size, and were published in journals with low impact factor. Only a few select government and non-government academic institutions contributed to most studies. The major challenges include shortage of faculty, no provision for dedicated research time, inadequate knowledge/skills in research methods, lack of funding opportunities, limited access to literature, non-existence of research administrative cell, inappropriately low perks to research staff, and poor support for data management and statistical analysis. The recently revised guidelines on clinical trials involving drugs have further increased the researcher's dilemma. The potential solutions are to increase the faculty strength in medical colleges, allow dedicated research time to them, appoint dedicated research cadre with emoluments at par with clinical faculty, initiate formal training in research methods, create nationwide free portal for access to literature, facilitate development of good protocols through technical guidance at all stages, make the process of funding quick and transparent, and to promote collaborative trans-disciplinary research. Experts from different domains should come together and formulate evidence based research priorities. Regulatory mechanisms should be kept proportionate to plausible risks of research, and detailed ethical guidelines for research in children should be formulated. And last but not least, harnessing postgraduate thesis potential to answer simple and relevant clinical questions in a methodologically rigorous way is the need of the hour.

42: Gupta SK, Chopra A, Singh S, Kumar R, Bakhshi S, Kumar L, Sharma A. Absence of CD9 expression in acute myeloid leukemia: possible correlation with t(8;21). *Int J Lab Hematol.* 2014 Sep 26. doi: 10.1111/ijlh.12296. [Epub ahead of print] PubMed PMID: 25263263.

43: Gupta V, James MK, Singh A, Kumar S, Gupta S, Sharma A, Sihota R, Kennedy DJ. Differences in Optic Disc Characteristics of Primary Congenital Glaucoma, Juvenile, and Adult Onset Open Angle Glaucoma Patients. *J Glaucoma.* 2014 Sep 26. [Epub ahead of print] PubMed PMID: 25265002.

OBJECTIVE:: To comparatively evaluate morphometric features of the optic discs of primary congenital glaucoma (PCG), juvenile onset primary open angle glaucoma (JOAG), and adult onset primary open angle glaucoma (POAG) using scanning laser ophthalmoscopy (HRT3).

METHODS:: Optic discs of previously treated 89 PCG, 136 JOAG, and 139 adult onset POAG patients, were evaluated. One eye of each patient was analyzed in the study. The optic disc characteristics studied included disc area, cup area, rim area, cup depth, cup volume, cup to disc area ratio, horizontal cup to disc ratio, vertical cup to disc ratio, and mean retinal nerve fiber layer (RNFL). A regression analysis was performed to assess the effect of age, sex, and disc area on the disc characteristics in the 3 categories of primary glaucomas.

RESULTS:: Mean disc area of PCG, JOAG and POAG eyes was 2.58 ± 0.75 , 2.61 ± 0.51 , and 2.44 ± 0.58 mm, respectively. The cup characteristics that demonstrated significantly greater means among JOAG compared with POAG and PCG eyes, included cup depth ($P=0.001$), cup volume ($P=0.024$), and cup to disc area ratio ($P=0.049$). The mean horizontal cup to disc ratio=0.73 was greater than mean vertical cup to disc ratio=0.61 ($P=0.026$) among PCG eyes as well as among JOAG eyes ($P=0.001$). For POAG, the mean horizontal cup to disc ratio=0.73 was not different from the

mean vertical cup to disc ratio=0.69 (P=0.077).

CONCLUSIONS: The optic discs of juvenile onset open angle glaucoma tend to be larger in size than adult onset POAG discs. A 3-dimensional enlargement of the cup is seen among treated JOAG discs compared with POAG and PCG eyes. The greater horizontal cup disc ratio in PCG and JOAG compared with POAG eyes indicates a concentric enlargement of the cup in these patients.

44: Hirve S, Krishnan A, Dawood FS, Lele P, Saha S, Rai S, Gupta V, Lafond KE, Juvekar S, Potdar V, Broor S, Lal RB, Chadha M. Incidence of influenza-associated hospitalization in rural communities in western and northern India, 2010-2012: A multi-site population-based study. *J Infect.* 2014 Sep 9. pii: S0163-4453(14)00276-X. doi: 10.1016/j.jinf.2014.08.015. [Epub ahead of print] PubMed PMID: 25218056.

BACKGROUND: The global burden of influenza is increasingly recognized, but data from India remain sparse. We conducted a multi-site population-based surveillance study to estimate and compare rates of influenza-associated hospitalization at two rural Indian health and demographic surveillance system (HDSS) sites at Ballabgarh and Vadu during 2010-2012.

METHODS: Prospective facility-based surveillance for all hospitalizations (excluding those for trauma, elective surgery and obstetric, ophthalmic or psychiatric reasons) was conducted at 72 health facilities. After collection of clinical details, patients had nasopharyngeal swabs taken and tested by reverse transcription polymerase chain reaction for influenza viruses. Annual healthcare utilization surveys (HUS) were conducted in HDSS households to identify proportion of hospitalizations occurring at non-study facilities to adjust for hospitalizations missed through facility-based surveillance.

RESULTS: HUS showed that 69% and 67% of hospitalizations occurred at study facilities at Ballabgarh and Vadu, respectively. Overall, 6004 patients hospitalized with acute medical illness at participating facilities were enrolled (1717 from Ballabgarh; 4287 from Vadu). The proportion of patients with influenza was higher at Vadu than Ballabgarh annually (2010: 21% vs. 5%, $p < 0.05$; 2011: 18% vs. 5%, $p < 0.05$; 2012: 23% vs. 5%, $p < 0.05$). Annual adjusted influenza-associated hospitalization rates were 5-11 fold higher in Vadu (20.3-51.6 per 10,000) vs Ballabgarh (4.4-6.3 per 10,000). At both sites, influenza A/H1N1pdm09 and B predominated during 2010, A/H3N2 and B during 2011, and A/H1N1pdm09 and B during 2012.

CONCLUSION: The markedly different influenza hospitalization rates by season and across communities in India highlight the need for sustained multi-site surveillance system for estimating national influenza disease burden. That would be the first step for initiating discussions around Influenza prevention and control strategies in the country.

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45: Iqbal N, Iqbal N. Human Epidermal Growth Factor Receptor 2 (HER2) in Cancers: Overexpression and Therapeutic Implications. *Mol Biol Int.* 2014;2014:852748. doi: 10.1155/2014/852748. Epub 2014 Sep 7. Review. PubMed PMID: 25276427; PubMed Central PMCID: PMC4170925.

Human epidermal growth factor receptor 2 (HER2) is a member of the epidermal growth factor receptor family having tyrosine kinase activity. Dimerization of the receptor results in the autophosphorylation of tyrosine residues within the cytoplasmic domain of the receptors and initiates a variety of signaling pathways leading to cell proliferation and tumorigenesis. Amplification or overexpression of HER2 occurs in approximately 15-30% of breast cancers and 10-30% of gastric/gastroesophageal cancers and serves as a prognostic and predictive biomarker. HER2 overexpression has also been seen in other cancers like ovary, endometrium, bladder, lung, colon, and head and neck. The introduction of HER2 directed therapies has dramatically influenced the outcome of patients with HER2

positive breast and gastric/gastroesophageal cancers; however, the results have been proved disappointing in other HER2 overexpressing cancers. This review discusses the role of HER2 in various cancers and therapeutic modalities available targeting HER2.

46: Jacob TG, Sreekumar VI, Roy TS, Garg PK. Electron-microscopic evidence of mitochondria containing macroautophagy in experimental acute pancreatitis: Implications for cell death. *Pancreatology*. 2014 Sep 3. pii: S1424-3903(14)00971-5. doi: 10.1016/j.pan.2014.08.009. [Epub ahead of print] PubMed PMID: 25280593.

BACKGROUND: Dysfunctional autophagy and necrosis are characteristic features of severe acute pancreatitis.

OBJECTIVE: To unravel the cellular mechanisms underlying the pathogenesis of acute pancreatitis.

METHODS: We studied the ultrastructural pancreatic morphology using electron microscopy in experimental acute pancreatitis. The control group of animals received intraperitoneal injections of normal saline. Different severity of acute pancreatitis was induced by low and high doses of caerulein in Swiss albino mice. In the low dose group, pancreatitis was induced by 4 injections of caerulein given hourly [50 µg/kg/dose - total of 200 µg/kg] and in the high dose group by 8 injections given hourly (total of 400 µg/kg). The experiments were repeated in Na-taurocholate model of acute pancreatitis in rats. The pancreatic tissue was processed and studied by transmission electron microscopy for ultrastructural changes.

RESULTS: The acinar cells of the pancreatitis animals revealed autophagosomes that contained cellular organelles, including mitochondria. The animals that received a higher dose of caerulein had numerous cells showing a necrotic morphology, whereas the animals in the low dose group showed a predominantly apoptotic cell morphology. The Na-taurocholate model in rats also showed similar features of severe pancreatitis with cellular necrosis and macroautophagy.

CONCLUSIONS: Dysfunctional mitochondria in the injured pancreatic acinar cells are degraded by macroautophagy. These observations are not model specific. Mitochondrial dysfunction and consequent energy deficit in the cells might be causally related to cellular necrosis.

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47: Jaiswal AK, Bal C, Damle NA, Ballal S, Goswami R, Hari S, Kumar P. Comparison of clinical outcome after a fixed dose versus dosimetry-based radioiodine treatment of Graves' disease: Results of a randomized controlled trial in Indian population. *Indian J Endocrinol Metab*. 2014 Sep;18(5):648-54. doi: 10.4103/2230-8210.139222. PubMed PMID: 25285281; PubMed Central PMCID: PMC4171887.

OBJECTIVE: Two approaches are used to treat Graves' disease with radioiodine ((¹³¹I)-the fixed dose approach and the other based on dosimetry. A prospective study was performed to compare the results of these two approaches in a randomized patient population, as such study is lacking in the Indian population till date.

MATERIALS AND METHODS: Patients with Graves' disease were randomized into two groups: (1) Fixed dose group and the (2) Calculated dose group, each comprising of 20 patients. All the patients underwent detailed clinical and biochemical evaluation. Thyroid mass was determined by high resolution ultrasound machine with linear transducer of 7-11 MHz. Patients were given 185-370 kBq (5-10 uCi) of (¹³¹I) and 24 hr radioiodine uptake (RAIU) was calculated using thyroid uptake probe and thyroid phantom. Fixed dose group patients were administered 185MBq of (¹³¹I). Calculated dose group patients were given (¹³¹I) as per the following formula: Calculated dose = [3700 kBq/g × estimated thyroid wt. (g)] ÷ 24 hr RAIU (%). Success of first dose of radioiodine was defined as clinically/biochemically

euthyroid/hypothyroid status at the end of 3 months without the need for further therapy.

RESULTS: In the fixed dose group, eight patients were hyperthyroid, four were euthyroid, and eight were hypothyroid after the first dose at 3 months. Success rate of first dose was 60%. In calculated dose group, seven patients were hyperthyroid, eight were euthyroid, and five were hypothyroid. Success rate of first dose was 65%.

CONCLUSIONS: There is no statistically significant difference between the success rates of the two methods at 3 months. Hence, fixed dose approach may be used for treatment of Graves' disease as it is simple and convenient for the patient. Longer follow-up with higher number of patients should be done to confirm or contradict our findings.

48: Jaiswal N, Singh M, Das RR, Jindal I, Agarwal A, Thumburu KK, Kumar A, Chauhan A. Distribution of Serotypes, Vaccine Coverage, and Antimicrobial Susceptibility Pattern of Streptococcus Pneumoniae in Children Living in SAARC Countries: A Systematic Review. PLoS One. 2014 Sep 30;9(9):e108617. doi: 10.1371/journal.pone.0108617. eCollection 2014. PubMed PMID: 25268974; PubMed Central PMCID: PMC4182530.

INTRODUCTION: Each SAARC nation falls in the zone of high incidence of pneumococcal disease but there is a paucity of literature estimating the burden of pneumococcal disease in this region.

OBJECTIVE: To identify the prevalent serotypes causing invasive pneumococcal disease in children of SAARC countries, to determine the coverage of these serotypes by the available vaccines, and to determine the antibiotic resistance pattern of Streptococcus pneumoniae.

METHODS: We searched major electronic databases using a comprehensive search strategy, and additionally searched the bibliography of the included studies and retrieved articles till July 2014. Both community and hospital based observational studies which included children aged ≤12 years as/or part of the studied population in SAARC countries were included.

RESULTS: A total of 17 studies were included in the final analysis. The period of surveillance varied from 12-96 months (median, 24 months). The most common serotypes country-wise were as follows: serotype 1 in Nepal; serotype 14 in Bangladesh and India; serotype 19F in Sri Lanka and Pakistan. PCV-10 was found to be suitable for countries like India, Nepal, Bangladesh, and Sri Lanka, whereas PCV-13 may be more suitable for Pakistan. An increasing trend of non-susceptibility to antibiotics was noted for co-trimoxazole, erythromycin and chloramphenicol, whereas an increasing trend of susceptibility was noted for penicillin.

