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1: Agarwal R, Virmani D, Jaipal M, Gupta S, Sankar MJ, Bhatia S, Agarwal A, Devgan V, Gupta N, Deorari AK, Paul VK; Investigators of LBW Micronutrient Study Group. Iron stores in low and normal birth weight infants at birth and in early infancy. *Indian J Pediatr.* 2014 Mar;81(3):279-82. doi: 10.1007/s12098-013-1176-7. Epub 2013 Aug 27. PubMed PMID: 23979924.

Serum ferritin levels of low birth weight (LBW; BW<2,500 g) and normal birth weight (NBW; BW≥2,500 g) infants were evaluated at birth and at 3 mo using electrochemiluminescence immunoassay. At birth, levels were 318.6 (31.0-829.5) ng/mL in LBW (n=217) and 366.2 (122.4-858.5) ng/mL in NBW infants (n=116; p<0.01), with 1.4 % of LBW and none of the NBW infants having levels <12 ng/mL (p=0.20). At follow up, levels were 66.9 (4.5-567.7) ng/mL in LBW (n=126) and 126.2 (6.8-553.7) ng/mL in NBW infants (n=76; p=0.27), with 11.9 % of LBW and 11.8 % of NBW infants having levels <12 ng/mL (p=0.80).

2: Ahmed S, Pahwa S, Das CJ, Mir FA, Nisar S, Jehangir M, Parveen S, Rashid A, Ganie MA. Comparative evaluation of sonographic ovarian morphology of Indian women with polycystic ovary syndrome versus those of normal women. *Indian J Endocrinol Metab.* 2014 Mar;18(2):180-4. doi: 10.4103/2230-8210.129108. PubMed PMID: 24741513; PubMed Central PMCID: PMC3987267.

OBJECTIVES: To study ovarian morphology by ultrasound in women with or without polycystic ovary syndrome (PCOS) and to establish cut-off values of these parameters in Indian women with PCOS.

MATERIALS AND METHODS: A total of 119 consecutive women diagnosed PCOS and 77 apparently healthy women were enrolled. Transabdominal ultrasound examination was carried out to assess ovarian volume, stromal echogenecity, follicle number and size. Cut-off values of the above ovarian parameters with sensitivity, specificity, positive predictive value (PPV) and negative predictive values (NPV) were calculated.

RESULTS: Sensitivity of 79.49% and specificity of 90.67% was achieved with a cut-off of 8 mL as ovarian volume. A cut-off value of 9 follicles to distinguish between PCOS and control women yielded a sensitivity of 82.35% and specificity of 92.0% while as a follicular size of 5 mm yielded sensitivity and specificity of 74.67% and 78.15% respectively. With all the three parameters sensitivity was 87.39% and specificity 87.84% with 92.04% PPV and 81.25% NPV.

CONCLUSION: Using two or three sonographic criteria in combination improves sensitivity and helps diagnose additional patients with PCOS. Our results are at variance with the established cut-off values highlighting the fact that American Society for Reproductive Medicine consensus cut-off values are not reproducible in Indian context.

3: Andrabi R, Makhdoomi MA, Kumar R, Bala M, Parray H, Gupta A, Kotnala A, Thirumurthy V, Luthra K. Highly Efficient Neutralization by Plasma Antibodies from Human Immunodeficiency Virus Type-1 Infected Individuals on Antiretroviral Drug Therapy. *J Clin Immunol.* 2014 Mar 29. [Epub ahead of print] PubMed PMID: 24682667.

Little is known about the neutralizing antibodies induced in HIV-1 patients on antiretroviral treatment, which constitute an interesting group of individuals with improved B cell profile. Plasma samples from 34 HIV-1 seropositive antiretroviral drug treated (ART) patients were tested for neutralization against a panel of 14 subtype-A, B and C tier 1 and tier 2 viruses in TZM-bl assay. Of the 34 plasma samples, remarkably all the plasma samples were able to neutralize

at least one virus while 32 (94 %) were found to neutralize ≥ 50 % viruses tested. In terms of overall neutralization frequency, approximately 86 %, 68 % and 17 % of the virus/plasma combinations showed 50 % neutralizing activity at $1 > 60$, $1 \geq 200$ and $1 \geq 2000$ dilutions respectively. The improvement in neutralizing activity was shown to be associated with ART in two follow up patients. The neutralization of viruses by two representative plasma samples, AIIMS221 and AIIMS265, was exclusively mediated by immunoglobulin G fractions independent of ART drugs and IgG retained cross-reactive binding to recombinant gp120 proteins. We observed a positive trend of neutralization with duration of ART ($p=0.06$), however no such correlation was found with clinical and immunological variables like CD4 count ($p=0.35$), viral load ($p=0.09$) and plasma total IgG ($p=0.46$). Our study suggests that the plasma antibodies from ART patients display high neutralizing activity most likely due to an improved B cell function induced by ART despite low antigenic stimulation.

4: Ansari MT, Rastogi S, Khan SA, Yadav C, Rijal L. Giant schwannoma of the first metatarsal: a rare entity. *J Foot Ankle Surg.* 2014 May-Jun;53(3):335-9. doi: 10.1053/j.jfas.2014.01.014. Epub 2014 Mar 20. PubMed PMID: 24656765.

Schwannomas of osseous origin are rare, and schwannomas of the short tubular bones are even rarer. These benign-looking tumors are difficult to diagnose using imaging alone. However, histopathologic evaluation of a biopsy specimen can establish the diagnosis by identifying Antoni type A and B zones. Curettage and bone grafting will probably be adequate for treatment because malignant changes are unlikely. Large lesions can require en bloc excision and reconstruction. We describe what appears to be only the second case of a schwannoma in the first metatarsal of the foot in a 48-year-old woman. The lesion was poorly contained, with obvious breaks in the cortical shell. The diagnosis was confirmed by pathologic analysis. The lesion was successfully treated with en bloc resection and reconstruction with a nonvascularized fibular graft.

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5: Banerjee J, Chandra SP, Kurwale N, Tripathi M. Epileptogenic networks and drug-resistant epilepsy: Present and future perspectives of epilepsy research-Utility for the epileptologist and the epilepsy surgeon. *Ann Indian Acad Neurol.* 2014 Mar;17(Suppl 1):S134-40. doi: 10.4103/0972-2327.128688. PubMed PMID: 24791082.

A multidisciplinary approach is required to understand the complex intricacies of drug-resistant epilepsy (DRE). A challenge that neurosurgeons across the world face is accurate localization of epileptogenic zone. A significant number of patients who have undergone resective brain surgery for epilepsy still continue to have seizures. The reason behind this therapy resistance still eludes us. Thus to develop a cure for the difficult to treat epilepsy, we need to comprehensively study epileptogenesis. Till date, most of the studies on DRE is focused on undermining the abnormal functioning of receptors involved in synaptic transmission and reduced levels of antiepileptic drugs around these targets. But recent advances in imaging and electrophysiological techniques have suggested the role epileptogenic networks in the process of epileptogenesis. According to this hypothesis, the local neurons recruit distant neurons through complex oscillatory circuits, which further recruit more distant neurons, thereby generating a hypersynchronous neuronal activity. The epileptogenic networks may be confined to the lesion or could propagate to distant focus. The success of surgery depends on the precision by which the epileptogenic network is determined while planning a surgical intervention. Here, we summarize various modalities of

electrophysiological and imaging techniques to determine the functionally active epileptogenic networks. We also review evidence pertaining to the proposed role of epileptogenic network in abnormal synaptic transmission which is one of the major causes of epileptiform activity. Elucidation of current concepts in regulation of synaptic transmission by networks will help develop therapies for epilepsy cases that cannot be managed pharmacologically.

6: Bansal VK, Misra MC, Rajan K, Kilambi R, Kumar S, Krishna A, Kumar A, Pandav CS, Subramaniam R, Arora MK, Garg PK. Single-stage laparoscopic common bile duct exploration and cholecystectomy versus two-stage endoscopic stone extraction followed by laparoscopic cholecystectomy for patients with concomitant gallbladder stones and common bile duct stones: a randomized controlled trial. *Surg Endosc.* 2014 Mar;28(3):875-85. doi: 10.1007/s00464-013-3237-4. Epub 2013 Oct 26. PubMed PMID: 24162138.

BACKGROUND: The ideal method for managing concomitant gallbladder stones and common bile duct (CBD) stones is debatable. The currently preferred method is two-stage endoscopic stone extraction followed by laparoscopic cholecystectomy (LC). This prospective randomized trial compared the success and cost effectiveness of single- and two-stage management of patients with concomitant gallbladder and CBD stones.

METHODS: Consecutive patients with concomitant gallbladder and CBD stones were randomized to either single-stage laparoscopic CBD exploration and cholecystectomy (group 1) or endoscopic retrograde cholangiopancreatography (ERCP) for endoscopic extraction of CBD stones followed by LC (group 2). Success was defined as complete clearance of CBD and cholecystectomy by the intended method. Cost effectiveness was measured using the incremental cost-effectiveness ratio. Intention-to-treat analysis was performed to compare outcomes.

RESULTS: From February 2009 to October 2012, 168 patients were randomized: 84 to the single-stage procedure (group 1) and 84 to the two-stage procedure (group 2). Both groups were matched with regard to demographic and clinical parameters. The success rates of laparoscopic CBD exploration and ERCP for clearance of CBD were similar (91.7 vs. 88.1 %). The overall success rate also was comparable: 88.1 % in group 1 and 79.8 % in group 2 ($p = 0.20$). Direct choledochotomy was performed in 83 of the 84 patients. The mean operative time was significantly longer in group 1 (135.7 ± 36.6 vs. 72.4 ± 27.6 min; $p \leq 0.001$), but the overall hospital stay was significantly shorter (4.6 ± 2.4 vs. 5.3 ± 6.2 days; $p = 0.03$). Group 2 had a significantly greater number of procedures per patient ($p < 0.001$) and a higher cost ($p = 0.002$). The two groups did not differ significantly in terms of postoperative wound infection rates or major complications.

CONCLUSIONS: Single- and two-stage management for uncomplicated concomitant gallbladder and CBD stones had similar success and complication rates, but the single-stage strategy was better in terms of shorter hospital stay, need for fewer procedures, and cost effectiveness.

7: Behera C, Rautji R, Sikary AK, Kumar R, Vidua RK, Millo T, Gupta SK. Triple hanging in filicide-suicide: An unusual case report. *Med Sci Law.* 2014 Mar 18. [Epub ahead of print] PubMed PMID: 24644221.

Filicide-suicide is a special category of homicide-suicide event where the victim(s) are children and the perpetrator is one of the parents or both. It is not extensively documented or adequately defined in literature. In developed countries, shooting is a common method of homicide and suicide. Uses of knives, blunt objects, strangulation, poisoning and drowning are other methods frequently employed by the perpetrator. Homicide by hanging in filicide-suicide is rarely

reported in forensic literature. We present a rare case of filicide-suicide, where the mother killed both her children by hanging them one by one from a ceiling fan in the same room and later committed suicide by hanging in another room.

8: Behera C, Karthik K, Singh H, Deepak P, Jhamad AR, Bhardwaj DN. Suicide pact by drowning with bound wrists: a case of medico-legal importance. *Med Leg J.* 2014 Mar;82(1):29-31. doi: 10.1177/0025817213508676. PubMed PMID: 24619843.

Suicide pacts are uncommon and mainly committed by male-female pairs in a consortial relationship. The victims frequently choose methods such as hanging, poisoning, using a firearm, etc; however, a case of a suicide pact by drowning is rare in forensic literature. We report a case where a male and a female, both young adults, in a relationship of adopted "brother of convenience" were found drowned in a river. The victims were bound together at their wrists which helped with our conclusion this was a suicide pact. The medico-legal importance of wrist binding in drowning cases is also discussed in this article.

9: Bhattacharjee S, Layek A, Maitra S, Sen S, Pal S, Gozi NK. Perioperative Glycemic Status of Adult Traumatic Brain Injury Patients Undergoing Craniotomy: A Prospective Observational Study. *J Neurosurg Anesthesiol.* 2014 Mar 13. [Epub ahead of print] PubMed PMID: 24633214.

BACKGROUND:: Patients of traumatic brain injury (TBI) may have hyperglycemia and when they undergo craniotomy, hyperglycemia may be exacerbated and worsen outcome. However, epidemiology of perioperative hyperglycemia in these patients is unknown. The epidemiological study has been undertaken to address the correlation between intraoperative blood glucose variability in nondiabetic adult TBI patients undergoing craniotomy with the severity and type of brain trauma and patients' demographic variables.

METHODS:: A total of 200 adult nondiabetic patients undergoing emergency craniotomy for TBI were recruited in this prospective single-group observational study. Baseline capillary blood glucose (CBG) measurement was performed immediately before induction of anesthesia and then at half hourly interval until the end of surgery and 1 hour after the end of surgery.

RESULTS:: Incidence of at least 1 episode of intraoperative hyperglycemia (CBG \geq 180 mg/dL) is 20% in patients with TBI during emergency craniotomy. Independent predictors of intraoperative hyperglycemia are severe head injury (Glasgow-Coma score [GCS] <9) and acute subdural hemorrhage. Baseline CBG also correlates with subsequent intraoperative and postoperative CBG.

CONCLUSIONS:: Hyperglycemia is common during emergency craniotomy in TBI patients. We recommend routine monitoring of blood glucose in the intraoperative and postoperative period at least in severe head injury patients.

10: Bhutia O, Kumar L, Jose A, Roychoudhury A, Trikha A. Evaluation of facial nerve following open reduction and internal fixation of subcondylar fracture through retromandibular transparotid approach. *Br J Oral Maxillofac Surg.* 2014 Mar;52(3):236-40. doi: 10.1016/j.bjoms.2013.12.002. Epub 2013 Dec 23. PubMed PMID: 24370443.

The objective of this study was to evaluate any damage to the facial nerve after a retromandibular transparotid approach for open reduction and internal fixation (ORIF) of a subcondylar fracture. We studied 38 patients with 44 subcondylar fractures (3 bilateral and 38 unilateral) treated by ORIF through a retromandibular transparotid approach. All patients were followed up for 6

months. Postoperative function of the facial nerve was evaluated within 24h of operation, and at 1, 3, and 12 weeks, and 6 months. Variables including type of fracture, degree of mouth opening, postoperative occlusion, lateral excursion of the mandible, and aesthetic outcome were also monitored. Nine of the 44 fractures resulted in transient facial nerve palsy (20%). Branches of the facial nerve that were involved were the buccal (n=7), marginal mandibular (n=2), and zygomatic (n=1). In the group with lateral displacement, 2/15 showed signs of weakness, whereas when the fracture was medially displaced or dislocated 7/23 showed signs of weakness. Of the 9 sites affected, 7 had resolved within 3 months, and the remaining 2 resolved within 6 months. The mean (range) time to recovery of function was 12 weeks (3-6 months). There was no case of permanent nerve palsy. The retromandibular transparotid approach to ORIF does not permanently damage the branches of the facial nerve. Temporary palsy, though common, resolves in 3-6 months. Postoperative occlusion, mouth opening, and lateral excursion of the mandible were within the reference ranges. We had no infections, or fractured plates, or hypertrophic or keloid scars.

11: Biswas A, Goyal S, Jain A, Suri V, Mathur S, Julka PK, Rath GK. Primary amelanotic melanoma of the breast: combating a rare cancer. *Breast Cancer*. 2014 Mar;21(2):236-40. doi: 10.1007/s12282-010-0231-8. Epub 2010 Oct 27. PubMed PMID: 20978954.

BACKGROUND: Malignant melanoma is the foremost cause of metastasis to the breast from extramammary solid neoplasm. However primary melanoma of the breast is a distinct rarity. Primary melanoma involves the skin and less commonly the glandular parenchyma of the breast.

METHOD: We herein describe a case of primary amelanotic melanoma of the breast parenchyma in a 32-year-old female managed with a combination of surgery, adjuvant radiotherapy and immunotherapy.

CONCLUSION: This case report aims to increase awareness of unusual neoplasms of the breast which might require a different surgical and adjuvant therapeutic approach.

12: Bodicoat DH, Gray LJ, Henson J, Webb D, Guru A, Misra A, Gupta R, Vikram N, Sattar N, Davies MJ, Khunti K. Body mass index and waist circumference cut-points in multi-ethnic populations from the UK and India: the ADDITION-Leicester, Jaipur heart watch and New Delhi cross-sectional studies. *PLoS One*. 2014 Mar 5;9(3):e90813. doi: 10.1371/journal.pone.0090813. eCollection 2014. PubMed PMID: 24599391; PubMed Central PMCID: PMC3944886.