CONCLUSION: Due to paucity of recent data in majority of the SAARC countries, urgent large size prospective studies are needed to formulate recommendations for specific pneumococcal vaccine introduction and usage of antimicrobial agents in these regions.

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50: Jose A, Nagori SA, Virkhare A, Bhatt K, Bhutia O, Roychoudhury A. Piezoelectric osteoarthrectomy for management of ankylosis of the temporomandibular joint. Br J Oral Maxillofac Surg. 2014 Sep;52(7):624-8. doi: 10.1016/j.bjoms.2014.04.012. Epub 2014 May 22. PubMed PMID: 24856926.

We describe the use of a piezoelectric osteotome for removal of bone in patients with ankylosis of the temporomandibular joint (TMJ) and its advantages over conventional techniques. We studied 35 patients with ankylosis of 62 TMJ (27 bilateral and 8 unilateral, 2 recurrent) who were treated by gap arthroplasty

between 1 January 2011 and 31 December 2012. We used a preauricular, with extended temporal, incision in all cases. The ankylosis was released with a piezoelectric scalpel. There were 23 men and 12 women, mean (SD) age 16 (9) years. We noticed a substantial reduction in bleeding with the piezoelectric bone cutter compared with the dental drill, though the operating time was longer. We noticed no bleeding from the maxillary artery or pterygoid plexus. Mean (SD) bleeding/side was 43 (5) ml, and mean (SD) operating time was 77 (8) minutes for a single joint. At 6 months' follow-up mean (SD) passive mouth opening was 35 (3) mm. Piezoelectric bone removal for the release of ankylosis of the TMJ is associated with minimal bleeding, few postoperative complications, and satisfactory mouth opening at 6 months' follow up.

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51: Jyotsna VP, Raizada N, Chakraborty S, Pal S. Acanthosis nigricans in insulinoma. *Indian J Endocrinol Metab.* 2014 Sep;18(5):739. doi: 10.4103/2230-8210.139223. PubMed PMID: 25285297; PubMed Central PMCID: PMC4171903.

52: Kapil U, Toteja GS, Bhadoria AS. Cobalamin and folate deficiencies among children in the age group of 12-59 months in India. *Biomed J.* 2014 Sep 2. doi: 10.4103/2319-4170.137768. [Epub ahead of print] PubMed PMID: 25179719.

Background: Anemia is a major public health problem among children under 5 years of age in India. Cobalamin and folate deficiencies play an important role in the etiology of anemia. This study was done to assess the prevalence of cobalamin and folate deficiencies among children in the age group of 12-59 months. Methods: A community-based cross-sectional study was conducted. A total of 470 children were included. Non-fasting venous blood samples were collected from each child for the estimation of serum cobalamin and folate levels. Pattern of dietary consumption of the each child was assessed with the help of the food frequency questionnaire (FFQ) method. Results: The median levels (interquartile range) of serum cobalamin (n = 469) and folate (n = 416) were found to be 275 (202-427) pg/ml and 3.02 (2.02-4.94) ng/ml, respectively. The overall prevalence of cobalamin and folate deficiencies was found to be 180/469 [38.4%; 95% Confidence Interval (CI): 34.1-42.8%] and 263/416 (63.2%; 95% CI: 58.5-67.7%), respectively. Conclusions: A high prevalence of cobalamin and folate deficiencies was found in children under 5 years of age.

53: Kapoor PM, Subramanian A, Malik V, Devagorou V. Perioperative endothelin levels in patients undergoing intracardiac repair for tetralogy of fallot. *J Card Surg.* 2014 Sep;29(5):670-7. doi: 10.1111/jocs.12394. Epub 2014 Jul 14. PubMed PMID: 25040048.

BACKGROUND: Endothelin, a pro-inflammatory molecule, had been extensively studied in patients with cardiovascular illness. Impact on the perioperative outcome of patients with cyanotic congenital heart defects is still unknown. In the present study, we report perioperative changes in endothelin levels and their correlation with preoperative factors and clinical outcomes in a group of patients with tetralogy of Fallot (TOF) undergoing definitive repair.

METHODOLOGY: 167 patients with TOF undergoing intracardiac repair under cardiopulmonary bypass were studied. Endothelin levels were taken at three different points of time and correlated with different clinical variables.

RESULTS: The baseline endothelin level correlated with patients' nutritional status and degree of cyanosis. The magnitude of inflammatory response in the post-cardiopulmonary bypass (post-CPB) period as measured by endothelin level was much higher and correlated more consistently with adverse clinical outcomes in the younger age group. On multivariable analysis, age at operation, preoperative degree of hypoxemia, and endothelin levels were found to be independent

predictors of clinical outcomes.

CONCLUSIONS: A rise in serum endothelin levels in patients with TOF undergoing definitive repair on CPB, with preoperative severity of cyanosis, nutritional status, and adverse clinical outcomes. The endothelin levels may be monitored to identify patients with cyanosis at an increased risk of exhibiting augmented inflammatory response to CPB. doi: 10.1111/jocs.12394 (J Card Surg 2014;29:670-677).

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54: Karthikeyan G, Ananthkrishnan R, Devasenapathy N, Narang R, Yadav R, Seth S, Singh S, Goswami KC, Bahl VK. Transient, subclinical atrial fibrillation and risk of systemic embolism in patients with rheumatic mitral stenosis in sinus rhythm. Am J Cardiol. 2014 Sep 15;114(6):869-74. doi: 10.1016/j.amjcard.2014.06.016. Epub 2014 Jul 2. PubMed PMID: 25086468.

Stroke and systemic embolism occur frequently in patients with rheumatic mitral stenosis (MS) in sinus rhythm (SR), but the risk and predictors of embolic events in this population are not well studied. The aim of this study was to determine if transient, subclinical atrial fibrillation (AF) increases the risk of systemic embolism in patients with MS in SR. A single-center, prospective observational study of patients with rheumatic MS in SR was performed. The rate of the composite primary outcome of stroke, transient ischemic attack, or non-central nervous system embolism was determined, as well as the predictive value of Holter-detected episodes of transient (<30 seconds), subclinical AF for this outcome. Hazard ratios were derived for subclinical AF, after adjustment for clinical and echocardiographic predictors of systemic embolism, using Cox regression. The sensitivity, specificity, and area under the receiver-operating characteristic curve of subclinical AF were determined for the primary outcome. Among 179 patients (mean follow-up 10.2 months), the rate of the primary outcome was 5.3/100 patient-years (95% confidence interval [CI] 2.6 to 10.5). In univariate analysis, subclinical AF (hazard ratio 4.54, 95% CI 1.08 to 19.0, $p = 0.038$) and dense spontaneous echocardiographic contrast (hazard ratio 4.32, 95% CI 1.03 to 18.09, $p = 0.045$) were predictors of the primary outcome. In multivariate analysis, subclinical AF remained the only significant predictor (hazard ratio 5.02, 95% CI 1.15 to 22.0, $p = 0.032$). Subclinical AF had an area under the receiver-operating characteristic curve of 0.68 and high negative predictive value (97.7%) for the primary outcome. In conclusion, Holter-detected, transient (<30 seconds), subclinical AF is a predictor of stroke and systemic embolism in patients with rheumatic MS in SR. Considering the high risk for embolism, randomized trials of oral anticoagulation are needed in this population.

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55: Karunanithi S, Kumar G, Sharma SK, Jain D, Gupta A, Kumar R. Staging and Response of Sternal Histoplasmosis by 18F-FDG PET/CT. Clin Nucl Med. 2014 Sep 3. [Epub ahead of print] PubMed PMID: 25188644.

Histoplasmosis, a granulomatous mycosis caused by the fungus *Histoplasma capsulatum*, is known to primarily affect the lungs and the immune system, with involvement of skeletal system as a rare manifestation, in which case the disease usually assumes multifocality. We present a singular case of a young man diagnosed to have an isolated skeletal histoplasmosis involving the body of sternum where F-FDG PET/CT played major role in both diagnosis and in response evaluation to antifungal therapy.

56: Karunanithi S, Jain TK, Agarwal KK, Bal C, Kumar R. (99m)Tc-MDP three phase bone scan for early diagnosis and treatment response monitoring in complex regional pain syndrome. Rev Esp Med Nucl Imagen Mol. 2014 Sep 25. pii:

S2253-654X(14)00026-2. doi: 10.1016/j.remn.2014.01.006. [Epub ahead of print]
PubMed PMID: 25263721.

57: Karunanithi S, Sharma P, Roy SG, Vettiyil B, Sharma A, Thulkar S, Bal C, Kumar R. Use of 18F-FDG PET/CT imaging for evaluation of patients with primary splenic lymphoma. *Clin Nucl Med*. 2014 Sep;39(9):772-6. doi: 10.1097/RLU.0000000000000523. PubMed PMID: 25036015.

Primary splenic lymphoma (PSL) is a rare disease, and its management differs from other splenic malignancies. The purpose of the present study was to evaluate the role of 18F-FDG PET/CT in patients with PSL. **METHODS:** We retrospectively evaluated the data of 17 patients with PSL (median age, 46 years; range, 3-64) who had undergone 50 18F-FDG PET/CT studies. Of the 50 PET/CTs, 15 were done for primary diagnosis/staging and 35 were done for restaging. PET/CT images were evaluated both qualitatively and quantitatively [maximum standardized uptake value (SUVmax)]. Combination of clinical/imaging follow-up and/or histopathologic diagnosis was taken as reference standard.

RESULTS: Of the total 50 F-FDG PET/CT studies, 27 studies (54%) were positive and 23 (46%) were negative for disease. PET/CT was true positive in 25 studies, true negative in 22 studies, false positive in 2 studies, and false negative in 1 study. Overall, per study-based sensitivity was 96.2%, specificity was 91.7%, and accuracy was 94%. In those studies performed for diagnosis/staging (15/50), PET/CT was true positive in all 15, with an accuracy of 100%. In those studies performed for restaging (35/50), sensitivity was 90.9%, specificity was 91.7%, and accuracy was 91.4%. No significant difference was seen in the accuracy of PET/CT between staging and restaging groups ($P=0.601$). On 18F-FDG PET/CT, splenic involvement was seen in 24 studies, lymph nodal involvement in 5 studies, liver involvement in 3 studies, and bone marrow involvement in 1 study. More than one site of disease was seen in 9 PET/CT studies. On semiquantitative analysis, the overall mean splenic lesion SUVmax was 6.9 ± 7.9 (median, 4.6; range, 1.3-29). The mean value of ratio of SUVmax of splenic lesions and SUVliver was 4.4 ± 5.5 (median, 2.4; range, 0.9-24.2). On comparison of areas under the curve, the mean value of ratio of SUVmax of splenic lesions and SUVliver was found to be superior to SUVmax alone for this differentiation of involvement from normal spleen ($P=0.018$).

CONCLUSION: 18F-FDG PET/CT seems useful in patients with primary splenic lymphoma and shows high diagnostic accuracy.

58: Kassebaum NJ, Bertozzi-Villa A, Coggeshall MS, Shackelford KA, Steiner C, Heuton KR, Gonzalez-Medina D, Barber R, Huynh C, Dicker D, Templin T, Wolock TM, Ozgoren AA, Abd-Allah F, Abera SF, Abubakar I, Achoki T, Adelekan A, Ademi Z, Adou AK, Adsuar JC, Agardh EE, Akena D, Alasfoor D, Alemu ZA, Alfonso-Cristancho R, Alhabib S, Ali R, Al Kahbouri MJ, Alla F, Allen PJ, AlMazroa MA, Alsharif U, Alvarez E, Alvis-Guzmán N, Amankwaa AA, Amare AT, Amini H, Ammar W, Antonio CA, Anwari P, Arnlöv J, Arsenijevic VS, Artaman A, Asad MM, Asghar RJ, Assadi R, Atkins LS, Badawi A, Balakrishnan K, Basu A, Basu S, Beardsley J, Bedi N, Bekele T, Bell ML, Bernabe E, Beyene TJ, Bhutta Z, Bin Abdulhak A, Blore JD, Basara BB, Bose D, Breitborde N, Cárdenas R, Castañeda-Orjuela CA, Castro RE, Catalá-López F, Cavlin A, Chang JC, Che X, Christophi CA, Chugh SS, Cirillo M, Colquhoun SM, Cooper LT, Cooper C, da Costa Leite I, Dandona L, Dandona R, Davis A, Dayama A, Degenhardt L, De Leo D, del Pozo-Cruz B, Deribe K, Dessalegn M, deVeber GA, Dharmaratne SD, Dilmen U, Ding EL, Dorrington RE, Driscoll TR, Ermakov SP, Esteghamati A, Faraon EJ, Farzadfar F, Felicio MM, Fereshtehnejad SM, de Lima GM, Forouzanfar MH, França EB, Gaffikin L, Gambashidze K, Gankpé FG, Garcia AC, Geleijnse JM, Gibney KB, Giroud M, Glaser EL, Goginashvili K, Gona P, González-Castell D, Goto A, Gouda HN, Gughani HC, Gupta R, Gupta R, Hafezi-Nejad N, Hamadeh RR, Hammami M, Hankey GJ, Harb HL, Havmoeller R, Hay SI, Pi IB, Hoek HW, Hosgood HD, Hoy DG, Hussein A, Idrisov BT, Innos K, Inoue M, Jacobsen KH, Jahangir E, Jee SH, Jensen PN, Jha V, Jiang G, Jonas JB, Juel K, Kabagambe EK, Kan H, Karam NE, Karch A, Karema CK, Kaul A, Kawakami N, Kazanjan K, Kazi DS,

Kemp AH, Kengne AP, Kereselidze M, Khader YS, Khalifa SE, Khan EA, Khang YH, Knibbs L, Kokubo Y, Kosen S, Defo BK, Kulkarni C, Kulkarni VS, Kumar GA, Kumar K, Kumar RB, Kwan G, Lai T, Lalloo R, Lam H, Lansingh VC, Larsson A, Lee JT, Leigh J, Leinsalu M, Leung R, Li X, Li Y, Li Y, Liang J, Liang X, Lim SS, Lin HH, Lipshultz SE, Liu S, Liu Y, Lloyd BK, London SJ, Lotufo PA, Ma J, Ma S, Machado VM, Mainoo NK, Majdan M, Mapoma CC, Marcenes W, Marzan MB, Mason-Jones AJ, Mehndiratta MM, Mejia-Rodriguez F, Memish ZA, Mendoza W, Miller TR, Mills EJ, Mokdad AH, Mola GL, Monasta L, de la Cruz Monis J, Hernandez JC, Moore AR, Moradi-Lakeh M, Mori R, Mueller UO, Mukaigawara M, Naheed A, Naidoo KS, Nand D, Nangia V, Nash D, Nejjari C, Nelson RG, Neupane SP, Newton CR, Ng M, Nieuwenhuijsen MJ, Nisar MI, Nolte S, Norheim OF, Nyakarahuka L, Oh IH, Ohkubo T, Olusanya BO, Omer SB, Opio JN, Orisakwe OE, Pandian JD, Papachristou C, Park JH, Caicedo AJ, Patten SB, Paul VK, Pavlin BI, Pearce N, Pereira DM, Pesudovs K, Petzold M, Poenaru D, Polanczyk GV, Polinder S, Pope D, Pourmalek F, Qato D, Quistberg DA, Rafay A, Rahimi K, Rahimi-Movaghar V, ur Rahman S, Raju M, Rana SM, Refaat A, Ronfani L, Roy N, Pimental TG, Sahraian MA, Salomon JA, Sampson U, Santos IS, Sawhney M, Sayinzoga F, Schneider IJ, Schumacher A, Schwebel DC, Seedat S, Sepanlou SG, Servan-Mori EE, Shakh-Nazarova M, Sheikhabaei S, Shibuya K, Shin HH, Shiu I, Sigfusdottir ID, Silberberg DH, Silva AP, Singh JA, Skirbekk V, Sliwa K, Soshnikov SS, Sposato LA, Sreeramareddy CT, Stroumpoulis K, Sturua L, Sykes BL, Tabb KM, Talongwa RT, Tan F, Teixeira CM, Tenkorang EY, Terkawi AS, Thorne-Lyman AL, Tirschwell DL, Towbin JA, Tran BX, Tsilimbaris M, Uchendu US, Ukwaja KN, Undurraga EA, Uzun SB, Vallely AJ, van Gool CH, Vasankari TJ, Vavilala MS, Venketasubramanian N, Villalpando S, Violante FS, Vlassov VV, Vos T, Waller S, Wang H, Wang L, Wang X, Wang Y, Weichenthal S, Weiderpass E, Weintraub RG, Westerman R, Wilkinson JD, Woldeyohannes SM, Wong JQ, Wordofa MA, Xu G, Yang YC, Yano Y, Yentur GK, Yip P, Yonemoto N, Yoon SJ, Younis MZ, Yu C, Jin KY, El Sayed Zaki M, Zhao Y, Zheng Y, Zhou M, Zhu J, Zou XN, Lopez AD, Naghavi M, Murray CJ, Lozano R. Global, regional, and national levels and causes of maternal mortality during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2014 Sep 13;384(9947):980–1004. doi: 10.1016/S0140-6736(14)60696-6. Epub 2014 May 2. Erratum in: *Lancet*. 2014 Sep 13;384(9947):956. PubMed PMID: 24797575.

BACKGROUND: The fifth Millennium Development Goal (MDG 5) established the goal of a 75% reduction in the maternal mortality ratio (MMR; number of maternal deaths per 100,000 livebirths) between 1990 and 2015. We aimed to measure levels and track trends in maternal mortality, the key causes contributing to maternal death, and timing of maternal death with respect to delivery.

METHODS: We used robust statistical methods including the Cause of Death Ensemble model (CODEm) to analyse a database of data for 7065 site-years and estimate the number of maternal deaths from all causes in 188 countries between 1990 and 2013. We estimated the number of pregnancy-related deaths caused by HIV on the basis of a systematic review of the relative risk of dying during pregnancy for HIV-positive women compared with HIV-negative women. We also estimated the fraction of these deaths aggravated by pregnancy on the basis of a systematic review. To estimate the numbers of maternal deaths due to nine different causes, we identified 61 sources from a systematic review and 943 site-years of vital registration data. We also did a systematic review of reports about the timing of maternal death, identifying 142 sources to use in our analysis. We developed estimates for each country for 1990–2013 using Bayesian meta-regression. We estimated 95% uncertainty intervals (UIs) for all values.

FINDINGS: 292,982 (95% UI 261,017–327,792) maternal deaths occurred in 2013, compared with 376,034 (343,483–407,574) in 1990. The global annual rate of change in the MMR was -0.3% (-1.1 to 0.6) from 1990 to 2003, and -2.7% (-3.9 to -1.5) from 2003 to 2013, with evidence of continued acceleration. MMRs reduced consistently in south, east, and southeast Asia between 1990 and 2013, but maternal deaths increased in much of sub-Saharan Africa during the 1990s. 2070 (1290–2866) maternal deaths were related to HIV in 2013, 0.4% (0.2 – 0.6) of the global total. MMR was highest in the oldest age groups in both 1990 and 2013. In

2013, most deaths occurred intrapartum or postpartum. Causes varied by region and between 1990 and 2013. We recorded substantial variation in the MMR by country in 2013, from 956.8 (685.1-1262.8) in South Sudan to 2.4 (1.6-3.6) in Iceland.

INTERPRETATION: Global rates of change suggest that only 16 countries will achieve the MDG 5 target by 2015. Accelerated reductions since the Millennium Declaration in 2000 coincide with increased development assistance for maternal, newborn, and child health. Setting of targets and associated interventions for after 2015 will need careful consideration of regions that are making slow progress, such as west and central Africa.

FUNDING: Bill & Melinda Gates Foundation.

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59: Khandelwal P, Gupta A, Sinha A, Saini S, Hari P, Dragon Durey MA, Bagga A. Effect of plasma exchange and immunosuppressive medications on antibody titers and outcome in anti-complement factor H antibody-associated hemolytic uremic syndrome. *Pediatr Nephrol*. 2014 Sep 13. [Epub ahead of print] PubMed PMID: 25217328.

BACKGROUND: Anti-complement factor H (anti-CFH) antibody-associated hemolytic uremic syndrome (HUS) is an important cause of acute kidney injury in Indian children. While management comprises plasma exchange and immunosuppression, information on the impact on serial antibody titers and outcomes is limited.

METHODS: This retrospective study included 45 patients with anti-CFH-associated HUS who were followed for ≥ 12 months. Following the initial plasma exchange sessions, patients received prednisolone and either intravenous (IV) cyclophosphamide (n=31) or IV rituximab (n=14), followed by maintenance immunosuppression.

RESULTS: The median anti-CFH antibody titers fell from 3,215.5 [interquartile range (IQR) 1,977.9-8,453.9 to 414.6 (IQR 251.6-1,368.2) AU/ml with plasma exchange therapy ($P < 0.0001$), and the decline was similar with three, five, or seven plasma exchange sessions ($P = 0.08$). Serial anti-CFH titers were similar in patients receiving IV cyclophosphamide- and rituximab-based regimens during the 12-month follow-up ($P = 0.63$). Renal outcomes and relapse frequencies at the 15.4-month follow-up were comparable. Seven patients relapsed 6.5 (IQR 2.2-12.3) months from treatment onset. Patients with relapse had higher antibody titers during remission ($P = 0.017$). Titers of $\geq 1,300$ AU/ml at 6 months predicted subsequent relapses.

CONCLUSIONS: Our patients with anti-CFH antibody-associated HUS showed a significant fall in antibody titers following daily plasma exchange sessions. Therapy with cyclophosphamide- or rituximab-based regimens was associated with similar outcomes and a comparable decline in antibody titers.

60: Khanna N, Singh M, Rasool S, Ammini A, Bhatla N, Garg V, Rao S, Bhattacharya SN. Menstrual irregularities, fertility status, and ovarian function in female patients with leprosy in India. *Int J Dermatol*. 2014 Sep;53(9):1114-8. doi: 10.1111/j.1365-4632.2012.05771.x. Epub 2014 Jul 11. PubMed PMID: 25040568.

BACKGROUND: Gonadal involvement in males in lepromatous leprosy is not uncommon, but there is a paucity of literature on the involvement of gonads in female patients with leprosy. This study was undertaken to determine if there is any menstrual dysfunction, alteration in fertility status and circulating luteinizing hormone (LH), follicle-stimulating hormone (FSH), prolactin, and estradiol in female patients with paucibacillary (PB) and multibacillary (MB) leprosy.

MATERIALS AND METHODS: In a cross-sectional study, 229 patients with leprosy (79 with PB leprosy and 150 with MB leprosy) and 100 age-matched non-leprosy controls were evaluated for menstrual function, fertility status, and circulating sex hormones.

RESULTS: Twenty percent of patients with MB leprosy had menstrual irregularities post-dating the onset of leprosy in comparison to 6.3% patients with PB leprosy,

and this difference was statistically significant ($P < 0.001$). However, the fertility profile of patients with PB leprosy was comparable to that of patients with MB leprosy ($P > 0.05$). A significantly higher number of patients with MB leprosy (9.3%) had elevation of circulating FSH, LH, and prolactin vis-à-vis patients with PB leprosy (1.3%), and this difference was statistically significant ($P < 0.05$). Similarly, the mean levels of LH, FSH, and prolactin were significantly elevated in patients with MB leprosy vis-à-vis patients with PB leprosy and controls ($P < 0.05$).

CONCLUSIONS: Multibacillary leprosy may be associated with menstrual irregularities and elevation of gonadotropin hormones, indicating an ovarian dysfunction.

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61: Kothari SS. Non-cardiac issues in patients with heterotaxy syndrome. *Ann Pediatr Cardiol.* 2014 Sep;7(3):187-92. doi: 10.4103/0974-2069.140834. Review. PubMed PMID: 25298693.

Management of complex congenital heart disease in patients with Heterotaxy syndrome (HS) has steadily improved. However, there is an insufficient appreciation of various non-cardiac issues that might impact the overall status of these patients. This article briefly reviews the implications of gastrointestinal, immunologic, genitourinary, respiratory, and central nervous system involvement in HS patients with a view to aid in their comprehensive clinical management.

62: Kumar A, Midha N, Gogia V, Gupta S, Sehra S, Chohan A. Efficacy of oral valproic Acid in patients with retinitis pigmentosa. *J Ocul Pharmacol Ther.* 2014 Sep;30(7):580-6. doi: 10.1089/jop.2013.0166. Epub 2014 Jun 23. PubMed PMID: 24955739.

Abstract Purpose: To evaluate the efficacy of valproic acid (VPA) on visual function in patients with retinitis pigmentosa (RP). METHODS: Thirty patients (60 eyes) with typical RP were recruited for the study. Of these, 15 patients received oral VPA (500mg once daily) for a period of 1 year (group 1) and the remaining 15 received no treatment (group 2) and served as controls. The effect of VPA on visual function was determined in terms of visual acuity, amplitude and implicit time in multifocal electroretinography (mfERG), and visual evoked response (VER) performed at presentation and at the third month, sixth month, and 1 year in both groups. Side effects of oral VPA were also monitored.

RESULTS: At 1-year follow-up, 14 of 15 patients in group 1 had improvement in median best corrected visual acuity (BCVA) from 1.8 [Range (R) 1-3] at baseline to 1.3 (R, 0.6-1.3) ($P < 0.001$). In contrast, there was a slight decrease in median BCVA from 1.8 (0.8- 3) logarithm of the minimum angle of resolution (logMAR) at baseline to 1.83 ($P = 0.3$) in the control arm. There was also a statistically significant increase in improvement in amplitude and latency/implicit time in mfERG and VER in this group ($P < 0.001$). However, no such improvement was observed in the control arm.