AIMS: To derive cut-points for body mass index (BMI) and waist circumference (WC) for minority ethnic groups that are risk equivalent based on endogenous glucose levels to cut-points for white Europeans (BMI 30 kg/m²; WC men 102 cm; WC women 88 cm).

MATERIALS AND METHODS: Cross-sectional data from participants aged 40-75 years: 4,672 white and 1,348 migrant South Asian participants from ADDITION-Leicester (UK) and 985 indigenous South Asians from Jaipur Heart Watch/New Delhi studies (India). Cut-points were derived using fractional polynomial models with fasting and 2-hour glucose as outcomes, and ethnicity, objectively-measured BMI/WC, their interaction and age as covariates.

RESULTS: Based on fasting glucose, obesity cut-points were 25 kg/m² (95% Confidence Interval: 24, 26) for migrant South Asian, and 18 kg/m² (16, 20) for indigenous South Asian populations. For men, WC cut-points were 90 cm (85, 95) for migrant South Asian, and 87 cm (82, 91) for indigenous South Asian populations. For women, WC cut-points were 77 cm (71, 82) for migrant South

Asian, and 54 cm (20, 63) for indigenous South Asian populations. Cut-points based on 2-hour glucose were lower than these.

CONCLUSIONS: These findings strengthen evidence that health interventions are required at a lower BMI and WC for South Asian individuals. Based on our data and the existing literature, we suggest an obesity threshold of 25 kg/m² for South Asian individuals, and a very high WC threshold of 90 cm for South Asian men and 77 cm for South Asian women. Further work is required to determine whether lower cut-points are required for indigenous, than migrant, South Asians.

13: Bothra M, Selvaperumal P, Kabra M, Joshi P. Disseminated cryptococcosis. *Indian Pediatr.* 2014 Mar 8;51(3):225-6. PubMed PMID: 24736916.

BACKGROUND: Fungal infections, especially in immunocompetent children are uncommon causes of fever of unknown origin.

CASE CHARACTERISTICS: A 5-year-old boy with prolonged fever and no evidence of immunosuppression.

OBSERVATION: Ultrasound-guided retroperitoneal lymph node biopsy showed granulomas and intracytoplasmic fungal yeasts; staining characteristics were suggestive of cryptococci. Clinical and radiological improvement was seen after treatment with amphoterecin-B.

OUTCOME: Disseminated fungal infection should be suspected as a cause of pyrexia of unknown origin after ruling out the commoner causes. Biopsy from enlarged lymph node or organomegaly may yield the diagnosis when non-invasive tests fail.

14: Broor S, Dawood FS, Pandey BG, Saha S, Gupta V, Krishnan A, Rai S, Singh P, Erdman D, Lal RB. Rates of respiratory virus-associated hospitalization in children aged <5 years in rural northern India. *J Infect.* 2014 Mar;68(3):281-9. doi: 10.1016/j.jinf.2013.11.005. Epub 2013 Nov 21. PubMed PMID: 24269675.

OBJECTIVES: Though respiratory viruses are thought to cause substantial morbidity globally in children aged <5 years, the incidence of severe respiratory virus infections in children is unknown in India where 20% of the world's children live.

METHODS: During August 2009–July 2011, prospective population-based surveillance was conducted for hospitalizations of children aged <5 years in a rural community in Haryana State. Clinical data and respiratory specimens were collected. Swabs were tested by RT-PCR for influenza and parainfluenza viruses, respiratory syncytial virus (RSV), human metapneumovirus, coronaviruses, and adenovirus. Average annual hospitalization incidence was calculated using census data and adjusted for hospitalizations reported to occur at non-study hospitals according to a community healthcare utilization survey.

RESULTS: Of 245 hospitalized children, respiratory viruses were detected among 98 (40%), of whom 92 (94%) had fever or respiratory symptoms. RSV accounted for the highest virus-associated hospitalization incidence (34.6/10,000, 95% CI 26.3–44.7) and 20% of hospitalizations. There were 11.8/10,000 (95% CI 7.9–18.4) influenza-associated hospitalizations (7% of hospitalizations). RSV and influenza virus detection peaked in winter (November–February) and rainy seasons (July), respectively.

CONCLUSION: Respiratory viruses were associated with a substantial proportion of hospitalizations among young children in a rural Indian community. Public health research and prevention in India should consider targeting RSV and influenza in young children.

15: Chakraborti S, Nag TC, Das D, Sanyal Chatterjee T, De SK. Cytokeratin localization in toe pads of the anuran amphibian *Philautus annandalii* (Boulenger, 1906). *Tissue Cell*. 2014 Mar 18. pii: S0040-8166(14)00015-9. doi: 10.1016/j.tice.2014.03.001. [Epub ahead of print] PubMed PMID: 24698093.

We have examined cytokeratin distribution and their nature in toe pads of the Himalayan tree-frog *Philautus annandalii*. Toe pads are expanded tips of digits and show modifications of their ventral epidermis for adhesion. The toe pad epidermal cells, being organized into 3-4 rows, possess keratin bundles, especially in surface nanostructures that are involved in adhesion. Immunohistochemical localization using a pan-cytokeratin antibody revealed that cytokeratin immunoreactivity is the strongest in the mid- to basal cell rows of the epidermis, which parallels our previous ultrastructural observation of dense keratin bundles present in this part of the epidermis. The remainder of the epidermis (i.e., the superficial cell layer) showed little immunoreactivity. Immunoblot analysis revealed that toe-pads possessed keratins prominently in the molecular mass of 50kDa. Possible presence of keratin 5 in toe pad epidermis has been correlated with its usual distribution pattern in mammalian epidermis.

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16: Chandrasekaran A, Thukral A, Deorari AK. E-Learning in Newborn Health - A Paradigm Shift for Continuing Professional Development for Doctors and Nurses. *Indian J Pediatr*. 2014 Mar 7. [Epub ahead of print] PubMed PMID: 24599789.

Neonatal mortality can be largely prevented by wide-scale coverage of components of essential newborn care and management of sick neonates in district-level healthcare facilities. A vital step in this direction is imparting the requisite knowledge and skill among healthcare providers. Medical education programs with their static curricula seldom adapt to the changing needs of neonatal healthcare providers in patient-centered, collaborative and remote delivery contexts. E-learning is emerging as the cutting edge tool towards refinement of knowledge, attitude and practices of physicians. Module-based e-learning courses can be blended with a skill learning contact period in partnering institutions thus saving resources and rapidly covering a wide geographical region with uniform standardized education. In this review, the authors discuss their experience with e-learning aimed at introducing and refining the understanding of sick newborn care among pre-service and in-service doctors who manage neonates.

17: Chopra A, Bakhshi S, Pramanik SK, Pandey RM, Singh S, Gajendra S, Gogia A, Chandramohan J, Sharma A, Kumar L, Seth R, Rai S, Kumar R. Immunophenotypic analysis of T-acute lymphoblastic leukemia. A CD5-based ETP-ALL perspective of non-ETP T-ALL. *Eur J Haematol*. 2014 Mar;92(3):211-8. doi: 10.1111/ejh.12238. Epub 2014 Jan 10. PubMed PMID: 24329989.

T-cell antigens [CD5,CD1a,CD8] define early T-cell precursor acute lymphoblastic leukemia (ETP-ALL). To understand immature T-ALL of which ETP-ALL is part, we used these antigens to subcategorize non-ETP T-ALL for examining expression of myeloid/stem cell antigens (M/S) and clinical features. Using CD5 (+/-) to start categorization, we studied 69 routinely immunophenotyped patients with T-ALL. CD5(-) was a homogenous (CD8,CD1a)(-) M/S(+) ETP-ALL group (n = 9). CD5(+) cases were (CD8,CD1a)(-) pre-T-ALL (n = 22) or (CD8,CD1a)(+) (n = 38) thymic/cortical T-ALL; M/S(+) 20/22 (90.91%) in former and 22/38 (57.89%) in latter (P = 0.007). ETP- and pre-T-ALL together (CD1a(-) ,CD5(-/+) immature T-ALL group) were nearly always M/S(+) (29/31; 93.55%). In multivariate analysis, only ETP-ALL predicted poor overall survival (P = 0.02). We conclude (i) CD5 negativity in T-ALL almost always means ETP-ALL. CD1a and CD8 negativity, as much as CD5, marks immaturity in T-ALL, and the CD5(+/-) /CD1a(-) /CD8(-) immature T-ALL group needs further

study to understand the biology of the T-ALL-myeloid interface. (ii) ETP-ALL patients may be pre-T-ALL if CD2(+) ; CD2(+) , conversely, CD5(-) /CD1a(-) /CD8(-) pre-T ALL patients are ETP-ALL. (iii) Immunophenotypic workup of T-ALL must not omit CD1a, CD5, CD8 and CD2, and positivity of antigens should preferably be defined as recommended for ETP-ALL, so that this entity can be better evaluated in future studies of immature T-ALL, a group to which ETP-ALL belongs. (iv) ETP-ALL has poor prognosis.

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18: Das M, Tomar N, Sreenivas V, Gupta N, Goswami R. Effect of vitamin D supplementation on cathelicidin, IFN- γ , IL-4 and Th1/Th2 transcription factors in young healthy females. *Eur J Clin Nutr.* 2014 Mar;68(3):338-43. doi: 10.1038/ejcn.2013.268. Epub 2014 Jan 8. PubMed PMID: 24398649.

OBJECTIVES: We assessed the effect of cholecalciferol and calcium supplementation on mRNA expression of cathelicidin (LL-37), Th1 and Th2 cytokines and their transcription factors in the peripheral blood mononuclear cells (PBMCs) in healthy females with vitamin D deficiency (VDD).

SUBJECTS/METHODS: Subjects included 131 females with biochemical VDD randomized to receive (a) oral cholecalciferol (60,000 IU/week for 8 weeks followed by 60,000 IU/fortnight) (b) calcium (elemental calcium 500 mg twice/day) (c), dual supplementation and (d) placebo for 6 months. The mRNA expression of cathelicidin, Th1 (IFN- γ) and Th2 (IL-4 and its antagonist-IL-4 δ 2) cytokines and their transcription factors (T-bet, STAT4, GATA-3, STAT6) were measured in the PBMC by real-time PCR before and after intervention.

RESULTS: Cholecalciferol-supplemented groups showed significant rise of mean serum 25(OH)D (30.6 \pm 7.51 and 28.6 \pm 8.41 ng/ml). The expression of LL-37, IFN- γ , IL-4, IL-4 δ 2 and transcription factors were comparable in the four groups at baseline. Despite significant increase in mean serum 25(OH)D in the cholecalciferol-supplemented groups, their mean mRNA transcripts of LL-37, IFN- γ , IL-4, transcription factors and their IFN- γ /IL-4 and T-bet/GATA-3 ratios were similar to that of calcium and placebo groups.

CONCLUSIONS: Six months of cholecalciferol/calcium supplementation in young females with VDD do not lead to significant alteration in mRNA expression of LL-37, Th1/Th2 cytokines and their transcription factors.

19: Dash D, Tripathi M. The extratemporal lobe epilepsies in the epilepsy monitoring unit. *Ann Indian Acad Neurol.* 2014 Mar;17(Suppl 1):S50-5. doi: 10.4103/0972-2327.128655. PubMed PMID: 24791090.

Extratemporal lobe epilepsies (ETLE) are characterized by the epileptogenic foci outside the temporal lobe. They have a wide spectrum of semiological presentation depending upon the site of origin. They can arise from frontal, parietal, occipital lobes and from hypothalamic hamartoma. We discuss in this review the semiology of different types of ETLE encountered in the epilepsy monitoring unit.

20: Dash SK, Behera BK, Patro S. Accuracy in certification of cause of death in a tertiary care hospital - A retrospective analysis. *J Forensic Leg Med.* 2014 May;24:33-6. doi: 10.1016/j.jflm.2014.03.006. Epub 2014 Mar 31. PubMed PMID: 24794848.

Every physician is duty bound to issue a "Cause of Death" certificate in the unfortunate event death of his/her patient. Incomplete and inaccurate entry in these certificates poses difficulty in obtaining reliable information pertaining to causes of mortality, leads to faulty public health surveillance, and causes hindrance in research. This study intends to evaluate the completeness and

accuracy of Medical Certification of Cause of Death in our Institute and to formulate strategy to improve the quality of reporting of cause of death. During the period from January 2012 to December 2012, a total of 151 certificates of cause of death were issued by the faculty members of various departments. Maximum number of death certificates were issued for patients in the extremes of the age <10 years (n = 42, 27.82%) and in >60 years (n = 46, 30.46%). The various inadequacies observed by us are as follows: 40 (26.49%) cases had inaccurate cause of death, interval between onset and terminal event was missing in 94 (62.25%) cases, in 68 (45.03%) cases the seal with registration number of the physician was not available on the certificate, incomplete antecedent & underlying cause of death was found in 35 (23.18%) & 84 (55.63%) cases, in 66 (43.71%) cases there was use of abbreviations and the handwriting was illegible in 79 (52.32%) cases.

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21: Dawman L, Kabra SK. Kawasaki disease: unusual clinical manifestations. *Indian J Pediatr.* 2014 Apr;81(4):325-7. doi: 10.1007/s12098-014-1397-4. Epub 2014 Mar 16. PubMed PMID: 24633902.

22: Desai S, Shukla G, Goyal V, Srivastava A, Srivastava MV, Tripathi M, Singh M, Shivanand K, Sagar R, Gupta A, Saratchandra P, Garg A, Bal CS, Behari M. Changes in psychiatric comorbidity during early postsurgical period in patients operated for medically refractory epilepsy--a MINI-based follow-up study. *Epilepsy Behav.* 2014 Mar;32:29-33. doi: 10.1016/j.yebeh.2013.11.025. Epub 2014 Jan 24. PubMed PMID: 24463306.

PURPOSE: The purpose of this study was to assess axis-I DSM-IV psychiatric disorders in patients at baseline and 3 months after surgery for medically refractory temporal lobe epilepsy.

METHOD: The Mini International Neuropsychiatric Interview (MINI) and Quality of Life in Epilepsy Inventory-10 (QOLIE-10) were evaluated before and 3 months after surgery in 50 consecutive patients (21 females, 29 males) with medically refractory temporal lobe epilepsy (persistent seizures >2/month, despite treatment with ≥2 appropriate drugs in adequate doses for ≥2 years) who underwent surgery [anterior temporal lobectomy with amygdalo-hippocampectomy (for mesial temporal sclerosis in 40), electrocorticography-guided lesionectomy (for other lesions in 10)].

RESULTS: Twenty-six patients (52%) had an axis-I psychiatric disorder [26% depressive disorder, 28% anxiety disorder] at baseline, while 30 (60%) patients had an axis-I psychiatric disorder [28% depressive disorder, 28% anxiety disorder] at 3 months after surgery. Twenty percent developed a new psychiatric disorder, while 12% showed improvement postsurgery. Mean QOLIE-10 scores improved from 23.78 to 17.80 [24 (48%) patients showed ≥5-point improvement]. Thirty-four (68%) patients had no seizure, 6 (12%) had non-disabling seizures, while 2 (4%) had disabling seizures after surgery. High frequency of seizures prior to surgery (p<0.038) and seizure occurrence after surgery (p<0.055) predicted the presence of psychiatric disorders after surgery. No clinical characteristic could predict development of new psychiatric disorder after surgery.

CONCLUSION: Psychiatric dysfunction in the early postsurgery period is seen in nearly half of patients undergoing surgery for temporal lobe epilepsy, is mild in nature, and does not adversely affect quality of life but may cause significant clinical problems when it arises de novo postsurgery.

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Thousands of chemicals are being used recently in our new high tech foods like ready to eat Japanese, Chinese, packaged and tinned foods. Most food additives act as either preservatives or flavor enhancers like monosodium glutamate (MSG), a sodium salt of glutamic acid. The present study investigated the effect of intraperitoneally administered MSG on cortex of the kidneys of adult albino Wistar rats and compared with control group. The histomorphometry done by calibrating with ocular micrometer on kidney tissue of control and experimental group revealed a significant difference in glomeruli with increase in length, size of bowman's capsule with an increase in bowman's space. The size of renal tubules could not be compared as the cells of these tubules in experimental group were disintegrated and distorted. In the experimental group (rats treated with 4mg MSG/g body weight), the cortex of the kidneys developed variable pathological changes, which were patchy in distribution with intervening normal areas. There was distortion of renal cytoarchitecture. Many glomeruli (66.4%) showed hypercellularity, i.e., cellular proliferation of mesangial or endothelial cells and infiltration of inflammatory cells. The capillary membrane showed thickening as was evident on PAS stain. Since MSG, as a food additive, was found to be toxic on various organs of the body by various researchers, it should perhaps be stopped from being used as a food additive. This may be a suggestion which needs validation in human studies.