CONCLUSIONS: Thus, VPA seems to have a positive effect on the visual functions in RP patients. Long-term studies evaluating the dose modifications, genetic analysis, and change in visual fields will add to our current knowledge.

63: Kumar K, Singh H, Gupta RK, Bal C, Kumar R. Erlotinib-Induced Cutaneous Toxicity: Findings on 18F-FDG PET/CT Imaging. *Clin Nucl Med.* 2014 Sep 30. [Epub ahead of print] PubMed PMID: 25275420.

Erlotinib is a reversible epidermal growth factor receptor tyrosine kinase inhibitor used to treat advanced non-small cell lung carcinoma patients who have shown progression on at least 1 prior chemotherapy regimen. Most of the patients on erlotinib show cutaneous adverse effects. We report the F-FDG PET/CT findings

in a case of metastatic non-small cell lung carcinoma on erlotinib chemotherapy with developed skin toxicity.

64: Kumar P, Pandya D, Singh N, Behera D, Aggarwal P, Singh S. Loop-mediated isothermal amplification assay for rapid and sensitive diagnosis of tuberculosis. *J Infect.* 2014 Sep 9. pii: S0163-4453(14)00278-3. doi: 10.1016/j.jinf.2014.08.017. [Epub ahead of print] PubMed PMID: 25218428.

OBJECTIVES: Loop-mediated isothermal amplification (LAMP) is a newly developed molecular method that can be performed isothermally. We developed and evaluated a LAMP assay using novel primers to diagnose tuberculosis directly from clinical samples.

MATERIALS: Primers were designed to amplify the specific novel *esat-6* gene target of *Mycobacterium tuberculosis* (MTB). Quantitated DNA was used to determine analytical sensitivity and specificity was evaluated by testing 29 NTM and 37 other bacterial species. After standardization, its sensitivity and specificity were evaluated on samples from 118 TB suspected and 31 non-TB patients and compared it with smear, culture and mPCR methods.

RESULTS: LAMP was able to detect 5 fg DNA (one MTB) within 21 min and found to be 10 times more sensitive than mPCR and showed 100% specificity against NTM and other bacterial species. In clinical samples, LAMP showed highest MTB detection rate (52.5%) as compared to mPCR (44%) and culture (30.5%). On culture positive and mPCR positive samples, the sensitivity of LAMP was found to be 100% (95% CI 90.2-100) and 96.1% (95% CI 86.7-99.5) respectively with 93.5% (95% CI 78.5-99.2) of overall specificity.

CONCLUSION: LAMP was found to be more sensitive than culture and mPCR for the detection of MTB. It showed specificity comparable to mPCR but was rapid and cost effective.

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66: Lamy A, Tong W, Devereaux PJ, Gao P, Gafni A, Singh K, Taggart D, Straka Z, Akar AR, Piegas L, Ou Y, Yusuf S. The Cost Implications of Off-Pump Versus On-Pump Coronary Artery Bypass Graft Surgery at One Year. *Ann Thorac Surg.* 2014 Sep 24. pii: S0003-4975(14)01330-7. doi: 10.1016/j.athoracsur.2014.06.046. [Epub ahead of print] PubMed PMID: 25261272.

BACKGROUND: The purpose of this study was to determine the cost implications of the Coronary Artery Bypass Graft Off or On Pump Revascularization Study (CORONARY) at 1 year.

METHODS: Country-specific healthcare costs were obtained from public databases or local experts from each country in the CORONARY trial. Purchasing power parities were applied to these costs of consumed healthcare resources. Analyses of subgroups included in the CORONARY clinical trial were also conducted. Costs are reported in US dollars.

RESULTS: After 1 year, the total cost per patient in the off-pump coronary artery bypass graft surgery (CABG) arm was \$9,650 (\$9,216 to \$10,285) compared with \$9,583 (\$9,239 to \$9,988) for the on-pump CABG arm; that resulted in a nonsignificant increase of \$68 (-\$575 to \$710). Similar findings were noted for various subgroups. There were also no differences due to late conversions.

CONCLUSIONS: The CORONARY trial demonstrated that off-pump CABG was clinically as safe and effective as on-pump CABG with no difference in costs. Thus, the decision as to which method to choose is free from costs considerations and should be based on patient preference and surgeon expertise (Coronary Artery

Bypass Graft [CABG] Off or On Pump Revascularization Study [CORONARY]; clinicaltrials.govNCT00463294).

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67: Madan K, Venuthurimilli A, Ahuja V, Hadda V, Mohan A, Guleria R. Tracheal penetration and tracheoesophageal fistula caused by an esophageal self-expanding metallic stent. *Case Rep Pulmonol*. 2014;2014:567582. doi: 10.1155/2014/567582. Epub 2014 Sep 3. PubMed PMID: 25276461; PubMed Central PMCID: PMC4167813.

Tracheal penetration of esophageal self-expanding metallic stents (SEMS) with/without tracheoesophageal fistula (TEF) formation is a rare occurrence. We report the case of a 66-year-old female patient with advanced esophageal squamous cell carcinoma who had undergone palliative esophageal stenting on three occasions for recurrent esophageal stent obstruction. On evaluation of symptoms of breathing difficulty and aspiration following third esophageal stent placement, tracheal erosion and TEF formation due to the tracheal penetration by esophageal stent were diagnosed. The patient was successfully managed by covered tracheal SEMS placement under flexible bronchoscopy.

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BACKGROUND: Enlargement of adipocyte is associated with their dysfunction and alterations in metabolic functions.

OBJECTIVES: We evaluated the association of adipocyte size of subcutaneous and omental adipose tissue with body composition and cardiovascular risk factors in Asian Indians.

METHODOLOGY: Eighty (40 males and 40 females) non-diabetic adult subjects undergoing elective abdominal surgery were included. Pre-surgery evaluation included anthropometric measurements, % body fat by bioimpedance, abdominal fat area at L2-3 level (computed tomography) and biochemical investigations (fasting blood glucose and insulin, lipids and hsCRP). During surgery, about 5 grams each of omental and subcutaneous adipose tissue was obtained for adipocyte size determination.

RESULTS: Females had higher BMI, % body fat, skinfold thickness, total and subcutaneous abdominal fat area as compared to males. Overweight was present in 42.5% and 67.5%, and abdominal obesity in 5% and 52.5% males and females, respectively. Subcutaneous adipocyte size was significantly higher than omental adipocyte size. Omental adipocyte size correlated more strongly than subcutaneous adipocyte size with measures of adiposity (BMI, waist circumference, %BF), total and subcutaneous abdominal fat area and biochemical measures (fasting glucose, total cholesterol, triglycerides and HOMA-IR), the correlations being stronger in females. The correlation of adipocyte size with metabolic parameters was attenuated after adjusting for measures of adiposity.

CONCLUSION: Omental adipocyte size, though smaller than the subcutaneous adipocyte size, was more closely related to measures of adiposity and metabolic parameters. However, the relationship was not independent of measures of adiposity.

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Extramedullary relapse in acute promyelocytic leukemia (APL) is rare, but occurs most commonly in central nervous system (CNS), generally in high-risk cases (total leucocyte count $\geq 10,000/\mu\text{L}$, atypical morphology or disseminated intravascular coagulation at presentation), and concomitant with bone marrow (BM) relapse. Here, we describe a case of APL who except for CD56 positivity was low risk but had a CNS relapse without concomitant BM involvement. Diagnosis of isolated CNS relapse was based on characteristic tear-drop pattern for CD45/side scatter plot on flow cytometry, a full compatible immunophenotype and cytomorphology in the cerebrospinal fluid. The case illustrates the value of the latter and the importance of including CD56 in risk assessment of APL. © 2014 International Clinical Cytometry Society.

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Extramedullary relapse in acute promyelocytic leukemia (APL) is rare, but occurs most commonly in central nervous system (CNS), generally in high-risk cases (total leucocyte count $\geq 10,000/\mu\text{L}$, atypical morphology or disseminated intravascular coagulation at presentation), and concomitant with bone marrow (BM) relapse. Here we describe a case of APL who except for CD56 positivity was low-risk, but had a CNS relapse without concomitant BM involvement. Diagnosis of isolated CNS relapse was based on characteristic tear-drop pattern for CD45/side scatter plot on flow cytometry, a full compatible immunophenotype and cytomorphology in the cerebrospinal fluid. The case illustrates the value of the latter and the importance of including CD56 in risk assessment of APL. © 2014 Clinical Cytometry Society.

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BACKGROUND: The reported efficiency of differentiation of human bone marrow derived Mesenchymal Stem Cells (hBM MSC) into dopaminergic neurons with different

inducers is found to vary. Thus, in the current study we have investigated the response of hBM MSC to some of the neuronal inducers and their combinations. Neuronal differentiation inducing agents Fibroblastic Growth Factor 2 (FGF2), Sonic Hedge Hog (Shh), Fibroblastic Growth Factor 8 (FGF8) & All Trans Retinoic Acid (ATRA) were used either singly or in varied combinations.

RESULTS: The differentiated and undifferentiated hBM MSC were characterized in terms of morphology, expression of cell markers at transcriptional and translational levels, amount of dopamine secreted by the cells in the media and changes in cell membrane potential by calcium ions imaging. Induced hBM MSC revealed neuron like morphology and expressed cellular markers suggesting neuronal differentiation with all the inducing agents. However, upon quantitative analysis through qPCR, cells induced with FGF2 were found to show maximum expression of tyrosine hydroxylase (TH) by 47.5 folds. Immunofluorescence analysis of differentiated and undifferentiated cells also revealed expression of nestin, neurofilament, microtubule associated protein- 2, beta tubulin III and TH in differentiated cells, at translational level. This data was supported by immunoblotting analysis. Further, ELISA study also supported the release of dopamine by cultures induced with FGF2. When the cells were depolarised with KCl solution, those induced with Shh & FGF8 showed maximum calcium ion trafficking, followed by the cells induced with FGF2 only.

CONCLUSIONS: We conclude that hBM MSC can be coaxed to differentiate efficiently into dopaminergic neurons in the presence of a very simple media cocktail containing only one main inducer like FGF2 and thus contribute towards cellular therapy in Parkinson's and other related disorders. These dopaminergic neurons are also functionally active, as shown by calcium ion trafficking.

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77: Nehra A, Singla S, Bajpai S, Malviya S, Padma V, Tripathi M. Inverse relationship between stigma and quality of life in India: Is epilepsy a disabling neurological condition? *Epilepsy Behav.* 2014 Sep 17;39C:116-125. doi: 10.1016/j.yebeh.2014.07.004. [Epub ahead of print] PubMed PMID: 25240123.

OBJECTIVE: Stigma associated with epilepsy has negative effects on psychosocial outcomes, affecting quality of life (QOL) and increasing disease burden in persons with epilepsy (PWEs). The aim of our study was to measure the impact of stigma on the QOL of PWEs and the prevalence of neurological disability due to stigmatized epilepsy.

METHOD: A prospective observational study with a sample of 208 PWEs was conducted. Neuropsychological Tests used were the Indian Disability Evaluation Assessment Scale (IDEAS) to measure disability, the Dysfunctional Analysis Questionnaire (DAQ) to measure QOL, and the Stigma Scale for Epilepsy (SSE) to assess stigma.

RESULTS: Spearman correlation was calculated, and stigma (SSE) was highly significant with QOL (DAQ) (0.019) and disability due to stigmatized epilepsy (IDEAS) (0.011).

CONCLUSION: The present study supports the global perception of stigma associated with epilepsy and its negative impact on their overall QOL and its contribution to the escalation of the disease burden.

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78: Ojha A, Gupta Y. Evaluation of genotoxic potential of commonly used organophosphate pesticides in peripheral blood lymphocytes of rats. *Hum Exp Toxicol.* 2014 Sep 8. pii: 0960327114537534. [Epub ahead of print] PubMed PMID: 25205738.

Chlorpyrifos (CPF), methyl parathion (MPT), and malathion (MLT) are among the most extensively used organophosphate (OP) pesticides in India. DNA protein cross-links (DPC) and DNA strand breaks are toxic lesions associated with the mechanism(s) of toxicity of carcinogenic compounds. In the present study, we examined the hypothesis that individual and interactive genotoxic effects of CPF, MPT, and MLT are involved in the formation of DPC and DNA strand break. The DNA strand break was measured by comet assay and expressed as DNA damage index, while DPC estimation was carried out by fluorescence emission assay. The results showed that exposure of rat lymphocytes with CPF, MPT, and MLT caused significantly marked increase in DNA damage and DPC formation in time-dependent manner. MPT caused the highest damage, and these pesticides do not potentiate the toxicity of each other.

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80: Panda A, Sharma S, Jana M, Arora A, Sharma SK. Ophthalmic manifestations of systemic diseases--part 2: metabolic, infections, granulomatoses, demyelination, and skeletal dysplasias. *Curr Probl Diagn Radiol*. 2014 Sep-Oct;43(5):242-53. doi: 10.1067/j.cpradiol.2014.02.003. PubMed PMID: 25088219.

The orbit and globe can be secondarily involved in various systemic diseases. These range from tumor and tumorlike conditions, metabolic, infective, inflammatory, granulomatous demyelinating diseases, and skeletal dysplasias. In this article, we discuss the imaging appearances of the remaining systemic pathologies affecting the orbit such as (1) endocrine or metabolic, (2) infectious, (3) inflammatory or granulomatous, (4) demyelinating diseases, and (5) skeletal dysplasias. As the imaging appearances of various systemic diseases tend to overlap, we also introduce a list of pattern-based systemic differential diagnoses for commonly encountered orbital imaging findings. Awareness of the imaging appearances of the various ophthalmic manifestations of systemic diseases can help a radiologist to suggest the most appropriate differential diagnosis to guide further workup and facilitate correct treatment.

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81: Pannu CD, Morey V, Prashant B, Rastogi S. Pigmented villonodular synovitis of 1st metatarsophalangeal joint: a case report and literature review. *Foot (Edinb)*. 2014 Sep;24(3):146-8. doi: 10.1016/j.foot.2014.05.001. Epub 2014 May 15. PubMed PMID: 24948116.

Pigmented villonodular synovitis is a common disease entity particularly in the knee joint but its incidence in the foot is quite rare. A case of first metatarsophalangeal (MTP) joint pigmented villonodular synovitis (PVNS), presented to us with recurrence of symptoms after surgical excision done outside our institute. After histological confirmation of recurrence of the disease, repeat open surgical excision was performed. After being asymptomatic for two months she presented to us with recurrence of symptoms for which hyperkeratotic plaque at the ventral aspect of the first MTP joint was found to be responsible on physical examination. It was treated surgically by pairing it and now patient is symptom free for last 1 year. It signifies the importance of the histopathology in the diagnosis and recurrence of the PVNS and thorough physical examination in the management of the foot pathologies.

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82: Pant N, Kumar G, Upadhyay AD, Gupta YK, Chaturvedi PK. Correlation between lead and cadmium concentration and semen quality. *Andrologia*. 2014 Sep 16. doi: 10.1111/and.12342. [Epub ahead of print] PubMed PMID: 25228328.

There are contrary reports of association of lead and cadmium with the decline in semen quality. This study evaluates whether seminal lead (Pb) and cadmium (Cd) at environmental concentration are associated with altered semen quality. We conducted a study of healthy fertile and infertile men 20-43 years of age attending the Andrology Laboratory of Reproductive Biology Department for semen analysis. The semen analysis was carried out according to the WHO 2010 guidelines. Seminal lead and cadmium were estimated by ICP-AES. The lead and cadmium values were significantly higher in infertile subjects. A negative association between seminal lead or cadmium concentration and sperm concentration, sperm motility and per cent abnormal spermatozoa was found. This study shows that exposure to Pb (5.29-7.25 $\mu\text{g dl}^{-1}$) and cadmium (4.07-5.92 $\mu\text{g dl}^{-1}$) might affect semen profile in men. Age, diet, smoking and tobacco chewing habits may have an influence on the increase in exposure to Pb and Cd in the individual subjects.

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83: Pant N, Kumar G, Upadhyay AD, Patel DK, Gupta YK, Chaturvedi PK. Reproductive toxicity of lead, cadmium, and phthalate exposure in men. *Environ Sci Pollut Res Int*. 2014 Sep;21(18):11066-74. doi: 10.1007/s11356-014-2986-5. Epub 2014 May 11. PubMed PMID: 24816463.

Environmental toxicants viz lead or cadmium and phthalate esters (di(2-ethylhexyl) phthalate [DEHP], dibutyl phthalate [DBP], and diethyl phthalate [DEP]) widely found in different environmental strata are linked to deteriorating male reproductive health. The objective was to assess the relationships between the seminal lead, cadmium, and phthalate (DEHP, DBP, DEP) concentrations at environmental level and serum hormone levels and semen quality in non-occupationally exposed men and specify the effect of individual and combined exposure of toxicants on semen quality. A study of 60 male partners of couples attending the Andrology Laboratory of the Reproductive Biology Department, All India Institute of Medical Sciences (AIIMS), New Delhi, India for semen analysis to assess their inability to achieve a pregnancy was selected for the study. The results of univariate and stepwise multiple regression analysis in the unadjusted model showed a significant correlation between lead or cadmium and phthalates DEHP/DBP/DEP and sperm motility, sperm concentration, and DNA damage. After adjusting for potential confounders, an association with lead or DEHP was only observed. The present data shows that lead (Pb) or cadmium (Cd) or phthalates might independently contribute to decline in semen quality and induce DNA damage. Phthalates might influence reproductive hormone testosterone. These findings are significant in light of the fact that men are exposed to a volley of chemicals; however, due to the small sample size, our finding needs to be confirmed in a larger population.

84: Pant N, Shukla M, Upadhyay AD, Chaturvedi PK, Saxena DK, Gupta YK. Association between environmental exposure to p, p'-DDE and lindane and semen quality. *Environ Sci Pollut Res Int*. 2014 Sep;21(18):11009-16. doi: 10.1007/s11356-014-2965-x. Epub 2014 May 6. PubMed PMID: 24793071.

Scientific concern exists about the toxic effect of dichlorodiphenyldichloroethylene (p, p'-DDE) and lindane on male infertility, and the mechanism underlying male reproductive toxicity of this pesticide remains unanswered. We investigated not only the possible association between the chlorinated pesticide levels and semen quality in nonoccupationally exposed men, but also the probable mode of action using mitochondrial membrane potential (MMP), reactive oxygen species (ROS), lipid peroxidation (LPO), and sperm

chromatin structure assay (SCSA). A study in 278 men (21-40 years old) who visited Obstetrics and Gynecology Department, KGMU, Lucknow, for semen analysis was conducted. We performed semen analysis according to the WHO guidelines, while p, p'-DDE and lindane analysis was done by the GLC and LPO by the spectrophotometer, and the sperm mitochondrial status, ROS, and SCSA with the flow cytometer. The questionnaire data showed no significant difference in the demographic characteristics between the two groups, i.e., trying to conceive >1 year and proven fertility. However, a significant difference in the concentration of p, p'-DDE and lindane was observed between the groups. When the subjects were divided among four categories by quartile of exposure, the subjects in the highest quartile showed low sperm motility as compared to the subjects in the lowest quartile. Pearson's correlation showed a significant negative correlation between semen p, p'-DDE, lindane level, and sperm quality and positive association with the number of cells with depolarized mitochondria, elevation in ROS production and LPO, and DNA fragmentation index (DFI). The findings are suggestive that these toxicants might cause a decline in semen quality, and these effects might be ROS, LPO, and mitochondrial dysfunction mediated.

85: Patil B, Tandon R, Sharma N, Verma M, Upadhyay AD, Gupta V, Sihota R. Corneal Changes in Childhood Glaucoma. *Ophthalmology*. 2014 Sep 4. pii: S0161-6420(14)00638-1. doi: 10.1016/j.ophtha.2014.07.029. [Epub ahead of print] PubMed PMID: 25200398.

OBJECTIVE: To study the clinical features and topography of the cornea in eyes with childhood glaucoma.

DESIGN: Cross-sectional, observational study.

PARTICIPANTS: Fifty-eight eyes with childhood glaucoma and 28 eyes of age-matched controls.

METHODS: Clinical and topographic corneal changes were evaluated.

MAIN OUTCOME MEASURES: Corneal topographic changes were evaluated on Orbscan (Orbscan Topography System II; Bausch & Lomb, Salt Lake City, UT) in eyes with childhood glaucoma and those changes were compared with the control eyes.

RESULTS: Fifty-eight eyes with childhood glaucoma and 28 eyes of age-matched controls were evaluated. Thirty-six eyes (62.1%) were classified as having primary childhood glaucoma and 22 eyes (37.94%) as having childhood glaucoma with associated ocular anomalies. The corneas in 18 of 58 eyes (31.0%) with childhood glaucoma were clear, whereas 24.1% of eyes (14/58 eyes) had some corneal opacification. Haab's striae were noted in 44.8% of eyes (26/58 eyes) and were most frequently present between 3 and 5 mm from the optical axis. The mean posterior elevation recorded in eyes with childhood glaucoma controlled with medication or surgery was significantly higher than that in control eyes: 0.043 ± 0.027 , 0.042 ± 0.017 , and 0.018 ± 0.058 μm , respectively ($P < 0.0001$). The presence of Haab's striae was correlated significantly with a higher posterior elevation ($P = 0.0396$) and poor vision. The mean anterior elevation in eyes with childhood glaucoma (0.022 ± 0.015 μm) and in control eyes (0.015 ± 0.078 μm) was comparable ($P = 0.08$). Corneal astigmatism in eyes with childhood glaucoma was significantly higher and irregular compared with that in control eyes: 2.09 ± 1.40 versus 0.93 ± 0.60 diopter cylinder ($P = 0.0001$); the irregularity index was 2.8 (range, 1-18.1) and 2.3 (range, 0.6-2.3) at 3 mm ($P = 0.0005$) and 3.2 (range, 1.4-21.3) and 1.8 (range, 0.5-2.9) at 5 mm, respectively ($P = 0.0003$). Best-corrected visual acuity correlated significantly with cup-to-disc ratio, axial length, refractive error, astigmatism, and posterior corneal elevation. Multivariate analysis showed a significant correlation only with cup-to-disc ratio and axial length.

CONCLUSIONS: Childhood glaucoma causes a significant increase in posterior corneal elevation and irregular astigmatism, which contribute to visual disability in such eyes.

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86: Pradhan B, Jindal A. Invasive pulmonary aspergillosis in an immunocompetent patient with severe dengue fever. *Indian J Crit Care Med.* 2014 Sep;18(9):637-8. doi: 10.4103/0972-5229.140158. PubMed PMID: 25249751; PubMed Central PMCID: PMC4166882.

87: Prasad GL, Gupta DK, Mahapatra AK, Borkar SA, Sharma BS. Surgical results of growing skull fractures in children: a single centre study of 43 cases. *Childs Nerv Syst.* 2014 Sep 17. [Epub ahead of print] PubMed PMID: 25227164.

PURPOSE: Growing skull fractures are rare complications of traumatic skull fractures in children. The authors aim to share their experience in management of such lesions and analyse clinicoradiological features, surgical management and outcome in addition to prognostication factors.

MATERIALS AND METHODS: Retrospective study performed to include patients ≤ 18 years operated for growing skull fractures at our trauma centre from December 2007 to February 2014.

RESULTS: Forty-three children were operated. Mean age at presentation was 4.57 years (range 7 months-18 years). Mean duration of onset of symptoms from initial trauma was 3.34 months (2 days-24 months). Mean interval from symptom onset to surgical repair was 11.6 months (1 week-15 years). Progressive non-tender scalp swelling was the most common symptom and parietal, the most common location. Duraplasty alone was performed in four patients while combined duro-cranioplasty was performed in the rest. Mean follow-up duration was 31 months (4-72 months). Subdural hygroma was associated in six cases. Two patients expired; rest all survivors had good-to-excellent cosmetic outcomes.

CONCLUSIONS: Being the second largest series to date, it adds significant valuable contribution to this topic. Poor prognostic factors were age > 8 years, females, large defects (> 7 cm), severe head injury at initial trauma, defects crossing midline and delayed repair (> 8 months). Delayed onset seizures and new onset/progression of pre-existing deficits can be indirect markers of evolution. Surgical repair with water-tight dural closure is the standard treatment. Emphasis on early treatment is highlighted which is probably beneficial in improving neurological deficits. Good-to-excellent outcomes are noted in majority, even in cases with delayed presentations.

88: Pratap Mouli V, Benjamin J, Bhushan Singh M, Mani K, Garg SK, Saraya A, Joshi YK. Effect of probiotic VSL#3 in the treatment of minimal hepatic encephalopathy- a non-inferiority randomized controlled trial. *Hepatol Res.* 2014 Sep 29. doi: 10.1111/hepr.12429. [Epub ahead of print] PubMed PMID: 25266207.

BACKGROUND: Minimal hepatic encephalopathy (MHE) impairs daily functioning and health related quality of life in chronic liver disease (CLD). Lactulose is the standard treatment but has side effects; Probiotics have encouraging role in MHE.

AIM: To test whether probiotics is non-inferior to lactulose in improving MHE.