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Metastasis. 2014 Mar 23;7:1-8. doi: 10.4137/CGM.S14205. eCollection 2014. PubMed PMID: 24741325; PubMed Central PMCID: PMC3988670.

In this article, we have reviewed current literature regarding the regulation of hepatocellular carcinoma (HCC) by the interaction of malignant hepatocytes and their tissue environment through cytokine signaling, here represented by transforming growth factor-beta (TGF- β) signaling. We have discussed responses of TGF- β signaling in transition of hepatic stellate cells to myofibroblasts (MFBs), recruitment of tumor-associated macrophages (TAMs), and enrichment of tumor-associated endothelial cells (TECs). The malignant hepatocytes also secrete various factors such as platelet-derived growth factors (PDGFs), vascular endothelial growth factor (VEGF), and TGF- β . TGF- β , a super-family of cytokines, creates tumor microenvironment by interacting through other growth factors (epidermal growth factor receptor (EGFR), PDGF, fibroblast growth factor (FGF), hepatocyte growth factor (HGF), VEGF), cytokines and chemokines, and extracellular matrix (ECM) remodeling. Hence, the HCC tumor microenvironment may now be recognized as an important participant of tumor progression to act as potential target to systemic therapies compared to targeted therapies.

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Epithelioid angiomyolipoma (EAML) is a rare variant of angiomyolipoma found to have malignant potential and poorer prognosis. It is characterized by the predominance of epithelioid cells and frequent association with tuberous sclerosis. Its usual age of presentation is between the fourth and fifth decades of life, and only a single case has been reported in the pediatric age group. In this study, we report a case of epithelioid angiomyolipoma in a 4-year-old child with features of tuberous sclerosis, which is the youngest age of presentation.

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INTRODUCTION: The management of nonunion has remained a constant challenge. The associated bone defect, shortening, deformity and infection complicate the

management. A mono-lateral external fixator may minimise some of the problems frequently encountered in these patients. We report our results of prospectively evaluated 37 consecutive patients regarding nonunion of lower-extremity long bones managed using a mono-lateral external fixator.

PATIENTS AND METHODS: A total of 37 patients (7 femurs and 30 tibias), mean age 36 years, were stabilised using a mono-lateral fixator for nonunion of long bones. The mean time since injury was 8 months. Fifteen cases were infected and they received debridement and antibiotic treatment as per culture and sensitivity reports. In cases where the bone gap or shortening was >3 cm in the tibia and >5 cm in the femur, corticotomy and bone transport (bifocal procedure) was done and in the remaining cases, only compression-distraction (monofocal procedure) was done. The bone and functional results were assessed at the end of treatment according to the criteria described by Paley et al.

RESULTS: Union was achieved in 34 cases (91.9%). The average time for union was 5 months. Five cases were treated with the bifocal method and 32 cases were treated with the monofocal method. The average length gain in the bifocal method was 5.7 cm, mean duration of treatment was 8.2 months and bone healing index (BHI) was 1.44 months cm(-1). In six cases, the monofocal treatment was used for limb lengthening. The average length gain was 1.9 cm, mean duration of treatment was 4.83 months and BHI was 2.5 months cm(-1). Bone grafting was required in two cases at the docking site. The bone results were excellent in 24 cases, good in nine cases, fair in one case and poor in three cases. The functional results were excellent in 27 cases, good in six cases, fair in one case and poor in three cases. The most common complication in this series was pin-tract infection (11.5%).

CONCLUSIONS: A mono-lateral external fixator is an effective method for treating nonunion in the lower extremity with or without bone loss. The nonunion site can be carefully controlled with simultaneous correction of angulation and length.

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A 10-year-old girl, without consanguinity or neurologic disease in the family, presented with an 8- to 9-year history of progressive gait disturbance, incoordination, impaired hearing, and cognition; antenatal and neonatal histories were unremarkable. Salient examination findings were tightly curled scalp hair (figure 1A), impaired cognition and hearing, flaccid quadriparesis, and pancerebellar dysfunction. Salient investigative findings were leukodystrophy on MRI brain (figure 1B), sensorimotor polyneuropathy, and giant axons with aberrant neurofilament immunostaining on sural nerve biopsy (figure 2, A and B). Giant axonal neuropathy is a rare (worldwide 50 families reported) autosomal recessive disorder, characterized by gigaxonin gene mutations and disorganization of intermediate filaments.(1,2.)

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It is important to assess the root canal morphology and its variations before initiating the endodontic procedure. This is because the inability to clean the complete root canal system forms the seat for the persistent infection which ultimately leads to endodontic treatment failure. This case reports the use of dental operating microscope for the successful endodontic management of a two rooted and three canaled mandibular canine with the fractured instrument in the

middle canal of a 38-year-old healthy Asian woman. This case report highlights the need to use the dental operating microscope and ultrasonics in locating the elusive canal orifices. It is important to note the internal and external root canal morphological variations before starting the endodontic treatment without any pre-operative assumptions about the usual anatomy of the tooth.

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A 48-year-old male patient presented to the emergency room with a history of chest pain and breathlessness. Chest X-ray demonstrated a large radio-opaque foreign body in relation to the proximal right bronchial tree. The patient subsequently revealed a history of a misplaced denture 4 months previously. Urgent flexible bronchoscopy (FB) examination demonstrated a large partial denture impacted in the right intermediate bronchus, which was removed successfully using a flexible bronchoscope. Although rigid bronchoscopy (RB) is the procedure of choice for large-sized and impacted airway foreign bodies, the present case highlights the utility of FB in airway foreign body removal. In clinically stable patients with foreign body inhalation, FB can be employed initially as it is an outpatient and cost-effective procedure which can obviate the need for administration of general anaesthesia.

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OBJECTIVES: To evaluate the ability of magnetic resonance spectroscopic imaging to improve prostate cancer detection rate.

METHODS: A retrospective analysis was carried out of 278 men with prostate-specific antigen in the range of 4-10 ng/mL and normal digital rectal examination who underwent transrectal ultrasound-guided prostate biopsy. Outcomes were compared between men who had a standard biopsy versus those who also underwent a prebiopsy magnetic resonance spectroscopic imaging. Men with an abnormal voxel on magnetic resonance spectroscopic imaging had standard transrectal ultrasound biopsies plus biopsies directed to the abnormal voxels.

RESULTS: The study group (n = 140) and control group (n = 138) were similar in baseline parameters, such as mean age, prostate size and mean prostate-specific antigen. The overall cancer detection in the magnetic resonance spectroscopic imaging positive group (24.4%) was more than double that of the control group (10.1%). On comparing the magnetic resonance spectroscopic imaging results with the transrectal ultrasound biopsy findings, magnetic resonance spectroscopic imaging had 95.6% sensitivity, 41.9% specificity, a positive predictive value of 24.4%, a negative predictive value of 98% and an accuracy of 51.4%.

CONCLUSIONS: Magnetic resonance spectroscopic imaging-directed transrectal ultrasound biopsy increases the cancer detection rate compared with standard transrectal ultrasound biopsy in patients with normal digital rectal examination and elevated prostate-specific antigen in the range of 4-10 ng/mL.

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BACKGROUND: The unique series arrangement of the cerebral and pulmonary circulation in bidirectional superior cavopulmonary anastomosis (BCPA) makes the pulmonary blood flow dependent upon the cerebral blood flow. Until now, several investigators have tried to correct post-BCPA hypoxemia with various methods such as induced hyperventilation, the addition of carbon dioxide, and inhaled nitric oxide with variable success rates.

METHODS: We prospectively studied 25 children with univentricular physiology undergoing BCPA surgery at 5 different time points in the preoperative (1 time point) and postoperative period (4 time points, each separated by at least 3 mm Hg changes in the superior vena cava [SVC] pressure). Intravenous fluids were administered in the postoperative period to raise the SVC pressure.

RESULTS: The systemic arterial oxygen saturation (Sao₂) increased significantly ($p = 0.000$) from a preoperative value of $80\% \pm 7\%$ to $86\% \pm 7\%$, $91\% \pm 3\%$ and $95\% \pm 4\%$ at SVC pressures of 9 ± 1.6 mm Hg, 13 ± 1.3 mm Hg, and 16 ± 1.4 mm Hg, respectively, and then decreased to $94\% \pm 4\%$ at SVC pressure of 20 ± 1.7 mm Hg. Systolic and diastolic blood pressure increased significantly and simultaneously with SVC pressure from 71 ± 8 mm Hg and 42 ± 6 mm Hg to 89 ± 11 mm Hg and 52 ± 7 mm Hg, respectively ($p = 0.000$).

CONCLUSIONS: Administration of intravenous fluids improves the SVC pressure, possibly due to an increase in the cerebral blood flow and the SVC flow, and thus raises the arterial oxygen tension (Pao₂) and Sao₂. Each patient has a unique SVC pressure where the Sao₂ and the Pao₂ are maximum; beyond that limit, the Sao₂ does not improve.

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OBJECTIVES: To compare the performance of two new generation pulse oximeters, one with enhanced signal extraction technology (SET) and other without enhanced SET in detecting hypoxemia and to correlate it with arterial blood gas analysis.

METHODS: Forty-eight patients, admitted to pediatric intensive care unit (PICU) of a tertiary care teaching hospital in India for critical care and support during the study period, who had an arterial catheter in situ were included. Children with those disease conditions known to interfere with pulse oximetry and blood gas analysis were excluded. 184 set of observations were made during the study period. Each set had oxygen saturation (SpO₂) measured from both the pulse oximeters and the corresponding arterial oxygen saturation (SaO₂). The values were compared for occurrence of true and false alarms during periods of normal BP, hypotension and varying degrees of hypoxia.

RESULTS: The mean arterial SaO₂ in the study was $94.4\% \pm 4.9$. The mean SpO₂ recorded in conventional and enhanced signal extraction technology (SET) pulse oximeters were $94.9\% \pm 4.5$ and $97.2\% \pm 4.7$ respectively. Enhanced signal extraction technology pulse oximeter detected 4/27 (15%) of true hypoxemic events and 1 event was a false alarm. Conventional pulse oximeter detected 11/27 (41%) true hypoxemic events but recorded 6 false alarms.

CONCLUSIONS: Both pulse oximeters were not found to be performing satisfactorily in picking up hypoxemia in the study. There was good correlation with mean SpO₂ from pulse oximeters and arterial SaO₂. The reliability of pulse oximetry decreases with worsening hypoxemia and hypotension, and the sensitivity for picking up hypoxemia can be as low as 15%.

PMID: 24627281 [PubMed - as supplied by publisher]

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OBJECTIVE: Iodine is an essential micronutrient needed for the production of thyroid hormones. Pregnant mothers who are deficient in iodine provide less iodine to the fetal thyroid. This results in low production of thyroid hormones by the fetal thyroid, thereby leading to compromised mental and physical development of the fetus. The current study aimed to assess the current status of iodine nutrition among pregnant mothers in Himachal Pradesh, India, a known endemic region for iodine deficiency.

DESIGN: Three districts, namely Kangra, Kullu and Solan, were selected.

SETTING: In each district, thirty clusters (villages) were identified by utilizing the population-proportional-to-size cluster sampling methodology. In each cluster, seventeen pregnant mothers attending the antenatal clinics were included.

SUBJECTS: A total of 1711 pregnant mothers (647 from Kangra, 551 from Kullu and 513 from Solan) were studied. Clinical examination of the thyroid of each pregnant mother was conducted. Spot urine samples were collected from ten pregnant mothers in each cluster. Similarly, salt samples were collected from eleven pregnant mothers in each cluster.

RESULTS: Total goitre rate was 42.2 % (Kangra), 42.0 % (Kullu) and 19.9 % (Solan). The median urinary iodine concentration was 200 µg/l (Kangra), 149 µg/l (Kullu) and 130 µg/l (Solan). The percentage of pregnant mothers consuming adequately iodized salt (iodine content of 15 ppm and more) was found to be 68.3 % (Kangra), 60.3 % (Kullu) and 48.5 % (Solan).

CONCLUSION: Pregnant mothers in Kullu and Solan districts had iodine deficiency as indicated by a median urinary iodine concentration less than 150 µg/l.

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Rosai Dorfman disease (RDD) or sinus histiocytosis is a rare non-neoplastic idiopathic disease characterized by massive lymphadenopathy in young adults. Extranodal involvement is seen in 25%-43% cases. RDD is usually self-remitting. However, it mimics lymphoproliferative disorders clinically as well as on imaging. We present the F-FDG PET/CT findings in a 46-year-old female patient with nodal RDD.

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Malignant peripheral nerve sheath tumour (MPNST) is a rare variety of soft tissue sarcoma that originates from Schwann cells or pluripotent cells of neural crest origin. They have historically been difficult tumours to diagnose and treat. Surgery is the mainstay of treatment with a goal to achieve negative margins. Despite aggressive surgery and adjuvant therapy, the prognosis of patients with MPNST remains poor. MPNST arising from penis is a very rare entity; thus, it presents a diagnostic and therapeutic challenge. We present a case of penile MPNST in a 38-year-old man in the absence of neurofibromatosis treated with surgery followed by post-operative radiotherapy to a dose of 60 Gray in 30 fractions and adjuvant chemotherapy with ifosfamide and adriamycin.

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PMID: 24635732 [PubMed - as supplied by publisher]

48: Kavimandan A, Sharma M, Verma AK, Das P, Mishra P, Sinha S, Mohan A, Sreenivas V, Datta Gupta S, Makharia GK. Prevalence of celiac disease in nutritional anemia at a tertiary care center. *Indian J Gastroenterol*. 2014 Mar;33(2):114-8. doi: 10.1007/s12664-013-0366-6. Epub 2013 Sep 1. PubMed PMID: 23996798.

BACKGROUND: While anemia occurs in 80 % to 90 % of patients with celiac disease (CD), it may be the sole manifestation of CD. The prevalence of CD in Indian patients with nutritional anemia is not known.

PATIENTS AND METHODS: Adolescent and adult patients presenting with nutritional anemia were prospectively screened for CD using IgA anti-tissue transglutaminase antibody (anti-tTG Ab) followed, if positive, by upper gastrointestinal endoscopy and duodenal biopsy.

RESULTS: Ninety-six patients [mean±SD age 32.1±13.1 years and median duration of anemia 11 months (range 1 to 144 months)] were screened. Of these patients, 80 had iron deficiency anemia, 11 had megaloblastic anemia, and 5 had dimorphic anemia. Seventy-three patients were on hematinics and 36.4 % had received blood transfusions. Nineteen had a history of chronic diarrhea and the mean±SD

duration of diarrhea in them was 9.7 ± 35.8 months. IgA anti-tTG Ab was positive in 13 patients, of whom 12 agreed to undergo duodenal biopsy. Ten patients had villous atrophy (Marsh grade 3a in three, 3b in one, and 3c in six) and two did not. Thus, 10 patients with nutritional anemia (iron deficiency 9, vitamin B12 deficiency 1) were diagnosed to have CD. On multivariate logistic regression, age, duration of symptoms, and presence of diarrhea were found to be the predictors of CD. All the patients with CD were put on gluten-free diet and with iron and vitamin supplementations and showed a significant improvement in hemoglobin concentration.

CONCLUSIONS: CD screening should be included in the work up of otherwise unexplained nutritional anemia.

PMID: 23996798 [PubMed - in process]

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OBJECTIVE: To study the clinical and mutation profiles of children with cystic fibrosis in Jammu and Kashmir.

METHODS: One hundred consecutive patients presenting with one or more phenotypic features suggestive of cystic fibrosis (CF) were screened by quantitative sweat chloride testing. For patients with positive/equivocal test result on two occasions, CFTR gene mutation analysis was done by polymerase chain reaction.

RESULTS: Of the 100 patients, 18 (10 females) were diagnosed to have CF at a median age of 10.5 y (IQR 4.75-15.25 y) while the median age at the onset of symptoms was 12 mo (IQR 4-63 mo) with a delay in diagnosis by 102.4 ± 80.5 months. Clinical features at presentation included failure to thrive (94.4%), chronic cough (78%), recurrent pneumonia (61%), persistent pneumonia (11%), and chronic diarrhea (50%). Positive sweat chloride (>60 meq/L) was seen in 14 (14%) patients and 4 (4%) patients had equivocal (40-60 meq/L) value on two different occasions. Mutational analysis done in 15 patients showed DeltaF508 mutation in 20% (3/15) patients in homozygous form and in 13% (2/15) patients in heterozygous form. Intron 19 mutation 3849+10kb C>T was found in 40% (6/15) in heterozygous form. One (6.6%) patient had DeltaF508 and 3849+10kbC>T mutations in compound heterozygous form. Patients with equivocal sweat chloride and 3849+10kbC>T mutation had delayed onset of pulmonary involvement.