METHODS: Patients with CLD (n=227) were screened for MHE using neuropsychometrics tests - Number Connection Tests A and B (or Figure Connection Tests A and B) and/or neurophysiologic test - P-300 auditory event related potential; 120 (53%) were diagnosed with MHE by abnormal tests. MHE patients were randomized to lactulose [n=60; dose 30-60 ml/d] or probiotic [n=60; dose 4 capsules of VSL# 3; total 450 billion CFU/day] for 2 months. Response was defined as normalization of tests. Serum ammonia was measured by commercial kit.

RESULTS: Of 120 patients randomized, 40 in lactulose and 33 in probiotic arm completed 2 months of intervention. MHE improved in 25/40 (62.5%) patients taking lactulose and 23/33 (69.7%) taking probiotics. The effect size of difference of improvement in MHE between lactulose & probiotic was 0.072 [95% CI (-0.1475, 0.2915)] as per per-protocol analysis and 0.040 [95% CI (-0.19, 0.11)] as per ITT analysis (within -20% of non-inferiority margin). Serum ammonia was comparable between groups at baseline and 2 months; it decreased in patients in whom MHE

improved, while increased in patients with no improvement in MHE.

CONCLUSION: The probiotic-VSL#3 was non-inferior to the standard therapy-lactulose in the treatment of MHE. Improvement in MHE correlated with reduction of ammonia levels.

89: Raj D, Bhutia TD, Mathur S, Kabra SK, Lodha R. Pulmonary Alveolar Proteinosis Secondary to Pneumocystis jiroveci Infection in an Infant with Common Variable Immunodeficiency. Indian J Pediatr. 2014 Sep;81(9):929-31. doi: 10.1007/s12098-013-1027-6. Epub 2013 May 5. PubMed PMID: 23645284.

The authors report an infant with common variable immunodeficiency (CVID) with Pneumocystis pneumonia who developed secondary pulmonary alveolar proteinosis (PAP). This is the youngest infant reported to develop PAP secondary to Pneumocystis infection in an immunocompromised state. He was effectively managed with anti-microbials, frequent lung toilet, optimized mechanical ventilation, and supportive care.

90: Rajkumari N, Thanbuana BT, John NV, Gunjiyal J, Mathur P, Misra MC. A prospective look at the burden of sharps injuries and splashes among trauma health care workers in developing countries: True picture or tip of iceberg. Injury. 2014 Sep;45(9):1470-8. doi: 10.1016/j.injury.2014.03.001. Epub 2014 Mar 11. PubMed PMID: 24680470.

OBJECTIVES: Health care workers (HCWs) face constant risk of exposure to cuts and splashes as occupational hazard. Hence, a prospective observational study was conducted to observe the exposure of HCWs to various sharp injuries and splashes during health care and to work up a baseline injury rate among HCWs for future comparison in trauma care set ups.

METHODS: A 2 year and 5 month study was conducted among the voluntarily reported exposed HCWs of the APEX trauma centre. Such reported cases were actively followed for 6 months after testing for viral markers and counselled. The outcomes of such exposed HCWs and rate of seroconversion was noted. To form a future reference point, the injury rate in trauma care HCWs based on certain defined parameters along with the rate of under reporting were also analysed in this study.

RESULTS: In our study, doctors were found to have the highest exposure (129, 36.2%), followed by nurses (52, 14.6%) and hospital waste disposal staff (27, 7.6%). Of the source patients, a high number of them were HBV positive (11, 3.1%), followed by HIV positive patients (8, 2.2%). No seroconversion was seen in any of the exposed HCWs. Injuries by sharps (303, 85.1%) outnumber those due to splashes (53, 14.9%) which were much higher in those working in pressing situations. Underreporting was common, being maximally prevalent in hospital waste disposal staff (182, 51.1%).

CONCLUSIONS: High rates of exposure to sharp injuries and splashes among HCWs call for proper safety protocols. Proper methods to prevent it, encouraging voluntary reporting and an active surveillance team are the need of the hour.

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91: Ramachandran R, Rewari V, Chandralekha C, Sinha R, Trikha A, Sharma P. Sub-Tenon block does not provide superior postoperative analgesia vs intravenous fentanyl in pediatric squint surgery. Eur J Ophthalmol. 2014 Sep-Oct;24(5):643-9. doi: 10.5301/ejo.5000438. Epub 2014 Feb 13. PubMed PMID: 24619855.

PURPOSE: We evaluated the efficacy of sub-Tenon block in decreasing perioperative pain, incidence of intraoperative oculocardiac reflex (OCR), and postoperative nausea and vomiting (PONV) in pediatric squint surgery.

METHODS: A total of 67 children age 2-12 years, American Society of Anesthesiologists Physical Status 1 and 2, were randomized to receive either sub-Tenon block (ST) in the operative eye or 2 mcg/kg of intravenous fentanyl (F)

for squint surgery after induction of general anesthesia in this double-blind study. Postoperative pain was measured by either modified Children's Hospital of Eastern Ontario Pain Scale (CHEOPS) or Visual Analogue Scale (VAS). Pain in the postoperative period (up to 2 hours) was measured as the primary endpoint. Other parameters measured in the groups were intraoperative hemodynamics, postoperative modified CHEOPS or VAS at shifting, 1, 2, 6, 12, and 24 hours after surgery, incidence of intraoperative OCR, and PONV at shifting, 30 minutes, 1, 2, 6, 12, and 24 hours after surgery.

RESULTS: There was no statistical difference in the postoperative pain scores in the recovery room up to 2 hours after surgery. The VAS and CHEOPS scores were not different in the groups up to 24 hours after surgery. The incidence of OCR was significantly higher in group F than group ST. The incidence of PONV was significantly higher in group F than group ST at 30 minutes and 1 hour after the surgery (41%, 47% vs 19%, 9%, respectively, $p < 0.05$). However, there was no statistically significant difference in intraoperative hemodynamics and PONV scores after 2 hours in the postanesthesia care unit.

CONCLUSIONS: Use of sub-Tenon block does not decrease the incidence of postoperative pain significantly in children undergoing squint surgery. However, it leads to a statistically significant decrease in the incidence of intraoperative OCR and PONV in the early recovery period in these patients.

92: Rangarajan K, Das CJ, Kumar A, Gupta AK. MRI in central nervous system infections: A simplified patterned approach. *World J Radiol.* 2014 Sep 28;6(9):716-25. doi: 10.4329/wjr.v6.i9.716. Review. PubMed PMID: 25276314; PubMed Central PMCID: PMC4176788.

Recognition and characterization of central nervous system infections poses a formidable challenge to the neuro-radiologist. Imaging plays a vital role, the lesions typically being relatively inaccessible to tissue sampling. The results of an accurate diagnosis are endlessly rewarding, given the availability of excellent pharmacological regimen. The availability of numerous magnetic resonance (MR) sequences which provide functional and molecular information is a powerful tool in the hands of the radiologist. However, the plethora of sequences and the possibilities on each sequence is also intimidating, and often confusing as well as time consuming. While a large number of reviews have already described in detail the possible imaging findings in each infection, we intend to classify infections based on their imaging characteristics. In this review we describe an algorithm for first classifying the imaging findings into patterns based on basic MR sequences (T1, T2 and enhancement pattern with Gadolinium), and then sub-classify them based on more advanced molecular and functional sequences (Diffusion, Perfusion, Susceptibility imaging, MR Spectroscopy). This patterned approach is intended as a guide to radiologists in-training and in-practice for quickly narrowing their list of differentials when faced with a clinical challenge. The entire content of the article has also been summarised in the form of flow-charts for the purpose of quick reference.

93: Roy SG, Karunanithi S, Dhull VS, Bal C, Kumar R. (18)F-FDG PET/CT aids the diagnosis of adult onset Still's disease in a patient with fever of unknown origin. *Rev Esp Med Nucl Imagen Mol.* 2014 Sep 15. pii: S2253-654X(14)00082-1. doi: 10.1016/j.remnm.2014.03.001. [Epub ahead of print] PubMed PMID: 25242172.

94: Sahai P, Kakkar A, Pathy S, Kumar L, Bhatla N, Chander S. Synchronous malignant mixed Müllerian tumor of the uterus with transitional cell carcinoma of the ovary. *J Obstet Gynaecol Res.* 2014 Sep 17. doi: 10.1111/jog.12510. [Epub ahead of print] PubMed PMID: 25227514.

A 55-year-old woman presented with a complaint of post-menopausal bleeding per vaginum. Local examination revealed a mass, protruding from the cervical os, which detached spontaneously. An adnexal mass was felt through the pouch of Douglas on per vaginum examination. Histopathological examination of the avulsed

specimen revealed a diagnosis of malignant mixed Müllerian tumor. The patient underwent surgical staging with total abdominal hysterectomy, bilateral salpingo-oophorectomy, left pelvic lymphadenectomy, infracolic omentectomy, and peritoneal wash cytology. Pathological examination revealed a second primary tumor, that is, a transitional cell carcinoma of the ovary. Both the uterine malignant mixed Müllerian tumor and the ovarian transitional cell carcinoma were staged as IA. Subsequently, the patient was treated with adjuvant chemotherapy followed by radiotherapy. The patient is in complete remission at 1 year following the treatment. Synchronous genital tract neoplasms constitute a therapeutic challenge and necessitate an effective multimodality therapeutic approach based on meticulous pathological examination and tumor staging.

© 2014 The Authors. Journal of Obstetrics and Gynaecology Research © 2014 Japan Society of Obstetrics and Gynecology.

95: Sankar J, Das RR, Jain A, Dewangan S, Khilnani P, Yadav D, Dubey N. Prevalence and Outcome of Diastolic Dysfunction in Children With Fluid Refractory Septic Shock-A Prospective Observational Study. *Pediatr Crit Care Med*. 2014 Sep 16. [Epub ahead of print] PubMed PMID: 25230313.

OBJECTIVES:: Our primary objective was to determine the prevalence and outcome of diastolic dysfunction in children with fluid refractory septic shock. The secondary objective was to determine possible early predictors of diastolic dysfunction.

DESIGN:: Prospective observational study.

SETTING:: PICU of a tertiary care teaching hospital.

PATIENTS:: Consecutive children 17 years old or younger with fluid refractory septic shock and not on mechanical ventilation admitted to our ICU from June 2011 to August 2012 were included. Survivors were followed up till 1 year of discharge (July 2013).

INTERVENTIONS:: Children were subjected to 2D echocardiography and qualitative cardiac troponin-T test within the first 6 hours of admission.

MEASUREMENTS AND MAIN RESULTS:: A total of 56 children were included. Median age was 7 years (interquartile range, 1.5, 14) and majority (52%) were males. Most common underlying diagnoses were meningitis and pneumonia. The prevalence of diastolic dysfunction was 41.1% (95% CI, 27.8-54.4), and mortality rate was 43% in those with diastolic dysfunction. At 1-year follow-up, residual dysfunction was present in only one of 11 of the survivors (11%). On univariable analysis of possible early predictors of diastolic dysfunction, we observed that these children tended to have higher mean central venous pressure (13 vs 6; $p < 0.0001$) and greater positivity for cardiac troponin-T (70% vs 36%; $p = 0.01$) compared with others. Although factors such as duration of illness and diastolic blood pressure were also lower in children with diastolic dysfunction compared with others, the difference was not statistically significant. On multivariable analysis, only the variable central venous pressure remained significant (adjusted odds ratio, 1.6; 95% CI, 1.12-2.14; $p = 0.008$).

CONCLUSIONS:: Diastolic dysfunction is common in children with fluid refractory septic shock, and immediate outcomes may be poorer in such patients. Increased central venous pressure after initial fluid resuscitation may be an early indicator of diastolic dysfunction and warrant urgent bedside echocardiography to guide further management.

96: Sankar J, Sankar MJ. The authors reply. *Pediatr Crit Care Med*. 2014 Sep;15(7):686-7. doi: 10.1097/PCC.000000000000188. PubMed PMID: 25186331.

97: Saraf DS, Gupta SK, Pandav CS, Nongkinrih B, Kapoor SK, Pradhan SK, Krishnan A. Effectiveness of a School Based Intervention for Prevention of Non-communicable Diseases in Middle School Children of Rural North India: A Randomized Controlled Trial. *Indian J Pediatr*. 2014 Sep 12. [Epub ahead of print] PubMed PMID: 25209052.

OBJECTIVE: To assess the effectiveness of a multi-component school based intervention in improving knowledge and behavioral practices regarding diet, physical activity and tobacco use in middle schoolchildren of rural-Ballabgarh, North-India.

METHODS: A total of 40 middle schools were grouped into two, based on geographic proximity and randomly assigned to the intervention or control group in a cluster randomized controlled trial. The target population consisted of 2,348 children studying in 6th and 7th grades in these schools. The intervention consisted of a school component (policies), a classroom component (activities) and a family component [Information Education & Communication (IEC) material]. The main outcome measures were knowledge and behavioral changes in physical activity, diet and tobacco which were self-reported.