CONCLUSION: 3849 +10kbC>T mutation appears to be common in children with cystic fibrosis in Jammu and Kashmir followed by DeltaF508, although the data are quite limited. Although presentation is delayed and sweat chloride is in the equivocal range, severe lung involvement may occur in these patients.

PMID: 24277965 [PubMed - in process]

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Abstract A novel biomarker, CD68, which marks tumor-associated macrophages (TAMs) in the microenvironment, has recently been reported to affect the prognosis of Hodgkin lymphoma (HL). We aimed to evaluate its role in our patient cohort (n = 100) by utilizing a routine immunohistochemistry method on whole tissue sections and a semiquantitative method for CD68 scoring. Clinical data were taken from medical records. Correlation with baseline characteristics, attainment of complete remission (CR), progression-free survival (PFS) and disease-specific survival (DSS) was done by categorical analysis using different cut-offs of CD68 score and also by taking absolute CD68 score as a continuous variable. There was

no significant association between levels of CD68 expression and baseline characteristics or CR after primary therapy. CD68 score (neither categorical nor absolute continuous values) also did not predict for any difference in PFS or DSS. We conclude that CD68 TAM marker does not have prognostic value in HL.

PMID: 24067108 [PubMed - in process]

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Candida albicans is an opportunistic human fungal pathogen which causes disease mainly in immunocompromised patients. Activity of hydrolytic enzymes is essential for virulence of *C. albicans* and so is the capacity of these cells to undergo transition from yeast to mycelial form of growth. *Ocimum sanctum* is cultivated worldwide for its essential oil which exhibits medicinal properties. This work evaluates the anti-virulence activity of *O. sanctum* essential oil (OSEO) on 22 strains of *C. albicans* (including a standard strain ATCC 90028) isolated from both HIV positive and HIV negative patients. *Candida* isolates were exposed to sub-MICs of OSEO. In vitro secretion of proteinases and phospholipases was evaluated by plate assay containing BSA and egg yolk respectively. Morphological transition from yeast to filamentous form was monitored microscopically in LSM. For genetic analysis, respective genes associated with morphological transition (HWP1), proteinase (SAP1) and phospholipase (PLB2) were also investigated by Real Time PCR (qRT-PCR). Results were analyzed using Student's t-test. OSEO inhibits morphological transition in *C. albicans* and had a significant inhibitory effect on extracellular secretion of proteinases and phospholipases. Expression profile of respective selected genes associated with *C. albicans* virulence by qRT-PCR showed a reduced expression of HWP1, SAP1 and PLB2 genes in cells treated with sub-inhibitory concentrations of OSEO. This work suggests that OSEO inhibits morphological transition in *C. albicans* and decreases the secretion of hydrolytic enzymes involved in the early stage of infection as well as down regulates the associated genes. Further studies will assess the clinical application of OSEO and its constituents in the treatment of fungal infections.

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PMID: 24252340 [PubMed - in process]

52: Khandpur S, Kothiwala SK, Basnet B, Nangia R, Venkatesh HA, Sharma R. Extensive disseminated cysticercosis. *Indian J Dermatol Venereol Leprol*. 2014 Mar-Apr;80(2):137-40. doi: 10.4103/0378-6323.129389. PubMed PMID: 24685850.

Cysticercosis, especially neurocysticercosis, is a major public health problem in India. We report an unusual case of disseminated cysticercosis with extensive infiltration of the skin, central nervous system, skeletal muscles, eye, lung, and heart. A patient with extensive cutaneous cysticercosis must be thoroughly investigated for widespread internal organ involvement.

PMID: 24685850 [PubMed - in process]

53: Khurana S, Pushker N, Naik SS, Kashyap S, Sen S, Bajaj MS. Orbital tuberculosis in a paediatric population. *Trop Doct*. 2014 Mar 7. [Epub ahead of print] PubMed PMID: 24608265.

PurposeTo report the clinical profile and management of orbital tuberculosis (TB) in children.MethodsEight cases were studied retrospectively.ResultsAges in the

range of 3-16 years. Three cases presented with discharging sinus in upper lid, three with a cystic mass and two with lid necrosis. Underlying bony changes were found in five patients. Drainage and curettage was done for five patients, needle drainage of fluid was done in one patient and in two patients local debridement was done. Polymerase chain reaction for tuberculosis was positive in four cases and acid fast bacilli (AFB) were isolated on culture in three cases. On histopathology, six cases had granulomatous inflammation with caseating necrosis in one, though AFB could not be found. A favourable response to anti-tubercular treatment was achieved in all cases. Conclusion High index of suspicion is required for diagnosis of orbital TB. Microbiological and pathological diagnosis may not be achieved in all cases.

PMID: 24608265 [PubMed - as supplied by publisher]

54: Kokkayil P, Kurapati S, Negi N, Vajpayee M. Comparative evaluation of a reverse transcriptase based assay for HIV-1 viral load quantitation in resource limited settings. *J Virol Methods*. 2014 Jul;203:1-4. doi: 10.1016/j.jviromet.2014.02.021. Epub 2014 Mar 23. PubMed PMID: 24671025.

Molecular viral load assays are routinely used in high income countries for monitoring the copy number of human immunodeficiency virus (HIV) RNA. However, they require sophisticated facilities and expensive reagents and instruments. Hence, their routine use for patients belonging to resource limited settings is difficult and a low cost alternative is the need of the hour. This was a cross sectional study that analyzed and compared a reverse transcriptase enzyme based assay (Cavidi ExaVir Load version 3) with a real time polymerase chain reaction (PCR) assay (Roche COBAS TaqMan) in resource limited settings with subtype C predominance. The study included 75 HIV-1 positive treatment naïve patients whose CD4+ T lymphocytes count was estimated using BD FACS system and viral loads were quantified using both Cavidi ExaVir Load assay version 3 and Roche COBAS TaqMan Real Time PCR assay. The statistical analysis was performed using the Graph Pad Prism 5 software. The difference in the mean log₁₀ viral load values was found to be 0.2log₁₀copies/ml. The Bland Altman plot showed a clustering of viral load values toward the lower copy range. 78% of the samples had an agreement of ≤0.5log₁₀copies/ml and 90.74% of the samples had an agreement of ≤1log₁₀copies/ml. Both the assays showed a trend of negative correlation with the CD4+ T cell counts. The study found that ExaVir Load assay can be used as an alternative to the existing molecular assays in resource limited settings for the purpose of routine viral load measurement and monitoring treatment response.

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PMID: 24671025 [PubMed - in process]

55: Kumar A, Singh M, Sharma MC, Bakshi S, Sharma BS. Pediatric Sclerosing Rhabdomyosarcomas: A Review. *ISRN Oncol*. 2014 Mar 5;2014:640195. eCollection 2014. Review. PubMed PMID: 24729898; PubMed Central PMCID: PMC3963119.

Sclerosing RMS (SRMS) is a recently described subtype of RMS that has not yet been included in any of the classification systems for RMSs. We did pubmed search using keywords "sclerosing, and rhabdomyosarcomas" and included all pediatric cases (age ≤ 18 years) of SRMSs in this review. We also included our case of an eleven-year-old male child with skull base SRMS and discuss the clinical, histopathological, immunohistochemical, and genetic characteristics of these patients. Till now, only 20 pediatric cases of SRMSs have been described in the literature. Pediatric SRMS more commonly affects males at a mean age of 9 years. Extremities and head/neck regions were most commonly affected. Follow-up details were available for 16 patients with mean follow-up of 25.3 months. Treatment

failure rate was 43.75%. Overall amongst these 16 patients, 10 were alive without disease, 4 were alive with disease, and two died. Thus, overall and disease-free survival amongst these 16 patients were 87.5% and 62.5%, respectively. The literature regarding clinical behaviour and outcome of pediatric patients with SRMSs is patchy. Detailed molecular/genetic analysis and clinicopathological characterization with longer follow-ups of more cases may throw some light on this possibly new subtype of RMS.

PMCID: PMC3963119

PMID: 24729898 [PubMed - as supplied by publisher]

56: Kumar S, Rathore Y, Guleria S, Bansal VK. Renal transplantation in a child with thrombosed inferior vena cava. *Saudi J Kidney Dis Transpl*. 2014 Mar;25(2):367-9. PubMed PMID: 24626005.

The external iliac vein is commonly used in renal transplantation for vascular anastomosis of the allograft renal vein. However, there are rare instances when the transplant surgeon may encounter thrombosis of the ilio-caval vein during surgery, making renal transplantation a challenge. Often, these patients are considered unsuitable for renal transplantation. We report a case of thrombosis of the inferior vena cava in an asymptomatic pediatric patient in whom the splenic vein was used, at transplantation, for venous drainage. This case highlights that pre-operative Doppler screening should be performed in all potential renal transplant recipients.

PMID: 24626005 [PubMed - indexed for MEDLINE]

57: Kumar S, Tomar AK, Singh S, Gill K, Dey S, Singh S, Yadav S. Heparin binding carboxypeptidase E protein exhibits antibacterial activity in human semen. *Int J Biol Macromol*. 2014 Mar;64:319-27. doi: 10.1016/j.ijbiomac.2013.12.020. Epub 2013 Dec 21. PubMed PMID: 24365672.

Carboxypeptidase E (CPE) cleaves basic amino acid residues at the C-terminal end and involves in the biosynthesis of numerous peptide hormones and neurotransmitters. It was purified from human seminal plasma by ion exchange, heparin affinity and gel filtration chromatography followed by identification through SDS-PAGE and MALDI-TOF/MS analysis, which was further confirmed by western blotting. CPE was characterized as glycoprotein by Periodic Acid Schiff (PAS) staining and treating with deglycosylating enzyme N-glycosidase F. The interaction of CPE with heparin was illustrated by surface plasmon resonance (SPR) and *in silico* interaction analysis. The association constant (KA) and dissociation constant (KD) of CPE with heparin was determined by SPR and found to be 1.06×10^5 M and 9.46×10^{-6} M, respectively. It was detected in human spermatozoa also by western blotting using mouse anti-CPE primary antibody. 20-100 μ g/ml concentration of CPE was observed as highly effective in killing *Escherichia coli* by colony forming unit (CFU) assay. We suggest that CPE might act not only in the innate immunity of male reproductive tract but also regulate sperm fertilization process by interacting heparin.

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PMID: 24365672 [PubMed - in process]

58: Kumar VS, Subramani S, Veerapan S, Khan SA. Evaluation of online health information on clubfoot using the DISCERN tool. *J Pediatr Orthop B*. 2014 Mar;23(2):135-8. doi: 10.1097/BPB.0000000000000000. PubMed PMID: 24048196.

The Internet has become a major source of health information on various aspects

of clubfoot diagnosis and management. The World Wide Web becomes the first knowledge portal for a large number of anxious parents seeking information on clubfoot. Thus, a good quality webpage should provide necessary and comprehensive information on clubfoot so as to establish clarity in treatment options, compliance and bracing protocols. In contrast, modest quality information can induce bias and poor follow-up. We objectively evaluated online health information on clubfoot using the DISCERN tool. Using the universal search engine, Google, we conducted a Boolean search for the term 'clubfoot'. Only the first 50 sites providing health information on clubfoot were included in the study. We examined 334 links to include 50 of them. During analysis three websites were excluded because of duplication of content leaving 47 websites that were examined using the DISCERN tool. As per this tool, a score of less than 40% was graded as 'poor', 40-79% as 'fair' and at least 80% as 'good', whereas the overall quality was graded as 'low', 'moderate' and 'high' on similar standards. The overall quality of the publication was 'low' in 40% (19) websites, 'moderate' in 28% (13) and 'high' in 32% (15) of the websites we evaluated. Six (13%) of the publications showed good reliability; 25 (54%) showed fair reliability and 16 (33%) were unreliable. With regard to the quality of information on treatment choices, 44.7% (21) were 'good', 46.8% (22) were 'fair' and 8.5% (four) were 'poor'. We conclude that the quality of websites providing online health information on clubfoot needs significant improvement with emphasis on a universally acceptable template for disease information.

PMID: 24048196 [PubMed - in process]

59: Lamy A, Tong W, Jung H, Gafni A, Singh K, Tyrwhitt J, Yusuf S, Gerstein HC; on behalf of the ORIGIN Investigators. Cost implications of the use of basal insulin glargine in people with early dysglycemia: The ORIGIN trial. *J Diabetes Complications*. 2014 Mar 2. pii: S1056-8727(14)00054-3. doi: 10.1016/j.jdiacomp.2014.02.012. [Epub ahead of print] PubMed PMID: 24684774.

AIMS: The cost implications of the Outcome Reduction with an Initial Glargine Intervention (ORIGIN) trial were evaluated using a prespecified analysis plan. METHODS: Purchasing power parity-adjusted country-specific costs were applied to consumed healthcare resources by participants from each country. Subgroup analyses were conducted on subgroups based on baseline metabolic status and diabetes duration.

RESULTS: The total undiscounted cost per participant in the insulin glargine arm was \$13,491 (\$13,080 to \$14,254) versus \$11,189 (\$10,568 to \$12,147) for standard care, an increase of \$2303 (\$1370 to \$3235; $p < 0.0001$); the discounted increase was \$2099 (\$1276 to \$2923; $P < 0.0001$). The greater number of mainly generic oral anti-diabetic agents in the standard group partially offset the higher cost of basal insulin glargine. As the trial progressed and the standard group required more anti-diabetic medications, the annual cost difference decreased, reaching \$68 (-\$160 to \$295) in the last year. The subgroup whose baseline diabetes duration was ≥ 6 years achieved cost-savings during the trial.

CONCLUSIONS: From a global perspective basal insulin glargine use in ORIGIN incurred greater costs than standard care using older generic drugs. Nevertheless, the cost difference fell with time such that the intervention was cost-neutral by the last year.

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PMID: 24684774 [PubMed - as supplied by publisher]

60: Madan K, Venkatnarayan K, Shalimar, Mohan A. Successful medical management of tuberculous broncho-oesophageal fistula. *BMJ Case Rep*. 2014 Mar 11;2014. pii: bcr2013202560. doi: 10.1136/bcr-2013-202560. PubMed PMID: 24623363.

Broncho-oesophageal fistula (BEF) of benign aetiology is rare. BEF is a rare complication of intrathoracic involvement with tuberculosis. A high index of suspicion and appropriate investigations can lead to achieving an early diagnosis following which appropriate management can be timely instituted. Surgery can be avoided if the condition is recognised in early stages. We present a case of a young female patient with tubercular mediastinal lymphadenopathy complicated by left broncho-oesophageal fistulisation. Timely initiation of conservative medical management was followed by an uneventful recovery.

PMID: 24623363 [PubMed - in process]

61: Maharana P, Jhanji V, Vajpayee RB. Inadvertent use of cornea with previous LASIK in deep lamellar keratoplasty. *Optom Vis Sci*. 2014 Mar;91(3):e59-62. doi: 10.1097/OPX.000000000000162. PubMed PMID: 24389671.

PURPOSE: To report transplantation of a post-laser in situ keratomileusis (LASIK) donor cornea in a deep anterior lamellar keratoplasty (DALK).

CASE REPORT: An 18-year-old male patient with bilateral keratoconus underwent DALK in his right eye. One week postoperatively, the uncorrected visual acuity was 6/24 and the keratometry readings were 36.4/48.6 D in the operated eye. On slit-lamp examination, two interfaces were observed in the corneal stroma. An anterior segment optical coherence tomography (ASOCT; Visante) scan was performed on the operated eye. The ASOCT showed two distinct interfaces, one in the deep corneal stroma close to the Descemet membrane and another interface in the anterior corneal stroma, 225 µm below the surface of the cornea representing the LASIK flap. The central corneal thickness was 498 µm and the residual stromal thickness was between 45 and 52 µm. The records of the 57-year-old male donor who had died of a road traffic accident did not reveal any history of refractive surgery in the past. The patient was informed about the presence of a LASIK flap on his cornea. Because the patient is asymptomatic, a decision was taken to observe instead of exchanging the graft.

CONCLUSIONS: Our case report highlights transplantation of a donor cornea with previous refractive surgery. With refractive surgery being performed commonly, a careful and specific history should be obtained from the relatives of the deceased. We recommend the incorporation of standard imaging protocols in eye banks for detection of previous refractive surgery in donor corneas.

PMID: 24389671 [PubMed - indexed for MEDLINE]

62: Malankar D, Nair VV, Gupta SK, Das S, Airan B. Severe mitral regurgitation after intracardiac repair of tetralogy of Fallot: a rare complication and management. *Interact Cardiovasc Thorac Surg*. 2014 Mar 2. [Epub ahead of print] PubMed PMID: 24591398.

Tetralogy of Fallot (TOF) with additional ventricular septal defect (VSD) forms a difficult surgical subset. Commonly, additional VSD is in the muscular septum and direct visualization may be difficult during surgical repair especially in arrested heart. Consequently, direct closure of these defects is performed based upon preoperative imaging and/or intraoperative transoesophageal echocardiogram. We hereby report an unforeseen occurrence of traumatic acute severe mitral regurgitation after TOF repair possibly during closure of additional muscular VSD. We discuss the possible mechanism of this unprecedented complication, which was promptly diagnosed and managed with good surgical outcomes.

PMID: 24591398 [PubMed - as supplied by publisher]

63: Mallick S, Prasenjit D, Prateek K, Shasanka PS, Virender S, Rajni Y, Gaurav

J, Vijay MK, Arun KV, Mahajan JK, Sandeep A, Ranjan DN, Siddhartha DG. Chronic intestinal pseudo-obstruction: systematic histopathological approach can clinch vital clues. *Virchows Arch.* 2014 May;464(5):529-37. doi: 10.1007/s00428-014-1565-y. Epub 2014 Mar 25. PubMed PMID: 24663670.

The histopathological approach of chronic intestinal pseudo-obstruction (CIP) is critical, and the findings are often missed by the histopathologists for lack of awareness and nonavailability of standard criteria. We aimed to describe a detailed histopathological approach for working-up cases of CIP by citing our experience. Eight suspected cases of CIP were included in the study to determine and describe an approach for reaching the histopathological diagnosis collected over a period of the last 1.5 years. The Hirschsprung's disease was put apart from the scope of this study. A detailed light microscopic analysis was performed along with special and immunohistochemical stains. Transmission electron microscopy was carried out on tissue retrieved from paraffin embedded tissue blocks. Among the eight cases, three were neonates, one in the pediatric age group, two adolescent, and two adults. After following the described critical approach, we achieved the histological diagnoses in all the cases. The causes of CIP noted were primary intestinal neuronal dysplasia (IND) type B (in 4), mesenchymopathy (in 2), lymphocytic myenteric ganglionitis (in 1), and duplication of myenteric plexus with leiomyopathy (in 1). Desmosis was noted in all of them along with other primary pathologies. One of the IND patients also had visceral myopathy, type IV. Histopathologists need to follow a systematic approach comprising of diligent histological examination and use of immunohistochemistry, immunocytochemistry, and electron microscopy in CIP workup. Therapy and prognosis vary depending on lesions identified by pathologists. These lesions can be seen in isolation or in combinations.

PMID: 24663670 [PubMed - in process]

64: Mallick S, Panda SS, Ray R, Shukla R, Kabra M, Agarwal R. Semilobar holoprosencephaly with 21q22 deletion: an autopsy report. *BMJ Case Rep.* 2014 Mar 13;2014. pii: bcr2014203597. doi: 10.1136/bcr-2014-203597. PubMed PMID: 24626384.

Holoprosencephaly (HPE) is the most common forebrain developmental anomaly with a prevalence of 1:16 000 live-births. Possible aetiological agents include environmental factors and genetic defects such as trisomies (13, 18) and deletions (18p, 7q, 2p and 21q). This complex malformation is due to incomplete division of the cerebral hemisphere. The phenotypes of HPE include alobar, semilobar, lobar and midline interhemispheric fusion variants. Craniofacial anomalies occur in 80% of cases. Severely affected babies die in the neonatal period. Here we report an autopsied case of semilobar HPE with pituitary and adrenal agenesis with 21q22 deletion. Additional findings are noted that would help expand the spectrum of 21q22 deletion.

PMID: 24626384 [PubMed - in process]

65: Mathur P, Bhardwaj N, Mathur K, Behera B, Gupta G, Kapil A, Singh S, Misra MC. Clinical and molecular epidemiology of beta-hemolytic streptococcal infections in India. *J Infect Dev Ctries.* 2014 Mar 13;8(3):297-303. doi: 10.3855/jidc.3216. PubMed PMID: 24619259.

INTRODUCTION: Beta-hemolytic streptococci (β HS) cause a diverse array of human infections. Despite the high number of cases of streptococcal carriers and diseases, studies discerning the molecular epidemiology of β HS in India are limited. This study reports the molecular and clinical epidemiology of beta-hemolytic streptococcal infections from two geographically distinct regions of India.

METHODOLOGY: A total of 186 isolates of β HS from north and south India were included. The isolates were identified to species level and subjected to antimicrobial susceptibility testing. Polymerase chain reaction (PCR) was done to detect exotoxin genes, and emm types of group A streptococci (GAS) strains were ascertained by sequencing.

RESULTS: GAS was the most common isolate (71.5%), followed by group G streptococci (GGS) (21%). A large proportion of GAS produced speB (97%), smeZ (89%), speF (91%), and speG (84%). SmeZ was produced by 21% and 50% of GGS and GGS, respectively. A total of 45 different emm types/subtypes were seen in GAS, with emm 11 being the most common. Resistance to tetracycline (73%) and erythromycin (34.5%) was commonly seen in GAS.

CONCLUSIONS: A high diversity of emm types was seen in Indian GAS isolates with high macrolide and tetracycline resistance. SpeA was less commonly seen in Indian GAS isolates. There was no association between disease severity and exotoxin gene production.

PMID: 24619259 [PubMed - in process]

66: Meena S, Chowdhury B. How international are the leading orthopedic journals: a look at the composition of the editorial board members of the top orthopedic journals. *Arch Orthop Trauma Surg.* 2014 May;134(5):619-22. doi: 10.1007/s00402-014-1975-y. Epub 2014 Mar 18. PubMed PMID: 24639199.

BACKGROUND: Researches from the developing world contribute only a limited proportion to the total research output published in leading orthopedics journals. Some of them believe that there is substantial editorial bias against their work. We assessed the composition of the editorial boards of leading orthopedic journals.

METHODS: The editorial boards of 18 leading orthopedic journals according to their impact factor were retrieved from their website. We evaluated in which countries the editorial board members were based and classified these countries using the World Bank income criteria.

RESULTS: Individuals from number of countries can be found on the editorial boards of the investigated journals, but most of them are based in high-income countries. While 1,302 of the 1,401 editorial board members are based in countries with a high income according to the World Bank criteria, 37 are based in an upper middle income, 2 in lower middle income and none in a low-income economy.

CONCLUSION: The percentage of editorial board members in leading orthopedic journals is dominated by high-income countries with serious underrepresentation from low-income countries.

PMID: 24639199 [PubMed - in process]

67: Mehta S, Mittal PK, Swami MK. Psychosocial Functioning in Depressive Patients: A Comparative Study between Major Depressive Disorder and Bipolar Affective Disorder. *Depress Res Treat.* 2014;2014:302741. doi: 10.1155/2014/302741. Epub 2014 Mar 13. PubMed PMID: 24744917; PubMed Central PMCID: PMC3972948.

Introduction. Major depressive disorder (MDD) and bipolar affective disorder (BAD) are among the leading causes of disability. These are often associated with widespread impairments in all domains of functioning including relational, occupational, and social. The main aim of the study was to examine and compare nature and extent of psychosocial impairment of patients with MDD and BAD during depressive phase. **Methodology.** 96 patients (48 in MDD group and 48 in BAD group) were included in the study. Patients were recruited in depressive phase (moderate to severe depression). Patients having age outside 18-45 years, psychotic symptoms, mental retardation, and current comorbid medical or axis-1 psychiatric

disorder were excluded. Psychosocial functioning was assessed using Range of Impaired Functioning Tool (LIFE-RIFT). Results. Domains of work, interpersonal relationship, life satisfaction, and recreation were all affected in both groups, but the groups showed significant difference in global psychosocial functioning score only ($P = 0.031$) with BAD group showing more severe impairment. Conclusion. Bipolar depression causes higher global psychosocial impairment than unipolar depression.

PMCID: PMC3972948

PMID: 24744917 [PubMed]

68: Menon KC, Ferguson EL, Thomson CD, Gray AR, Zodpey S, Saraf A, Das PK, Pandav CS, Skeaff SA. Iron status of pregnant Indian women from an area of active iron supplementation. *Nutrition*. 2014 Mar;30(3):291-6. doi: 10.1016/j.nut.2013.08.015. PubMed PMID: 24484679.

OBJECTIVE: The aim of this study was to investigate the iron status of pregnant tribal women from Ramtek, Nagpur, Maharashtra, India using a combination of indices.

METHODS: A community-based observational study was conducted to assess iron status using a convenience sample of pregnant Indian tribal women from Ramtek. Pregnant women were recruited at 13 to 22 wk gestation (first visit; $n = 211$) and followed to 29 to 42 wk gestation (second visit; $n = 177$) of pregnancy. Sociodemographic and anthropometric data; iron supplement intake; and blood samples for estimating hemoglobin (Hb), serum ferritin (SF), soluble transferrin receptor (sTfR), and C-reactive protein (CRP) were obtained.

RESULTS: The mean (SD) Hb concentration at recruitment was 106 (15) g/L and 106 (14) g/L at the second visit; 41% of the women at recruitment and 55% at second visit were anemic (14% higher, $P < 0.001$). No women at recruitment and 3.7% at second visit had SF concentration < 15 ng/mL; and 3.3% at recruitment and 3.9% at the second visit had sTfR > 4.4 ng/mL (0.6% higher, $P = 0.179$). Almost 62% and 71% of pregnant women used iron supplements at both visits, respectively. Iron supplement intake > 7 d in the preceding month improved the Hb concentration by 3.23 g/L and reduced sTfR concentration by 13%; women who were breastfeeding at the time of recruitment had 11% higher SF concentration.

CONCLUSIONS: The iron indices suggest that pregnant tribal women of central India, although anemic, had good iron status. Use of iron supplements > 7 d in the preceding month improved iron status; however, non-iron-deficiency anemia persisted in this group.

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69: Mirza Z, Pillai VG, Zhong WZ. Structure of N-terminal sequence Asp-Ala-Glu-Phe-Arg-His-Asp-Ser of A β -peptide with phospholipase A2 from venom of Andaman Cobra sub-species *Naja naja sagittifera* at 2.0 Å resolution. *Int J Mol Sci*. 2014 Mar 10;15(3):4221-36. doi: 10.3390/ijms15034221. PubMed PMID: 24619194; PubMed Central PMCID: PMC3975393.

Alzheimer's disease (AD) is one of the most significant social and health burdens of the present century. Plaques formed by extracellular deposits of amyloid β (A β) are the prime player of AD's neuropathology. Studies have implicated the varied role of phospholipase A2 (PLA2) in brain where it contributes to neuronal growth and inflammatory response. Overall contour and chemical nature of the substrate-binding channel in the low molecular weight PLA2s are similar. This study involves the reductionist fragment-based approach to understand the structure adopted by N-terminal fragment of Alzheimer's A β peptide in its complex with PLA2. In the current communication, we report the structure determined by X-ray crystallography of N-terminal sequence Asp-Ala-Glu-Phe-Arg-His-Asp-Ser

(DAEFRHDS) of A β -peptide with a Group I PLA2 purified from venom of Andaman Cobra sub-species *Naja naja sagittifera* at 2.0 Å resolution (Protein Data Bank (PDB) Code: 3JQ5). This is probably the first attempt to structurally establish interaction between amyloid- β peptide fragment and hydrophobic substrate binding site of PLA2 involving H bond and van der Waals interactions. We speculate that higher affinity between A β and PLA2 has the therapeutic potential of decreasing the A β -A β interaction, thereby reducing the amyloid aggregation and plaque formation in AD.

PMCID: PMC3975393

PMID: 24619194 [PubMed - in process]

70: Mishra G, Kumar N, Kaur G, Jain S, Tiwari PK, Mehra NK. Distribution of HLA-A, B and DRB1 alleles in Sahariya tribe of North Central India: an association with pulmonary tuberculosis. *Infect Genet Evol.* 2014 Mar;22:175-82. doi: 10.1016/j.meegid.2013.08.019. Epub 2013 Aug 28. PubMed PMID: 23994122.

Sahariya, a primitive tribe, native of North Central India, is characterized by a significantly increased incidence of pulmonary tuberculosis (PTB) as compared to other tribes from the same region. Host genetic factors are known to influence susceptibility to PTB at the population level. Since an association of immune regulatory genes, particularly HLA, with PTB susceptibility has already been reported in several studies, we investigated a similar association of HLA alleles with PTB pathogenesis in the Sahariya tribe. A total of 210 cases and 178 healthy individuals from Sahariya tribe were genotyped for HLA class I and II alleles using the PCR based SSP and Reverse-SSO methods. The study showed a significantly increased allelic frequency of HLA-DRB1(*)15 ($p=0.02$) in the patients as compared to healthy controls. However, the allelic frequency of HLA-DRB1(*)16 was significantly reduced in patients than in controls ($p=0.01$). Three locus haplotype analysis of HLA-A, B and DR revealed a significantly increased frequency of A(*)24-B(*)40-DRB1(*)15 haplotype among patients than controls ($p=0.005$), while A(*)02-B(*)40-DRB1(*)16 and A(*)02-B40-DRB1(*)03 ($p=0.001$ and 0.02 , respectively) were significantly reduced in the patients. Our findings confirm a positive association of HLA-DRB1(*)15 in Sahariya tribe similar to the one already shown in other Indian ethnic groups. On the other hand, HLA-A(*)24-B(*)40-DRB1(*)15 haplotype was found to be specific to Sahariya tribe with a strong predisposition to PTB. Further, the protection offered by DRB1(*)16 allele and associated haplotypes towards PTB in this tribe appears to be a novel finding that warrants further investigation with regard to resistance to PTB.

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PMID: 23994122 [PubMed - in process]

71: Mukherjee A, Singla M, Velpandian T, Sirohiwal A, Vajpayee M, Singh R, Kabra SK, Lodha R. Pharmacokinetics of Nevirapine, Stavudine and Lamivudine in Indian HIV-infected Children Receiving Generic Fixed Dose Combinations. *Indian Pediatr.* 2014 Mar 8;51(3):191-7. PubMed PMID: 24736906.

OBJECTIVE: To determine the trough and two hour plasma levels of nevirapine, stavudine, and lamivudine when administered in fixed dose combinations (FDC).

DESIGN: Cross sectional.

SETTING: Tertiary care hospital in Northern India.

PARTICIPANTS: 79 HIV-infected children receiving antiretroviral therapy with FDCs for more than month.

INTERVENTION: Two-point sampling (0 and 2 hours after the morning dose).

OUTCOME MEASURES: Plasma concentrations of all three drugs were simultaneously

assayed by liquid chromatography/mass spectroscopy.

RESULTS: Majority (77%) of children were receiving fixed dose combination of stavudine, lamivudine, nevirapine in the ratio of 6:30:50mg. The median (IQR) trough and 2-hour plasma levels ($\mu\text{g/mL}$) of nevirapine, stavudine and lamivudine were 5.2 (4.0, 6.3) and 7.9 (6.0, 9.7); 0.1 (0.06, 0.16) and 1.1 (0.59, 1.6); 0.1 (0.02, 0.2) and 2.5 (1.4, 3.1), respectively. Very few children had sub-therapeutic plasma drug levels of stavudine (2.5%), lamivudine (7.6%) and nevirapine (10%). Inadequate viral suppression at 6 months follow up was significantly associated with initial high viral load, low CD4 percentage at the time of enrolment in study, and lower doses of lamivudine and stavudine.

CONCLUSIONS: The currently available generic pediatric fixed dose antiretroviral combinations in India provide adequate drug exposure in majority of children.

PMID: 24736906 [PubMed - in process]

72: Panda A, Kumar A, Gamanagatti S, Patil A, Kumar S, Gupta A. Traumatic diaphragmatic injury: a review of CT signs and the difference between blunt and penetrating injury. *Diagn Interv Radiol*. 2014 Mar-Apr;20(2):121-8. doi: 10.5152/dir.2013.13248. PubMed PMID: 24412818.

PURPOSE: We aimed to present the frequency of computed tomography (CT) signs of diaphragmatic rupture and the differences between blunt and penetrating trauma. **MATERIALS AND METHODS:** The CT scans of 23 patients with surgically proven diaphragmatic tears (both blunt and penetrating) were retrospectively reviewed for previously described CT signs of diaphragmatic injuries. The overall frequency of CT signs was reported; frequency of signs in right- and left-sided injuries and blunt and penetrating trauma were separately tabulated and statistically compared.

RESULTS: The discontinuous diaphragm sign was the most common sign, observed in 95.7% of patients, followed by diaphragmatic thickening (69.6%). While the dependent viscera sign and collar sign were exclusively observed in blunt-trauma patients, organ herniation ($P = 0.05$) and dangling diaphragm ($P = 0.0086$) signs were observed significantly more often in blunt trauma than in penetrating trauma. Contiguous injury on either side of the diaphragm was observed more often in penetrating trauma (83.3%) than in blunt trauma (17.7%).