RESULTS: Post-intervention, a significant number of intervention schools adopted the tobacco policy (16/19), physical activity policy (6/19) and healthy food policy (14/19) as compared to the control schools (n=21). Knowledge about physical activity, diet and tobacco improved significantly in the intervention group as compared to the control group. Proportion of students attending Physical Training (PT) classes for five or more days in a week in the intervention group compared to the control group increased significantly (17.8 %; $p < 0.01$). Proportion of students consuming fruits increased in the intervention group compared to the control group (10 %; $p < 0.01$). Pre-post decrease in the prevalence of current smoking was significantly more in the intervention group as compared to the control group (7.7 %; $p < 0.01$).

CONCLUSIONS: Healthy settings approach for schools is feasible and effective in improving knowledge and behavioral practices of non-communicable diseases (NCD) risk factors in adolescents in rural India.

98: Saurav C, Aayushi G, Behera C, Karthik K, Millo T, Gupta S. Medico-legal autopsy of 1355 unclaimed dead bodies brought to a tertiary care hospital in Delhi, India (2006-2012). *Med Leg J.* 2014 Sep;82(3):112-5. doi: 10.1177/0025817214533759. Epub 2014 May 28. PubMed PMID: 24871325.

In India, it is estimated that about 13 million people are homeless. As these individuals have no close acquaintances, in the event of death, their bodies remain unclaimed. These unclaimed corpses pose a major challenge for the local law enforcement agencies in identification and thus become an obstacle in solving the cases of missing persons. We sought to review the autopsy characteristics and causes of death in the unclaimed/unidentified bodies autopsied at the All India Institute of Medical Sciences (AIIMS) from 2006 to 2012. Among the total of 11,786 cases autopsied during the year 2006 to 2012, 1335 (11%) were unclaimed. Most of the cases were males (91%) with a male-to-female ratio of 9:1. Mean age of the cohort was 43 years (range, 1-85 years). Natural events were the foremost cause of death and were more commonly seen in males. While accidental, suicidal and homicidal modes were common in younger age groups; natural manner of death predominated in the elderly. Most of the cases were found dead on the roadside. This paper also compares with the previous study in the same set-up during the time period 2001 to 2005. The authors believe that knowledge about the existing healthcare facilities need to be reinforced and their utilisation promoted.

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99: Saxena A. Increasing detection of rheumatic heart disease with echocardiography. *Expert Rev Med Devices.* 2014 Sep;11(5):491-7. doi: 10.1586/17434440.2014.930661. Epub 2014 Jun 17. PubMed PMID: 24934495.

Rheumatic heart disease (RHD) is estimated to affect over 20 million people worldwide, the vast majority being in developing countries. Screening for RHD has been recommended by the WHO since 2004. Conventionally, auscultation has been

used for diagnosing RHD. Auscultation has its limitation and may not detect mild cases. A large number of studies have reported echocardiographic screening for RHD over the last several years. Most of these studies report an almost 10-fold higher prevalence of RHD by echocardiography as compared to conventional method of auscultation. Early diagnosis of such mild cases may be important as instituting secondary prophylaxis in such cases may reduce the burden of the disease. However, several concerns remain about the significance and natural history of these minor valvular changes detected by echocardiography. Whether secondary prophylaxis will reverse these abnormalities is also unclear. Long term follow up studies are required to answer some of these concerns.

100: Setia P, Gupta A, Aggrawal A. Can a Child Above 12 years Give Consent for Routine, Elective Surgery? Yes, Says the Indian Penal Code. *Indian J Pediatr.* 2014 Sep;81(9):950. doi: 10.1007/s12098-013-1258-6. Epub 2013 Nov 5. PubMed PMID: 24186701.

101: Shabir I, Marumudi E, Kumar R, Joseph AA, Khurana ML, Mehta M, Chandra TS, Ammini AC. 5 α -Reductase Type 2 Deficiency - Response to Dihydrotestosterone Gel: Correspondence. *Indian J Pediatr.* 2014 Sep;81(9):984. doi: 10.1007/s12098-013-1215-4. Epub 2013 Sep 20. PubMed PMID: 24052182.

102: Sharawat SK, Bakhshi R, Vishnubhatla S, Bakhshi S. High receptor tyrosine kinase (FLT3, KIT) transcript versus anti-apoptotic (BCL2) transcript ratio independently predicts inferior outcome in pediatric acute myeloid leukemia. *Blood Cells Mol Dis.* 2014 Sep 9. pii: S1079-9796(14)00098-9. doi: 10.1016/j.bcmd.2014.07.019. [Epub ahead of print] PubMed PMID: 25216797.

OBJECTIVE: In acute myeloid leukemia (AML), simultaneous expression of proliferative (FLT3, KIT) and anti-apoptotic genes (BCL2) is unknown. The aim of the study was to prospectively evaluate proliferative and anti-apoptotic gene transcripts, their interrelationship and impact on the outcome in pediatric AML patients.

METHODS: We assessed proliferative and anti-apoptotic gene transcripts by Q-polymerase chain reaction (TaqMan probe) in 64 consecutive pediatric AML patients. Survival data was analyzed by Kaplan-Meier curves followed by log rank test to compare statistical significance between groups. Stepwise multivariable Cox regression method was used to evaluate independent prognostic factors.

RESULTS: In univariate analysis, transcript ratio of FLT3/BCL2 and FLT3+KIT/BCL2 significantly predicted event free survival (EFS) (<0.01 and <0.01 respectively) and overall survival (OS) (<0.01 and <0.01 respectively). In stepwise Cox-regression model, high white blood cell count and high FLT3+KIT/BCL2 ratio predicted EFS (HR: 2.2 and 2.3); high hemoglobin and high FLT3+KIT/BCL2 ratio predicted OS (HR: 0.45 and 3.85). Prognostic index (PI) was calculated using the hazard coefficient of independent prognostic factors; at 57.3 months, predicted OS of patients with the highest PI of 1.8 was 8% versus 73% for the lowest PI of -0.3. The mean PI of patients who died was 1.8 \pm 0.72 versus 0.54 \pm 0.70 for those who are alive, P=0.004.

CONCLUSIONS: This first study showed that individual expression of proliferative and anti-apoptotic transcripts is not as important in AML patients, rather their interrelationship and relative level probably determines the outcome.

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103: Sharma A, Madan R, Kumar R, Sagar P, Kamal VK, Thakar A, Sharma A, Mohanti BK. Compliance to therapy-elderly head and neck carcinoma patients. *Can Geriatr J.* 2014 Sep 5;17(3):83-7. doi: 10.5770/cgj.17.101. eCollection 2014 Sep. PubMed PMID: 25232366; PubMed Central PMCID: PMC4164680.

BACKGROUND: Treatment compliance of elderly patients to intensive multi-modality cancer therapy can be challenging and has not been adequately addressed in

developing countries. The present study evaluated compliance of elderly head and neck carcinomas patients to cancer-directed therapy.

METHODS: Forty-seven elderly HNSCC patients were evaluated in the present study. Patients were assessed as per stage and site of disease, general condition, performance status, and any pre-existing co-morbidities. Compliance was defined as patients who were able to complete cancer therapy as intended at primary clinic. Non-compliance to therapy was stratified as early, mid- and late-course non-compliance. Statistical analysis was done using STATA 9.1 software, chi-square/Fischer's exact test to see strength of association between two categorical variables that could possibly affect compliance in elderly patients.

RESULTS: Sixty-eight per cent of elderly patients were subjected to radical treatment, majority (42/47) presented in loco-regionally advanced stage (III-IV), most common site of malignancy was oropharynx (21/47). Sixty-two per cent of elderly HNSCC patients were compliance to cancer therapy. Median overall treatment time for patients subjected to radical radiation therapy was 52 (range 47-99) days, and for radical surgery and adjuvant radiotherapy was 109 (95-190) days. Compliance to therapy for elderly HNSCC patients was not significantly associated with advanced stage, poor general condition, intent of treatment or presence of co-morbidity. As regards to non-compliance, majority (14/18) of elderly patients showed mid-course treatment non-compliance.

CONCLUSIONS: Nearly two-thirds of elderly head and neck carcinoma patients were compliant to cancer-directed therapy.

104: Sharma DN, Joshi NP, Gandhi AK, Haresh KP, Gupta S, Julka PK, Rath GK. High-dose-rate interstitial brachytherapy for T1-T2-stage penile carcinoma: short-term results. *Brachytherapy*. 2014 Sep-Oct;13(5):481-7. doi: 10.1016/j.brachy.2014.06.003. Epub 2014 Jul 16. PubMed PMID: 25037912.

PURPOSE: Interstitial brachytherapy (IBT) is a preferred treatment option over partial penectomy in selected patients with T1-T2-stage penile carcinoma because of its organ preservation ability. Literature is mostly based on the use of low-dose-rate IBT, and experience with high-dose-rate (HDR) IBT is extremely limited. We studied the role of HDR-IBT alone in patients with T1-T2-stage penile carcinoma.

METHODS AND MATERIALS: Between April 2010 and July 2013, 14 patients with T1-T2-stage penile carcinoma were treated with HDR-IBT at our center. Size of the primary lesion ranged from 1.5 to 4.0cm. A two-to-four-plane free-hand implant was performed using plastic catheters. The prescribed dose of HDR-IBT was 42-51Gy in 14-17 fractions using twice-a-day fractionation schedule. Patients were followed up regularly for assessment of local control, survival, toxicity, and sexual function.

RESULTS: At a median followup of 22 months, 2 patients developed recurrent disease at locoregional site. The 3-year overall survival was 83% with penis preservation rate of 93%. All patients developed acute Grade III skin toxicity that healed during 6-8-weeks time. Urethral stenosis and soft tissue necrosis was not seen in any of the patients. A total of 4 patients experienced mild asymptomatic fibrosis in the implanted area. Around 10 patients had satisfactory sexual function status at the last followup visit.

CONCLUSIONS: Although it was a small sample size, our results have demonstrated excellent local control rate and acceptable toxicity with HDR-IBT in patients with T1-T2-stage penile carcinoma.

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105: Sharma VK, Kakkar A, Lodha R, Suri V, Kabra SK. HIV with Juvenile Dermatomyositis. *Indian J Pediatr*. 2014 Sep;81(9):926-8. doi: 10.1007/s12098-013-1160-2. Epub 2013 Jul 24. PubMed PMID: 23881481.

Dermatomyositis with HIV infection has been very rarely reported. The authors report an 8-y-old boy who presented with skin rashes and edema, muscle weakness and polymicrobial infection along with mild immunosuppression. Diagnosis of dermatomyositis was established by raised enzymes, suggestive MRI and muscle biopsy findings. Child responded to systemic steroids and low dose weekly methotrexate.

106: Singh AK, Kumar R, Shukla AA, Hariprasad G, Chauhan SS, Dey S. Identification and molecular characterization of a novel splice variant of human 5-lipoxygenase gene. *Mol Biol Rep*. 2014 Sep 14. [Epub ahead of print] PubMed PMID: 25218842.

5-Lipoxygenase (5-LO) is one of the members of Lipoxygenase family. It breaks down arachidonic acid to pro-inflammatory compounds like leukotrienes. Leukotriene plays a major role in the inflammatory process. In this study, while cloning full length 5-LO, a novel splice variant of 5-LO (t5-LO) was found to be expressed in HepG2 cell line. The complete ORF of t5-LO is 420 bp long, expressing 139 amino acid long proteins from N-terminal. The splice variant of 5-LO was cloned, expressed, purified in bacterial system and characterized by MS/MS and western blot experiments. The full length 5-LO is 674 amino acids long encoded by 2,025 bp long ORF. RT-PCR and western blot revealed that t5-LO is extensively expressed in HepG2 cell line.

107: Singh D, Darbari A. Retrieval of trapped and broken guide wire with immediate rescue off-pump coronary bypass surgery. *Interact Cardiovasc Thorac Surg*. 2014 Sep;19(3):529-31. doi: 10.1093/icvts/ivul64. Epub 2014 May 28. PubMed PMID: 24871531.

The entrapment, fracture and dislodgement of diagnostic or therapeutic devices within the coronary circulation during a procedure are a rare complication occurring in 0.2-0.8% of cases. Despite technological improvements, this complication is still occurring because coronary angioplasty is often undertaken for complex anatomical situations. The complication of device fracture during the intervention procedure occurs due to entrapment, overcoiling and excessive traction of the guide wire. There has been no agreement as to whether and by which technique the immediate removal of the broken fragment of guide wire should be done. Here, we report a case of anterolateral myocardial infarction who underwent primary percutaneous coronary intervention. During the procedure, the guide wire was entrapped within the left anterior descending coronary artery. Despite many attempts, the wire could not be removed and even became fractured at the femoral insertion site; thus, urgent surgical removal of the wire with vessel grafting was done with a successful outcome. This gives a clear message about the importance of the ready availability of surgical backup and, particularly, the necessity for complex percutaneous interventions.