CONCLUSION: Knowledge of the mechanism of injury and familiarity with all CT signs of diaphragmatic injury are necessary to avoid a missed diagnosis because there is variability in the overall occurrence of these signs, with significant differences between blunt and penetrating trauma.

PMID: 24412818 [PubMed - in process]

73: Panda SS, Agarwala S, Kabra SK, Bhatnagar V. A Survey of Pulmonary Function Abnormalities Following Thoracotomy. *Indian J Pediatr*. 2014 Mar 6. [Epub ahead of print] PubMed PMID: 24596059.

OBJECTIVE: To study the incidence and type of pulmonary function abnormalities after thoracotomy in children.

METHODS: Children below 12 y of age who had undergone thoracotomy for any condition and have at least 2 y follow up were included in the study. Detailed assessment of the patients included history and general examination, clinical assessment of pulmonary function, bedside tests to assess pulmonary function and laboratory pulmonary function test using portable spirometer.

RESULTS: Fifty two patients were included in the study. Twenty-seven were cases of esophageal atresia with trachea-esophageal fistula (EATEF), nine pulmonary metastasis from abdominal solid tumors, six mediastinal masses, three hydatid cyst, three eventration of diaphragm, two bronchiectasis, and one each of H-type TEF and congenital esophageal stenosis. The mean age at the time of evaluation

was 6.3 y (range 2-18 y). While all the patients were clinically assessed, only 25 (48 %) were eligible for bedside tests and 23 (44 %) for spirometry. The incidences of abnormalities picked were: dyspnea during exercise 8/52 (15.4 %), dyspnea on exercise and on climbing stairs 1/52 (2 %), decreased breath holding time 2/25 (8 %), abnormal incentive spirometry 1/25 (4 %), mild restrictive pattern on pulmonary function test (PFT) 11/23 (47.8 %), moderate restrictive pattern on PFT 2/23 (8.7 %). None had an obstructive pattern on PFT.

CONCLUSIONS: Though the incidences of pulmonary function abnormalities were high, these were of mild grade. Close follow up of patients after thoracotomy would be needed for early pick up and appropriate management of these abnormalities to prevent long-term consequences.

PMID: 24596059 [PubMed - as supplied by publisher]

74: Pandey SK, Pandey S, Ranjan R, Shah V, Mishra RM, Sharma M, Saxena R. Phenotypic effect of α -globin gene numbers on Indian sickle β -thalassemia patients. *J Clin Lab Anal.* 2014 Mar;28(2):110-3. doi: 10.1002/jcla.21652. Epub 2014 Jan 6. PubMed PMID: 24395608.

BACKGROUND: Sickle cell β -thalassemia is a compound heterozygous state of β -thalassemia and sickle cell anemia. Patient with these conditions showed mild-to-severe clinical phenotype.

OBJECTIVES: The objective of this study was to evaluate the effects of α -globin gene numbers on the phenotype of sickle cell β -thalassemia patients.

MATERIALS AND METHODS: Seventy-five sickle cell β -thalassemia patients were characterized. Clinical, hematological, and molecular characterization was performed in all subjects. Amplified refractory mutation system-polymerase chain reaction was applied for β -thalassemia mutation study while α -genotyping was conducted by Gap-PCR.

RESULTS: Highest frequency of IVS1-5 (33 out of 75 patients) β -thalassemia genotype was recorded. Twenty-eight patients were reported with α -globin chain deletion while four had α -triplications (Anti α -3.7kb). Sickle β -thalassemia patients with α -chain deletions ameliorate hematological and clinical variables.

CONCLUSIONS: This study indicates that the coexistence of α -globin chain deletions showed mild phenotype instead of absence of α -chain deletions while the patients with triplication of α -genes express severe phenotype.

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PMID: 24395608 [PubMed - in process]

75: Passah A, Tripathi M, Kumar R, Das CJ, Goyal A, Bal CS. Brain Metastasis in Carcinoma Breast Demonstrated on ^{68}Ga NOTA-Bisphosphonate PET/CT. *Clin Nucl Med.* 2014 Mar 28. [Epub ahead of print] PubMed PMID: 24686213.

^{68}Ga NOTA-bisphosphonate is a new bone-seeking PET radiotracer undergoing clinical evaluation. We report a case of a carcinoma breast who underwent ^{68}Ga NOTA-bisphosphonate PET/CT for detection of skeletal metastasis. In addition to skeletal metastasis, a focal area of abnormal radiotracer uptake was noted in the brain, which was confirmed as brain metastasis on MRI.

PMID: 24686213 [PubMed - as supplied by publisher]

76: Paul VK, Sankar MJ, Saini S. Trek to MDG 4: State of Indian States. *Indian J Pediatr.* 2014 Mar 22. [Epub ahead of print] PubMed PMID: 24652266.

OBJECTIVES: To provide projections of progress towards the national and state

specific MDG 4 using infant mortality rates (IMR) as the indicator.

METHODS: Infant mortality rates (IMR) of major Indian states for year 1990 were used as the base for evaluating their progress in child health. In the absence of any specific guidelines, the state specific target IMR was derived from the IMR:U5MR (under 5 mortality rate) of the countries whose current U5MR is between 11 and 47 per 1,000 live-births (range of target U5MR for Indian states). The projected IMR for year 2015 was then estimated by the average annual rate of reduction (AARR) from 2005 to 2012.

RESULTS: Only a few major states-Karnataka, Maharashtra, Odisha, Punjab, and Tamil Nadu are likely to achieve their respective target IMR within the stipulated time (2015). The other major states, and India as a whole, are likely to miss the MDG 4. The two worst performers, Assam and West Bengal, are likely to achieve their respective targets by 2032 and 2022 respectively. Almost all the states have witnessed a significant progress since the advent of National Rural Health Mission (NRHM) in mid-2005-the AARR has almost doubled in the post-NRHM epoch for most states and India as a whole.

CONCLUSIONS: The overall progress of most Indian states towards achieving MDG 4 is presently unsatisfactory. However, given the momentum gained since the commencement of NRHM, acceleration in child survival is quite possible in these states.

PMID: 24652266 [PubMed - as supplied by publisher]

77: Prakash S, Mandal P. Improving somatic health in severe mental illness. *Acta Psychiatr Scand.* 2014 Mar;129(3):236-7. doi: 10.1111/acps.12232. Epub 2013 Nov 26. PubMed PMID: 24274997.

Improving somatic health in severe mental illness.

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Comment in

Acta Psychiatr Scand. 2014 Mar;129(3):237.

PMID: 24274997 [PubMed - in process]

78: 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 Mar 11. pii: S0020-1383(14)00122-3. doi: 10.1016/j.injury.2014.03.001. [Epub ahead of print] 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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PMID: 24680470 [PubMed - as supplied by publisher]

79: Ramakrishnan S, Bhargava B, Seth S, Airan B. Alcohol ablation of right ventricular outflow tract obstruction. *JACC Cardiovasc Interv.* 2014 Apr;7(4):443-5. doi: 10.1016/j.jcin.2013.06.023. Epub 2014 Mar 14. PubMed PMID: 24630874.

80: Rani N, Singh S, Dhar P, Kumar R. Surgical importance of arterial segments of human kidneys: an angiography and corrosion cast study. *J Clin Diagn Res.* 2014 Mar;8(3):1-3. doi: 10.7860/JCDR/2014/7396.4086. Epub 2014 Mar 15. PubMed PMID: 24783063.

Objective: Variations in the arterial supply of human kidney have been observed frequently, either in routine dissections or surgical practice. The main objective of the present study was to describe the arterial segmental pattern of human kidneys and its variation by angiography and corrosion cast techniques. Materials and Methods: Forty kidneys were washed and a plastic cannula was inserted into renal artery and the omnipaque dye was injected into it and X-ray was taken. The corrosion casts were prepared by injecting coloured acetate butyrate (CAB) granules solution. Results: Five vascular segments of kidney were seen based on the branching pattern of the renal artery by angiography and corrosion cast techniques. The renal artery was divided into anterior and posterior branches. The anterior branch further divided into four branches viz. apical segmental artery (ASA), Upper segmental artery (USA), middle segmental artery (MSA), lower segmental artery (LSA) while the posterior branch continue as posterior segmental artery. The origins of segmental arteries were variable. In 60% cases apical segmental artery (ASA) had common origin with upper segmental artery (USA) while in 40% cases it took origin directly from the main renal artery. Similarly the variations in the origin of the other branches of anterior division of renal artery were observed. The posterior segmental artery (PSA) however was single and comparatively small and supplied the posterior surface of the kidney. Conclusion: The knowledge of the vascular pattern of the kidney is thus important for the purpose of angiography and surgical procedures especially for nephrectomy and kidney transplantation.

PMCID: PMC4003595

PMID: 24783063 [PubMed]

81: Rastogi N, Nagpal N, Alam H, Pandey S, Gautam L, Sinha M, Shin K, Manzoor N, Virdi JS, Kaur P, Sharma S, Singh TP. Preparation and antimicrobial action of three tryptic digested functional molecules of bovine lactoferrin. *PLoS One.* 2014 Mar 3;9(3):e90011. doi: 10.1371/journal.pone.0090011. eCollection 2014. PubMed PMID: 24595088; PubMed Central PMCID: PMC3940724.

Lactoferrin is an 80 kDa bilobal, iron binding glycoprotein which is primarily antimicrobial in nature. The hydrolysis of lactoferrin by various proteases in the gut produces several functional fragments of lactoferrin which have varying molecular sizes and properties. Here, bovine lactoferrin has been hydrolyzed by trypsin, the major enzyme present in the gut, to produce three functional molecules of sizes approximately 21 kDa, 38 kDa and 45 kDa. The molecules have been purified using ion exchange and gel filtration chromatography and identified using N-terminal sequencing, which reveals that while the 21 kDa molecule corresponds to the N2 domain (21LF), the 38 kDa represents the whole C-lobe (38LF) and the 45 kDa is a portion of N1 domain of N-lobe attached to the C-lobe (45LF). The iron binding and release properties of 21LF, 38LF and 45LF have been studied and compared. The sequence and structure analysis of the portions of the excision sites of LF from various species have been done. The antibacterial properties of these three molecules against bacterial strains, *Streptococcus pyogenes*, *Escherichia coli*, *Yersinia enterocolitica* and *Listeria monocytogenes* were investigated. The antifungal action of the molecules was also evaluated against *Candida albicans*. This is the first report on the antimicrobial actions of the trypsin cleaved functional molecules of lactoferrin from any species.

PMCID: PMC3940724

PMID: 24595088 [PubMed - in process]

82: Rodriguez-Luna D, Dowlatshahi D, Aviv RI, Molina CA, Silva Y, Dzialowski I, Lum C, Czlonkowska A, Boulanger JM, Kase CS, Gubitz G, Bhatia R, Padma V, Roy J, Stewart T, Huynh TJ, Hill MD, Demchuk AM; PREDICT/Sunnybrook ICH CTA Study Group. Venous phase of computed tomography angiography increases spot sign detection, but intracerebral hemorrhage expansion is greater in spot signs detected in arterial phase. *Stroke*. 2014 Mar;45(3):734-9. doi: 10.1161/STROKEAHA.113.003007. Epub 2014 Jan 30. PubMed PMID: 24481974.

BACKGROUND AND PURPOSE: Variability in computed tomography angiography (CTA) acquisitions may be one explanation for the modest accuracy of the spot sign for predicting intracerebral hemorrhage expansion detected in the multicenter Predicting Hematoma Growth and Outcome in Intracerebral Hemorrhage Using Contrast Bolus CT (PREDICT) study. This study aimed to determine the frequency of the spot sign in intracerebral hemorrhage and its relationship with hematoma expansion depending on the phase of image acquisition.

METHODS: PREDICT study was a prospective observational cohort study of patients with intracerebral hemorrhage presenting within 6 hours from onset. A post hoc analysis of the Hounsfield units of an artery and venous structure were measured on CTA source images of the entire PREDICT cohort in a core laboratory. Each CTA study was classified into arterial or venous phase and into 1 of 5 specific image acquisition phases. Significant hematoma expansion and total hematoma enlargement were recorded at 24 hours.

RESULTS: Overall (n=371), 77.9% of CTA were acquired in arterial phase. The spot sign, present in 29.9% of patients, was more frequently seen in venous phase as compared with arterial phase (39% versus 27.3%; P=0.041) and the later the phase of image acquisition (P=0.095). Significant hematoma expansion (P=0.253) and higher total hematoma enlargement (P=0.019) were observed more frequently among spot sign-positive patients with earlier phases of image acquisition.

CONCLUSIONS: Later image acquisition of CTA improves the frequency of spot sign detection. However, spot signs identified in earlier phases may be associated with greater absolute enlargement. A multiphase CTA including arterial and venous acquisitions could be optimal in patients with intracerebral hemorrhage.

PMID: 24481974 [PubMed - indexed for MEDLINE]

83: Roy M, Jain D, Bakhshi S, Mathur S, Iyer VK. Primary Langerhans cell histiocytosis of the thyroid gland: role of langerin in FNA cytological diagnosis. *Cytopathology*. 2014 Mar 25. doi: 10.1111/cyt.12142. [Epub ahead of print] PubMed PMID: 24666642.

84: Roy S, Nag TC, Upadhyay AD, Mathur R, Jain S. Prenatal music stimulation facilitates the postnatal functional development of the auditory as well as visual system in chicks (*Gallus domesticus*). *J Biosci*. 2014 Mar;39(1):107-17. PubMed PMID: 24499795.

Rhythmic sound or music is known to improve cognition in animals and humans. We wanted to evaluate the effects of prenatal repetitive music stimulation on the remodelling of the auditory cortex and visual Wulst in chicks. Fertilized eggs (0 day) of white leghorn chicken (*Gallus domesticus*) during incubation were exposed either to music or no sound from embryonic day 10 until hatching. Auditory and visual perceptual learning and synaptic plasticity, as evident by synaptophysin and PSD-95 expression, were done at posthatch days (PH) 1, 2 and 3. The number of responders was significantly higher in the music stimulated group as compared to controls at PH1 in both auditory and visual preference tests. The stimulated chicks took significantly lesser time to enter and spent more time in the maternal area in both preference tests. A significantly higher expression of synaptophysin and PSD-95 was observed in the stimulated group in comparison to control at PH1-3 both in the auditory cortex and visual Wulst. A significant inter-hemispheric and gender-based difference in expression was also found in all groups. These results suggest facilitation of postnatal perceptual behaviour and synaptic plasticity in both auditory and visual systems following prenatal stimulation with complex rhythmic music.

PMID: 24499795 [PubMed - in process]

85: Rufai SB, Kumar P, Singh A, Prajapati S, Balooni V, Singh S. Comparison of Xpert MTB/RIF with Line Probe Assay for detection of Rifampicin mono-resistant *Mycobacterium tuberculosis*. *J Clin Microbiol*. 2014 Mar 19. [Epub ahead of print] PubMed PMID: 24648554.

The MTBDRplus line probe assay (LPA) and Xpert MTB/RIF have been endorsed by World Health Organization for rapid diagnosis of drug resistant tuberculosis. However, there is no clarity regarding the superiority of one over the other. In a double-blinded prospective study, we evaluated the efficacy of Xpert MTB/RIF on samples that were first tested by LPA under the revised national tuberculosis control program of India. A total of 405 sputa of suspected drug resistant tuberculosis patients were included. Of these, 285 smear positive samples were subjected to LPA. Seventy-two (25.8%) samples showed multi-drug resistance, 62 (22.2%) showed rifampicin mono-resistance, 29 (10.3%) isoniazid mono-resistance and 116 (41.5%) were pan-susceptible. Six (2.1%) samples gave invalid results. Of the 62 rifampicin mono-resistant samples by LPA, 38 (61.2%) showed rifampicin resistance while 21 (33.8%) were found susceptible to rifampicin by Xpert MTB/RIF using cartridge version G4. Three (4.8%) samples gave an error. Of the 116 pan-susceptible samples, only 83 were available for Xpert MTB/RIF testing; of which 4 (4.8%) were found rifampicin resistant, 74 (89.1%) were susceptible and five (6.0%) showed an error. The 25 discrepant samples were further subjected to MGIT960 drug-susceptibility testing. The MGIT960 results showed 100% agreement with LPA results but only 64.4% agreement with Xpert MTB/RIF results. Sequencing analysis of discrepant samples showed 91.3% concordance with LPA but only 8.7% concordance with Xpert MTB/RIF assay. These findings warn that by using the Xpert MTB/RIF testing we might be underestimating the burden of drug-resistant

tuberculosis and country specific probes need to be designed to increase the sensitivity of Xpert MTB/RIF.

PMID: 24648554 [PubMed - as supplied by publisher]

86: Saha S, Goswami R. Menstruation associated hypocalcemic symptoms and serum calcium in patients with idiopathic hypoparathyroidism. *BMC Endocr Disord.* 2014 Mar 21;14(1):28. doi: 10.1186/1472-6823-14-28. PubMed PMID: 24655472; PubMed Central PMCID: PMC3994449.

BACKGROUND: Some of the patients with idiopathic hypoparathyroidism (IHP) report symptoms of hypocalcemia during menstruation. There is limited data on this observation.

METHODS: Twenty six menstruating women with IHP and 26 healthy controls were questioned regarding symptoms suggestive of hypocalcemia during menstruation. Twelve patients and eight controls were asked to prospectively monitor symptoms suggestive of hypocalcemia and premenstrual syndrome (PMS) if any, over two consecutive menstrual cycles. Serum ionized calcium (SiCa⁺⁺), total and albumin adjusted calcium and intact paratharmone (iPTH) were measured at eight points covering menstrual, immediate post-menstrual, mid-cycle and premenstrual phase.

RESULTS: Twelve of the 26 (46.2%) patients with IHP reported hypocalcemic symptoms during menstruation as compared to none of the controls. During prospective monitoring, there was no specific trend of hypocalcemic symptoms with respect to the phase of menstrual cycle. The mean SiCa⁺⁺, serum total and albumin-adjusted calcium, iPTH and inorganic-phosphorus measured over two menstrual cycles were not significantly different in either of the two study groups. None of the subjects had PMS.

CONCLUSION: Women with IHP do not show any trend of hypocalcemic symptoms or fluctuations in serum calcium over different phases of menstrual cycles.

Therefore, patients with hypoparathyroidism linking hypocalcemic symptoms with menstruation should be reassured regarding lack of this association.

PMCID: PMC3994449

PMID: 24655472 [PubMed]

87: Sahai P, Mohanti BK, Raina PK, Vijay MK, Pathy S, Chander S, Sharma A. Colon Cancer with Metachronous Presentation of Krukenberg's Tumor in an Adolescent. *J Gastrointest Cancer.* 2014 Mar 26. [Epub ahead of print] PubMed PMID: 24668320.

88: Sahai P, Mohanti BK, Nath D, Bhasker S, Chander S, Bakhshi S, Singh CA. Malignant peripheral nerve sheath tumour of the maxilla. *Case Rep Otolaryngol.* 2014;2014:230849. doi: 10.1155/2014/230849. Epub 2014 Mar 18. PubMed PMID: 24744936; PubMed Central PMCID: PMC3976929.

A 38-year-old man was diagnosed with malignant peripheral nerve sheath tumour of the maxilla. He was treated with total maxillectomy. Histopathological examination of the resected specimen revealed a close resection margin. The tumour was of high grade with an MIB-1 labelling index of almost 60%. At six weeks following the surgery, he developed local tumour relapse. The patient succumbed to the disease at five months from the time of diagnosis. The present report underlines the locally aggressive nature of malignant peripheral nerve sheath tumour of the maxilla which necessitates an early therapeutic intervention. A complete resection with clear margins is the most important prognostic factor for malignant peripheral nerve sheath tumour in the head and neck region. Adjuvant radiotherapy may be considered to improve the local control. Future research may demarcate the role of targeted therapy for patients

with malignant peripheral nerve sheath tumour.

PMCID: PMC3976929

PMID: 24744936 [PubMed]

89: Sankar J, Sankar MJ. The authors reply. *Pediatr Crit Care Med*. 2014 Mar;15(3):288. doi: 10.1097/PCC.0000000000000082. PubMed PMID: 24608510.

Comment on

Pediatr Crit Care Med. 2013 Sep;14(7):734-5.

Pediatr Crit Care Med. 2014 Mar;15(3):286-7.

PMID: 24608510 [PubMed - in process]

90: Sankhyan N, Sharma S, Konanki R, Gulati S. Childhood Guillain-Barré syndrome subtypes in northern India. *J Clin Neurosci*. 2014 Mar;21(3):427-30. doi: 10.1016/j.jocn.2013.04.030. Epub 2013 Oct 13. PubMed PMID: 24128771.

This prospective cross-sectional study was conducted at a tertiary care research centre in North India to describe the frequency and clinical characteristics of subtypes of childhood Guillain-Barré syndrome. Among the 68 children enrolled, 65 were finally diagnosed with Guillain-Barré syndrome (median age, 60 months); 45 (69%) were boys. The most common subtype was acute motor axonal neuropathy in 27 patients (41.5%, 95% confidence interval [CI] 29-54), followed by acute inflammatory demyelinating polyneuropathy in 15 (23%, 95% CI 13.5-35), and acute motor sensory axonal neuropathy in three (4.6%, 95% CI 1-13). Twelve patients (18.5%, 95% CI 10-30) had inexcitable nerves, and eight (12.4%, 95% CI 5.5-23) were unclassifiable. Those with acute inflammatory demyelinating polyneuropathy were more likely to have had a preceding upper respiratory tract infection. The acute motor axonal neuropathy subtype peaked in incidence during the winter and monsoon months.

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PMID: 24128771 [PubMed - in process]

91: Saxena R, Phuljhele S, Menon V, Gadaginamath S, Sinha A, Sharma P. Clinical profile and short-term outcomes of optic neuritis patients in India. *Indian J Ophthalmol*. 2014 Mar;62(3):265-7. doi: 10.4103/0301-4738.121131. PubMed PMID: 24722269.

Purpose: To evaluate the clinical profile and short-term visual outcome of optic neuritis (ON) patients in India. **Materials and Methods:** In this prospective study carried out over a period of 3 years, 99 eyes of 83 ON patients were examined and followed up for 10.8 ± 8.2 months for type of presentation, recurrence rate, and visual outcome. **Results:** Mean age was 27.6 ± 8.8 years. Female preponderance was seen (70% of cases). Papillitis (53.5% of eyes) was more common than retrobulbar neuritis (46.5% of eyes). Bilateral presentation was seen in 19.3% cases. Baseline median logMAR visual acuity (VA) was 1.6 ± 0.8 , which improved to 0.2 ± 0.6 , with approximately 64% of eyes retaining VA of 20/40 or more. Two patients had previous diagnosis of multiple sclerosis (MS). MS was newly diagnosed in two patients. Recurrence was seen in 16% of eyes and was more common in cases of retrobulbar neuritis. **Conclusion:** The clinical profile of ON in Indian patients is different from that in the Western population. Unlike reported in the Western literature, papillitis is frequent in the Indian setup, with lower recurrence rates but poorer outcomes.

PMID: 24722269 [PubMed - in process]

92: Saxena R, Muthukkumaran S, Kumar S, Talwar S, Choudhary SK. Migrated Kirschner wire in the posterior mediastinum. *Heart Lung Circ.* 2014 Mar;23(3):e109-10. doi: 10.1016/j.hlc.2013.09.011. Epub 2013 Oct 18. PubMed PMID: 24200982.

93: Sehgal R, Gulati S, Sapra S, Tripathi M, Kabra M, Pandey RM. Neurodevelopmental and epilepsy outcome in children aged one to five years with infantile spasms--a North Indian cohort. *Epilepsy Res.* 2014 Mar;108(3):526-34. doi: 10.1016/j.epilepsyres.2013.12.009. Epub 2013 Dec 30. PubMed PMID: 24439210.

PURPOSE: The present study was planned as there is paucity of outcome data of children with infantile spasms, from India where profile of patients is different from the western world. Moreover, most previous studies have either not used strict inclusion criteria or standardized psychometric tests for developmental outcome.

METHODS: Ninety-five children, aged one-to-five years under follow up for more than six months in Pediatric Neurology Clinic of a tertiary care hospital with the diagnosis of infantile spasm were enrolled in this cross-sectional study if they had completed one or more years after the onset of spasms. The study period was January-December 2011. Neurodevelopment of each child was assessed using Development Profile 3 and Gross Motor Function Classification System. History regarding epilepsy frequency and control in the last one year was taken.

RESULTS: Perinatal asphyxia was the commonest etiology in 43/95 children (45.2%). Favorable neurodevelopmental outcome was observed in 8/95 patients. Favorable epilepsy outcome in 58/95 (61.1%) patients was associated with treatment lag \leq 3 months between apparent onset of spasms and institution of therapy {OR 2 (1.1-3.8)} and response to first line antiepileptic drug {5 (2.6-10)}.

CONCLUSIONS: The commonest etiology was potentially preventable perinatal cause. Early appropriate treatment may have a favorable epilepsy outcome.

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PMID: 24439210 [PubMed - in process]

94: Sharawat SK, Bakhshi R, Vishnubhatla S, Gupta R, Bakhshi S. FLT3-ITD mutation in relation to FLT3 expression in pediatric AML: a prospective study from India. *Pediatr Hematol Oncol.* 2014 Mar;31(2):131-7. doi: 10.3109/08880018.2013.870624. Epub 2014 Feb 5. PubMed PMID: 24498869.

There is lack of data with regard to FLT3 expression in FLT3-ITD positive pediatric AML patients. Further, FLT3-ITD has not been systematically analyzed for outcome from Indian subcontinent. Amongst 64 consecutive pediatric AML patients, FLT3-ITD was present in 12 (19%) patients. All patients with FLT3-ITD achieved CR; those with FLT3-ITD mutation had inferior DFS ($P = .029$). FLT3 expression by flow-cytometry was observed in all FLT3-ITD positive patients, whereas 40/52 (77%) FLT3-ITD negative patients expressed FLT3 ($P = .06$). FLT3 expression in 12 FLT3-ITD positive patients was unable to show an association between FLT3 expression and outcome. In FLT3-ITD negative patients, higher surface expression of FLT3 significantly predicted poor EFS ($P = .001$) and OS ($P = .007$).

PMID: 24498869 [PubMed - in process]

95: Sharma DN, Chaudhari P, Sharma S, Gupta L, Jagadesan P, Rath GK, Julka PK. Comparison of high-dose-rate intracavitary brachytherapy dosimetry with and without anesthesia in patients with cervical carcinoma. *J Appl Clin Med Phys.*

2014 Mar 6;15(2):4670. doi: 10.1120/jacmp.v15i2.4670. PubMed PMID: 24710456.

This study compares the dosimetry of high-dose-rate intracavitary brachytherapy (HDR-ICBT) performed with and without general anesthesia/spinal anesthesia (GA/SA) in patients with cervical carcinoma. We retrospectively retrieved the records of 138 HDR-ICBT applicator insertions performed in 46 patients: 69 performed with GA/SA (anesthesia group known as AG) in 23 patients, and 69 performed without GA/SA (nonanesthesia group known as NAG) in 23 patients. The intracavitary brachytherapy (ICBT) application was done with central tandem and two vaginal ovoids. For each ICBT plan, a high-dose-rate (HDR) dose of 7 Gy was prescribed to point A. From each plan, the doses to Point B right (BR), Point B left (BL), bladder and rectal reference points (Bladderref and Rectalref) were recorded and compared in the two groups. Student's t-test was applied to find out the significance of difference. The two groups were comparable in terms of demography and clinical characteristics. Mean Point BL doses in AG and NAG were 1.89 Gy (27% of Point A dose) and 1.82 Gy (26% of Point A dose), respectively. Mean Point BR doses in AG and NAG were 1.91 Gy (27% of Point A dose) and 1.85 Gy (26% of pointA), respectively (p-value 0.7). The mean dose to Bladderref in AG and NAG was 5.03Gy and 4.90 Gy, respectively (p-value 0.6). The mean dose to Rectalref was significantly higher in AG than NAG (5.09 Gy vs. 4.49 Gy, p-value 0.01). Although based on conventional 2D dosimetry planning, our study has demonstrated that avoiding GA/SA does not result in inferior HDR-ICBT dosimetry.

PMID: 24710456 [PubMed - in process]

96: Sharma N, Roy S, Maharana PK, Sehra SV, Sinha R, Tandon R, Titiyal JS, Vajpayee RB. Outcomes of corneal collagen crosslinking in pseudophakic bullous keratopathy. *Cornea*. 2014 Mar;33(3):243-6. doi: 10.1097/ICO.0000000000000004. PubMed PMID: 24452209.

PURPOSE: The aim was to evaluate the outcomes of corneal collagen crosslinking (CXL) in symptomatic pseudophakic bullous keratopathy (PBK).
METHODS: In a retrospective noncomparative, interventional case series, we reviewed the records of 50 eyes (50 patients) with symptomatic PBK who underwent CXL. Central corneal thickness (CCT), pain score, best corrected visual acuity (BCVA), and corneal transparency were recorded at baseline; at day 7, day 15; and 1, 3, and 6 months after the CXL.
RESULTS: The mean pain score decreased from 8.1 ± 0.6 at presentation to 2.1 ± 0.7 on day 7 ($P = 0.0001$). A subsequent regression was seen in pain scores over 6 months (5.3 ± 1.5). The mean CCT decreased from a preoperative value of 724.8 ± 78.4 to 694.9 ± 77.9 μm by the end of the first month ($P = 0.0001$). The CCT remained stable at subsequent follow-up. The BCVA improved from logarithm of the minimum angle of resolution (log MAR) 2.0 ± 0.5 preoperatively to log MAR 1.8 ± 0.5 by the end of the first month ($P = 0.001$). The subsequent follow-up showed a progressive deterioration in the BCVA to the preoperative levels at 6 months. Corneal bullae recurred in 44% (22 eyes) at 6 months after an initial disappearance. A significant improvement in the BCVA and a lack of recurrence of bullae were significantly associated with a thinner CCT on presentation.
CONCLUSIONS: CXL in symptomatic PBK temporarily improves pain without providing long-term improvement in the BCVA. Case selection is important with more effect seen in patients with a thinner CCT at presentation.

PMID: 24452209 [PubMed - in process]

97: Sharma P, Singh H, Dhull VS, Suman KC S, Kumar A, Bal C, Kumar R. Adrenal masses of varied etiology: anatomical and molecular imaging features on PET-CT. *Clin Nucl Med*. 2014 Mar;39(3):251-60. doi: 10.1097/RLU.0b013e3182a77c72. PubMed

PMID: 24217551.

A wide spectrum of benign and malignant diseases can present as an adrenal mass. Combined PET-CT is useful for evaluation of adrenocortical and adrenomedullary masses. F-FDG has been extensively used as PET radiotracer for this purpose. F-FDOPA PET, Ga-DOTA peptide (Ga-DOTANOC/TATE) PET, and C-HED PET have also been used for imaging of adrenal medullary lesions, whereas C-MTO PET has been used for adrenocortical imaging. We provide a review of imaging characteristics of adrenal gland pathologies on PET-CT using different tracers.

PMID: 24217551 [PubMed - in process]

98: Sharma P, Dhull VS, Arora S, Gupta P, Kumar R, Durgapal P, Malhotra A, Chumber S, Ammini AC, Kumar R, Bal C. Diagnostic accuracy of (68)Ga-DOTANOC PET/CT imaging in pheochromocytoma. *Eur J Nucl Med Mol Imaging*. 2014 Mar;41(3):494-504. doi: 10.1007/s00259-013-2598-1. Epub 2013 Oct 25. PubMed PMID: 24158184.

PURPOSE: The purpose of the present study was to evaluate the diagnostic accuracy of (68)Ga-DOTANOC positron emission tomography (PET)/CT in patients with suspicion of pheochromocytoma.

METHODS: Data of 62 patients [age 34.3±16.1 years, 14 with multiple endocrine neoplasia type 2 (MEN2)] with clinical/biochemical suspicion of pheochromocytoma and suspicious adrenal lesion on contrast CT (n=70), who had undergone (68)Ga-DOTANOC PET/CT, were retrospectively analyzed. PET/CT images were analyzed visually as well as semiquantitatively, with measurement of maximum standardized uptake value (SUVmax), SUVmean, SUVmax/SUVliver, and SUVmean/SUVliver. Results of PET/CT were compared with (131)I-metaiodobenzylguanidine (MIBG) imaging, which was available in 40 patients (45 lesions). Histopathology and/or imaging/clinical/biochemical follow-up (minimum 6 months) was used as reference standard.

RESULTS: The sensitivity, specificity, and accuracy of (68)Ga-DOTANOC PET/CT was 90.4, 85, and 88.7%, respectively, on patient-based analysis and 92, 85, and 90%, respectively, on lesion-based analysis. (68)Ga-DOTANOC PET/CT showed 100% accuracy in patients with MEN2 syndrome and malignant pheochromocytoma. On direct comparison, lesion-based accuracy of (68)Ga-DOTANOC PET/CT for pheochromocytoma was significantly higher than (131)I-MIBG imaging (91.1 vs 66.6%, p=0.035). SUVmax was higher for pheochromocytomas than other adrenal lesions (p=0.005), MEN2-associated vs sporadic pheochromocytoma (p=0.012), but no difference was seen between benign vs malignant pheochromocytoma (p=0.269).