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108: Singh H, Patel CD, Mishra S, Bhargava B. Stress-Rest Thallium-201 Myocardial Perfusion SPECT Pattern in Patients with Exercise Induced Left Bundle Branch Block. *Nucl Med Mol Imaging*. 2014 Sep;48(3):251-4. doi: 10.1007/s13139-014-0267-3. Epub 2014 Mar 7. PubMed PMID: 25177388; PubMed Central PMCID: PMC4145096.

109: Singh H, Garg S, Sharma R, Venkatesh P, Saxena R, Dada T. Evaluation of the effect of pan retinal photocoagulation on optic nerve head parameters using HRT3. *J Glaucoma*. 2014 Sep;23(7):467-70. doi: 10.1097/IJG.0b013e3182946536. PubMed PMID: 23632402.

PURPOSE: To evaluate the optic disc topography after pan retinal photocoagulation (PRP) in diabetic retinopathy patients using confocal scanning laser ophthalmoscopy (HRT3).

METHODS: Thirty eyes of 30 diabetic patients (non-insulin-dependent diabetes mellitus) underwent PRP for proliferative diabetic retinopathy. Subjects with glaucoma or family history of glaucoma, any coexisting neuroophthalmic disease, uveitis, retinal artery or vein occlusion, corneal opacity or lasered previously were excluded from the study. Optic nerve head (ONH) of these patients were evaluated by confocal scanning laser ophthalmoscopy (HRT3) at baseline, 3, and 6 months after completion of PRP.

RESULTS: There were 23 males and 7 females with a mean age of 51.8 years (36 to 67 y). The mean intraocular pressure was 13.1 ± 2.57 mm Hg at baseline, 13.4 ± 2.6 mm Hg at 3 months, and 13.3 ± 2.2 mm Hg at 6 months ($P=0.6$). The global values of ONH parameters showed no significant change from baseline at 3 months. At 6 months, there was a significant increase in vertical cup:disc ratio ($P=0.021$), cup volume ($P=0.036$), mean cup depth ($P=0.042$), and maximum cup depth ($P=0.05$) as compared with baseline values.

CONCLUSIONS: PRP induces significant changes in the ONH in patients with diabetic retinopathy as measured with HRT3. This is an important consideration in the diagnosis and evaluation of progression in glaucoma patients with diabetic retinopathy who have undergone PRP.

110: Singh N, Kriplani A, Mahey R, Kachhawa G. Management of narrow introitus with Fenton's operation followed by successful pregnancy in a woman with repaired bladder exstrophy. *J Obstet Gynaecol.* 2014 Sep 4:1-2. [Epub ahead of print] PubMed PMID: 25188695.

111: Singh S, Dayal M, Walia R, Arava S, Sharma R, Gupta S. Intralesional radiofrequency ablation for nodular angiolymphoid hyperplasia on forehead: A minimally invasive approach. *Indian J Dermatol Venereol Leprol.* 2014 Sep-Oct;80(5):419-21. doi: 10.4103/0378-6323.140300. PubMed PMID: 25201842.

Angiolymphoid hyperplasia with eosinophilia (ALHE) is an idiopathic acquired condition characterized by erythematous papulo-nodular lesions with a predilection for the head and neck. The lesions are cosmetically disfiguring, resistant to most medical and surgical therapies and tend to recur. We report the novel use of radiofrequency equipment in the management of nodular ALHE on forehead of a 53-year-old man. Intra-lesional radiofrequency ablation was done using a modified 18 gauge intravenous cannula and three sittings over a period of four years yielded cosmetically acceptable results with no recurrence and minimal side effects.

112: Singh S, Rufai SB, Kumar P, Singh J. Reply to "molecular diagnosis of rifampin-monoresistant tuberculosis in Indian patients: problems with a discordance analysis". *J Clin Microbiol.* 2014 Sep;52(9):3504-5. doi: 10.1128/JCM.01731-14. PubMed PMID: 25143419.

Comment on

J Clin Microbiol. 2014 Sep;52(9):3503.

J Clin Microbiol. 2014 Jun;52(6):1846-52.

113: Soon SS, Chia WK, Chan ML, Ho GF, Jian X, Deng YH, Tan CS, Sharma A, Segelov E, Mehta S, Ali R, Toh HC, Wee HL. Cost-effectiveness of aspirin adjuvant therapy in early stage colorectal cancer in older patients. *PLoS One.* 2014 Sep 24;9(9):e107866. doi: 10.1371/journal.pone.0107866. eCollection 2014. PubMed PMID: 25250815; PubMed Central PMCID: PMC4176715.

BACKGROUND & AIMS: Recent observational studies showed that post-operative aspirin use reduces cancer relapse and death in the earliest stages of colorectal cancer. We sought to evaluate the cost-effectiveness of aspirin as an adjuvant

therapy in Stage I and II colorectal cancer patients aged 65 years and older. METHODS: Two five-state Markov models were constructed separately for Stage I and II colorectal cancer using TreeAge Pro 2014. Two hypothetical cohorts of 10,000 individuals at a starting age of 65 years and with colorectal cancer in remission were put through the models separately. Cost-effectiveness of aspirin was evaluated against no treatment (Stage I and II) and capecitabine (Stage II) over a 20-year period from the United States societal perspective. Extensive one-way sensitivity analyses and multivariable Probabilistic Sensitivity Analyses (PSA) were performed.

RESULTS: In the base case analyses, aspirin was cheaper and more effective compared to other comparators in both stages. Sensitivity analyses showed that no treatment and capecitabine (Stage II only) can be cost-effective alternatives if the utility of taking aspirin is below 0.909, aspirin's annual fatal adverse event probability exceeds 0.57%, aspirin's relative risk of disease progression is 0.997 or more, or when capecitabine's relative risk of disease progression is less than 0.228. Probabilistic Sensitivity Analyses (PSA) further showed that aspirin could be cost-effective 50% to 80% of the time when the willingness-to-pay threshold was varied from USD20,000 to USD100,000.

CONCLUSION: Even with a modest treatment benefit, aspirin is likely to be cost-effective in Stage I and II colorectal cancer, thus suggesting a potential unique role in secondary prevention in this group of patients.

114: Talwar S, Meena A, Choudhary SK, Saxena A, Kothari SS, Juneja R, Airan B. Repair of Tetralogy of Fallot in or beyond the Fourth Decade of Life. *Congenit Heart Dis.* 2014 Sep;9(5):424-32. doi: 10.1111/chd.12162. Epub 2014 Jan 22. PubMed PMID: 24447400.

OBJECTIVE: Patients with tetralogy of Fallot (TOF) undergoing surgery in adulthood represent a challenge. We report our experience with such patients in or beyond the fourth decade of life.

DESIGN: Retrospective cohort.

SETTING: Multispeciality tertiary level referral center

PATIENTS: Forty-one (age 30-52 years) with TOF undergoing surgery between January 2002 and March 2013. The hospital records of these patients were analyzed.

INTERVENTIONS: None.

OUTCOME MEASURES: Early and late morbidity and mortality, duration of mechanical ventilatory support, inotropic score, intensive care unit and hospital stay, and correlation with various parameters.

RESULTS: Significant aortopulmonary collaterals were present in 28 patients; these were occluded in cardiac catheterization laboratory prior to repair. Median intraoperative right:left ventricular pressure ratio was 0.40 (range 0.2-0.8). Median inotropic score was 10 (range 5-30). Median duration of mechanical ventilation was 12 hours (range 6-48 hours). Preoperative oxygen saturation was negatively correlated with inotropic score ($P = .001$, $r = -0.485$), mechanical ventilatory support ($P = .003$, $r = -0.460$), intensive care unit stay ($P = .004$, $r = -0.442$), and hospital stay ($P = .028$, $r = -0.353$). Inotropic score was higher in patients with aortopulmonary collaterals ($n = 28$, $P = .03$), high preoperative hematocrit ($n = 29$, $P = .029$), and with right ventricular dysfunction ($n = 6$, $P = .05$). Patients with right ventricular outflow tract gradient >80 mmHg ($n = 19$) had prolonged hospital stay ($P = .002$). Patients undergoing pure transatrial repair ($n = 24$) showed lower inotropic score ($P = .045$), less intensive care unit ($P = .04$), and hospital stay ($P = .031$). There were two early and two late deaths (one from trauma and one from unknown etiology). Median follow-up was 42 months. Thirty-one patients were in New York Heart Association class II and six were in class III.

CONCLUSION: Repair of TOF in and beyond the fourth decade of life is feasible with acceptable results. Patients with high hematocrit, lower oxygen saturation, right ventricular dysfunction, aortopulmonary collaterals, and high preoperative right ventricular outflow tract gradients have a prolonged postoperative course.

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115: Tiwari LK, Singhi S, Jayashree M, Baranwal AK, Bansal A. Hypoalbuminemia in critically sick children. *Indian J Crit Care Med.* 2014 Sep;18(9):565-9. doi: 10.4103/0972-5229.140143. PubMed PMID: 25249740; PubMed Central PMCID: PMC4166871.

CONTEXT: There is a paucity of data evaluating serum albumin levels and outcome of critically ill-children admitted to intensive care unit (ICU).

AIMS: The aim was to study frequency of hypoalbuminemia and examine association between hypoalbuminemia and outcome in critically ill-children.

SETTINGS AND DESIGN: Retrospective review of medical records of 435 patients admitted to 12 bedded pediatric ICU (PICU).

MATERIALS AND METHODS: Patients with hypoalbuminemia on admission or any time during PICU stay were compared with normoalbuminemic patients for demographic and clinical profile. Effect of albumin infusion was also examined. Odds ratio and 95% confidence interval were calculated using SPSS 16.

RESULTS: Hypoalbuminemia was present on admission in 21% (92 of 435) patients that increased to 34% at the end of 1(st) week and to 37% (164 of 435) during rest of the stay in PICU. Hypoalbuminemic patients had higher Pediatric Risk of Mortality scores (12.9 vs. 7.5, $P < 0.001$) and prolonged PICU stay (13.8 vs. 6.7 days, $P < 0.001$); higher likelihood of respiratory failure requiring mechanical ventilaton (84.8% vs. 28.8%, $P < 0.001$), prolonged ventilatory support, progression to multiorgan dysfunction syndrome (87.8% vs. 16.2%) and risk of mortality (25.6% vs. 17.7%). Though, the survivors among recipients of albumin infusion had significantly higher increase in serum albumin level (0.76 g/dL, standard deviation [SD] 0.54) compared with nonsurvivors (0.46 g/dL, SD 0.44; $P = 0.016$), albumin infusion did not reduce the risk of mortality.

CONCLUSIONS: Hypoalbuminemia is a significant indicator of mortality and morbidity in critically sick children. More studies are needed to define role of albumin infusion in treatment of such patients.

116: Vanathi M, Kashyap S, Khan R, Seth T, Mishra P, Mahapatra M, Tandon R. Ocular surface evaluation in allogenic hematopoietic stem cell transplantation patients. *Eur J Ophthalmol.* 2014 Sep-Oct;24(5):655-66. doi: 10.5301/ejo.5000451. Epub 2014 Mar 7. PubMed PMID: 24604604.

PURPOSE: To evaluate ocular surface of chronic graft versus host disease (GVHD) patients in allogeneic hematopoietic stem cell transplantation (allo-HSCT).

METHODS: Cross-sectional study of allo-HSCT patients. Data recorded included Ocular Surface Disease Index (OSDI) score, fluorescein tear break-up time (FTBUT), Schirmer I test, ocular surface staining, dry eye severity, and conjunctival impression cytology (CIC).

RESULTS: Of 40 allo-HSCT patients (mean age 25.7 ± 11.03 years) studied, dry eye disease was noted in 30%. The OSDI was mild in 16.67%, moderate in 45.83%, and severe in 20.83% ocular GVHD (oGVHD) eyes; mild in 94.64%, moderate in 5.36% non-oGVHD eyes ($p < 0.001$). The FTBUT was ≤ 5 seconds in 45.83%, > 5 seconds in 54.17% of eyes with chronic oGVHD. Schirmer I test score was ≤ 5 mm in 58.33% of eyes with oGVHD. Conjunctival staining score was < 3 in 25%, ≥ 3 in 75% of oGVHD eyes. Corneal staining score of < 3 in 79.17%, ≥ 3 in 20.83% was seen in oGVHD eyes. Chronic oGVHD was seen in 24 eyes, with dry eye severity of level 3 in 17.5%, level 2 in 2.5%, level 1 in 10%. The CIC was abnormal in 75% with altered morphology seen in 22 eyes with oGVHD (91.7%) and 38 eyes without oGVHD (67.9%) ($p = 0.024$).

CONCLUSIONS: Significant ocular surface changes occur due to chronic oGVHD in allo-HSCT patients. The OSDI score, corneal involvement, and Schirmer I test are indicative of ocular morbidity in post allo-HSCT eyes. Conjunctival impression cytology abnormality is also seen in eyes without oGVHD.