CONCLUSION: (68)Ga-DOTANOC PET/CT shows high diagnostic accuracy in patients with suspicion of pheochromocytoma and is superior to (131)I-MIBG imaging for this purpose. Best results of (68)Ga-DOTANOC PET/CT are seen in patients with MEN2-associated and malignant pheochromocytoma.

PMID: 24158184 [PubMed - in process]

99: Sharma S, Jain P, Gulati S, Sankhyan N, Agarwala A. Use of the Modified Atkins Diet in Lennox Gastaut Syndrome. *J Child Neurol*. 2014 Mar 20. [Epub ahead of print] PubMed PMID: 24659735.

There is scanty data regarding the efficacy and tolerability of the modified Atkins diet in children with Lennox-Gastaut syndrome. This study was a retrospective review of children with Lennox-Gastaut syndrome treated with the modified Atkins diet from May 2009 and March 2011. The diet was initiated in those children who persisted to have daily seizures despite the use of at least 3 appropriate antiepileptic drugs. Twenty-five children were started on a modified

Atkins diet, restricting carbohydrate intake to 10 g/d. After 3 months, 2 patients were seizure-free, and 10/25 children had >50% reduction in seizure frequency. At 6 months, of 11 patients on the diet, 3 were seizure free and 8 had >50% reduction in seizure frequency. At 1 year, all 9 children on diet had >50% reduction in seizure frequency. The side effects of the diet were mild. The modified Atkins diet was found to be effective and well tolerated in children with Lennox-Gastaut syndrome.

PMID: 24659735 [PubMed - as supplied by publisher]

100: Sharma S, Nag TC, Thakar A, Bhardwaj DN, Roy TS. The aging human cochlear nucleus: Changes in the glial fibrillary acidic protein, intracellular calcium regulatory proteins, GABA neurotransmitter and cholinergic receptor. *J Chem Neuroanat.* 2014 Mar;56:1-12. doi: 10.1016/j.jchemneu.2013.12.001. Epub 2014 Jan 7. PubMed PMID: 24412669.

The human auditory system is highly susceptible to environmental and metabolic insults which further affect the biochemical and physiological milieu of the cells that may contribute to progressive, hearing loss with aging. The cochlear nucleus (CN) is populated by morphologically diverse types of neurons with discrete physiological and neurochemical properties. Between the dorsal and the ventral cochlear nucleus (DCN and VCN), the VCN is further sub-divided into the rostral (rVCN) and caudal (cVCN) sub-divisions. Although, information is available on the age related neurochemical changes in the mammalian CN similar reports on human CN is still sparse. The morphometry and semiquantitative analysis of intensity of expression of glial fibrillary acidic protein (GFAP), calcium binding proteins (calbindin, calretinin and parvalbumin), gamma amino butyric acid (GABA) and nicotinic acetyl choline receptor (nAChR) beta 2 immunostaining were carried out in all three sub-divisions of the human CN from birth to 90 years. There was increased GFAP immunoreactivity in decades 2 and 3 in comparison to decade 1 in the CN. But no change was observed in rVCN from decade 4 onwards, whereas intense staining was also observed in decades 5 and 6 in cVCN and DCN. All three calcium binding proteins were highly expressed in early to middle ages, whereas a significant reduction was found in later decades in the VCN. GABA and nAChR beta 2 expressions were unchanged throughout in all the decades. The middle age may represent a critical period of onset and progression of aging changes in the CN and these alterations may add to the deterioration of hearing responses in the old age.

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PMID: 24412669 [PubMed - in process]

101: Sharma SC, Sagar P, Kumar R, Durgapal P. Isolated metastatic papillary thyroid carcinoma masquerading as parapharyngeal space paraganglioma. *Singapore Med J.* 2014 Mar;55(3):e42-5. PubMed PMID: 24664393.

Isolated metastatic deposits of papillary thyroid carcinoma to the parapharyngeal space are rare. Herein, we describe the case of a young woman who presented with a right-sided oropharyngeal mass that was initially diagnosed as a parapharyngeal space paraganglioma. The patient opted for conservative treatment as she was asymptomatic and wished to avoid the risk of neurovascular morbidity associated with surgery. After 20 years, the patient sought treatment again for the oropharyngeal mass, which had progressively increased in size and was causing difficulty in swallowing. Repeat imaging of the affected area revealed that the mass had increased significantly in size; it also revealed the presence of a previously absent small lesion in the right lobe of the thyroid. Excision of the parapharyngeal space tumour and near-total thyroidectomy were performed; the

excised specimens showed features of the follicular variant of papillary thyroid carcinoma. As papillary thyroid carcinoma that metastasises to the parapharyngeal space can masquerade as a paraganglioma, clinicians should bear in mind that an isolated metastatic deposit in the parapharyngeal space could be the first sign of occult papillary thyroid carcinoma.

PMID: 24664393 [PubMed - in process]

102: Sharma SK, Singh PK, Seth T, Mishra P, Mahapatra M. Antithymocyte globulin induced recurrent seizures in a case of severe aplastic anemia. *Indian J Hematol Blood Transfus.* 2014 Mar;30(1):70-1. doi: 10.1007/s12288-012-0183-6. Epub 2012 Aug 21. PubMed PMID: 24554831; PubMed Central PMCID: PMC3921336.

Antithymocyte globulin (ATG) has been the standard immuno suppressive therapy for aplastic anemia. ATG significantly improves survival and response rates vary between 40 and 70 %. Mild side effects are common but recurrent seizures have rarely been reported with ATG.

PMCID: PMC3921336 [Available on 2015/3/1]

PMID: 24554831 [PubMed]

103: Sharma SK, Kumar S, Singh AK, Seth T, Mishra P, Sharma S, Mahapatra M. Diffuse alveolar hemorrhage following allogeneic peripheral blood stem cell transplantation: a case report and a short review. *Indian J Hematol Blood Transfus.* 2014 Mar;30(1):41-4. doi: 10.1007/s12288-012-0184-5. Epub 2012 Aug 21. PubMed PMID: 24554821; PubMed Central PMCID: PMC3921334.

Pulmonary complications are one of the most common causes of morbidity and mortality in patients undergoing peripheral blood stem cell transplantation. Both infective and non-infective etiologies can involve the lungs during this period and differentiating them clinically is a challenging task and management differs in each case. We present here a case of acute myeloid leukemia, in whom following allogeneic peripheral blood stem cell transplantation, diffuse alveolar hemorrhage developed.

PMCID: PMC3921334 [Available on 2015/3/1]

PMID: 24554821 [PubMed]

104: Sharma VK, Singh S, Ramam M, Kumawat M, Kumar R. A randomized placebo-controlled double-blind pilot study of methotrexate in the treatment of H1 antihistamine-resistant chronic spontaneous urticaria. *Indian J Dermatol Venereol Leprol.* 2014 Mar-Apr;80(2):122-8. doi: 10.4103/0378-6323.129382. PubMed PMID: 24685847.

Background: Chronic urticaria not responsive to antihistamines is a difficult disease to manage. Methotrexate has been used in difficult chronic urticarias with some benefit. **Objective:** To evaluate the efficacy of methotrexate in the treatment of chronic spontaneous urticaria poorly responsive to H1 antihistaminics. **Methods:** In a randomized double-blind trial at the Department of Dermatology and Venereology of a tertiary care centre, 29 patients with chronic spontaneous urticaria not responding well to H1 antihistaminics were recruited. Patients were randomly allocated to receive either a weekly dose of oral methotrexate 15 mg or placebo (calcium carbonate) for a total duration of 12 weeks, after which treatment was stopped and patients were followed up for relapse of urticaria. Each group also received levocetirizine 5 mg once daily for symptom control. Primary outcome measured was a reduction by >2/3 rd of baseline urticaria scores after 12 week therapy. Secondary outcome was a reduction in antihistamine requirement after stopping therapy. **Results:** Fourteen patients were

randomized to the methotrexate group and fifteen patients to the placebo group. Out of 17 patients who completed therapy, the primary outcome was achieved by 3.5 ± 1.9 (out of 10) patients in the methotrexate group and by 3.67 ± 1.03 (out of 7) patients in the placebo group ($P > 0.05$). Ten patients followed up, after stopping therapy, for a mean period of 3.5 ± 2.4 months; 3 remained in remission and 7 had relapsed. One patient had uncontrollable nausea and vomiting after taking methotrexate and was withdrawn from the study. The placebo group did not experience any side effects. Conclusions: Methotrexate 15 mg weekly for 3 months did not provide any additional benefit over H1 antihistamines in this study but an adequately powered study with longer follow up is required to assess its utility.

PMID: 24685847 [PubMed - in process]

105: Shetkar SS, Gupta SK, Gulati GS, Juneja R. Right Superior Vena Cava to Left Atrium: Importance of "Bubbling It Right". *Echocardiography*. 2014 Mar 19. doi: 10.1111/echo.12562. [Epub ahead of print] PubMed PMID: 24640985.

106: Shimony A, Grandi SM, Pilote L, Joseph L, O'Loughlin J, Paradis G, Rinfret S, Sarrafzadegan N, Adamjee N, Yadav R, Gamra H, Diodati JG, Eisenberg MJ; ZESCA Investigators. Utilization of evidence-based therapy for acute coronary syndrome in high-income and low/middle-income countries. *Am J Cardiol*. 2014 Mar 1;113(5):793-7. doi: 10.1016/j.amjcard.2013.11.024. Epub 2013 Dec 12. PubMed PMID: 24440324.

Limited data exist regarding the management of patients with acute coronary syndrome (ACS) in high-income countries compared with low/middle-income countries. We aimed to compare in-hospital trends of revascularization and prescription of medications at discharge in patients with ACS from high-income (Canada and United States) and low/middle-income (India, Iran, Pakistan, and Tunisia) countries. Data from a double-blind, placebo-controlled, randomized trial investigating the effect of bupropion on smoking cessation in patients after an enzyme-positive ACS was used for our study. A total of 392 patients, 265 and 127 from high-income and from low/middle-income countries, respectively, were enrolled. Patients from high-income countries were older, and were more likely to have diagnosed hypertension and dyslipidemia. During the index hospitalization, patients from high-income countries were more likely to be treated by percutaneous coronary intervention (odds ratio [OR] 19.7, 95% confidence interval [CI] 10.5 to 37.0). Patients with ST elevation myocardial infarction from high-income countries were more often treated by primary percutaneous coronary intervention (OR 16.3, 95% CI 6.3 to 42.3) in contrast with thrombolytic therapy (OR 0.24, 95% CI 0.14 to 0.41). Patients from high-income countries were also more likely to receive evidence-based medications at discharge (OR 2.32, 95% CI 1.19 to 4.52, a composite of aspirin, clopidogrel, and statin). In conclusion, patients with ACS in low/middle-income countries were less likely to be revascularized and to receive evidence-based medications at discharge. Further studies are needed to understand the underutilization of procedures and evidence-based medications in low/middle-income countries.

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PMID: 24440324 [PubMed - indexed for MEDLINE]

107: Singh A, Gaur P, Shukla N, Das S. Differential dendritic cell-mediated activation and functions of invariant NKT-cell subsets in oral cancer. *Oral Dis*. 2014 Mar 22. doi: 10.1111/odi.12238. [Epub ahead of print] PubMed PMID: 24654917.

OBJECTIVES: Invariant natural killer T (iNKT) cells are unique subset of glycolipid-reactive T lymphocytes with potent antitumour characteristics. This study was planned to understand Th-like cytokine profiles of iNKT-cell subsets and modulation of their functions in response to glycolipid ligand and tumour cell lysate (TL).

SUBJECTS AND METHODS: Cytokine profile of iNKT-cell subsets was evaluated from the peripheral blood of eight oral squamous cell carcinoma (OSCC) patients by flow cytometry and enzyme-linked immunosorbent assay (ELISA), while antitumour activity of iNKT cells was measured by methyl tetrazolium salt assay.

RESULTS: CD4(+) (CD4(+) CD8(-)) iNKT subset from OSCC patients showed significant ($P < 0.01$) expansion and higher IL-4 production following activation with α -GalCer-pulsed DCs, while CD4(-) CD8(-) double negative (DN) and CD8(+) (CD4(-) CD8(+)) iNKT subsets produced IFN- γ predominantly. iNKT cells showed significantly ($P = 0.02$) increased secretion of IFN- γ and enhanced cytotoxicity to KB and SCC-4 tumour cells in response to α -GalCer and TL-pulsed DCs.

CONCLUSION: It appears that mutual balance/ratio of iNKT subsets may be important for their effector functions. Selectively expanded DN and CD8(+) iNKT cells with α -GalCer and TL may be a better candidate vaccine for iNKT-cell-based adoptive cancer immunotherapy.

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PMID: 24654917 [PubMed - as supplied by publisher]

108: Singh A, Vajpayee M, Ali SA, Chauhan NK. Cellular interplay among Th17, Th1, and Treg cells in HIV-1 subtype "C" infection. *J Med Virol.* 2014 Mar;86(3):372-84. doi: 10.1002/jmv.23810. Epub 2013 Nov 19. PubMed PMID: 24249618.

CD4 T cell depletion is central to HIV pathogenesis and disease progression. Different subsets of CD4 T cells cooperate to combat an infection. Therefore, the immune balance among Th17, Th1, and Treg cells may be critical in HIV immunopathogenesis which is not adequately defined yet. The impact of HIV-1 infection on the interplay of Th17/Th1/Treg cells in HIV-1 infected Indian individuals was examined in the present study and report that HIV-1 Gag specific peripheral blood Th17 cells were significantly depleted in late infected subjects, compared to early infected subjects and slow progressors. Although, the gradual loss of Th1 cells was also reported during HIV-1 disease progression but relative to Th17 cells, Th1 cells were found to be more resistant to HIV-1 infection. Additionally, a significant and progressive gain in Treg cellular frequency was observed as disease progress from early to late stage of HIV-1 infection. This study also indicate that slow progressors might have an intrinsic capacity to develop strong HIV-1 specific Th17 and Th1 cell responses contrasted with a faint Treg cellular performance signifies the importance of these cellular subsets in progressive versus nonprogressive HIV-1 infection. A significant gradual loss of Th17/Treg ratio was found to be associated with disease state, plasma viral load and immune activation.

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PMID: 24249618 [PubMed - in process]

109: Singh AK, Gaur P, Das SN. Natural killer T cell anergy, co-stimulatory molecules and immunotherapeutic interventions. *Hum Immunol.* 2014 Mar;75(3):250-60. doi: 10.1016/j.humimm.2013.12.004. Epub 2013 Dec 25. PubMed PMID: 24373798.

Natural killer T (NKT) cells are a unique subset of glycolipid-reactive T lymphocytes that share properties with natural killer (NK) cells. These lymphocytes can produce array of cytokines and chemokines that modulate the immune response, and play a pivotal role in cancer, autoimmunity, infection and inflammation. Owing to these properties, NKT cells have gained attentions for its potential use in antitumor immunotherapies. To date several NKT cell-based clinical trials have been performed in patients with cancer using its potent ligand α -galactosylceramide (α -GalCer). However, inconsistent therapeutic benefit, and inevitable health risks associated with drug dose and NKT cell activation have been observed. α -GalCer-activated NKT cells become anergic and produce both Th1 and Th2 cytokines that may function antagonistically, limiting the desired effector functions. Besides, various co-stimulatory and signaling molecules such as programmed death-1 (PD-1; CD279), casitas B-cell lymphoma-b (Cbl-b) and CARMA1 have been shown to be implicated in the induction of NKT cell anergy. In this review, we discuss the role of such key regulators and their functional mechanisms that may facilitate the development of improved approaches to overcome NKT cell anergy. In addition, we describe the evidences indicating that tailored-ligands can optimally activate NKT cells to obtain desired immune responses.

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PMID: 24373798 [PubMed - in process]

110: Singh N, Karmakar D, Devagorou V, Tiwari R, Kumar S. Obstetric considerations in a rare cardiovascular catastrophe needing multidisciplinary care. *Case Rep Vasc Med*. 2014;2014:278036. doi: 10.1155/2014/278036. Epub 2014 Mar 4. PubMed PMID: 24716093; PubMed Central PMCID: PMC3971495.

Cardiovascular emergencies especially aortic dissections are rare in pregnancy. We report a case of Stanford Type A aortic dissection at 33 weeks of pregnancy presenting in shock. Rapid multidisciplinary approach and special obstetric considerations led to a successful outcome in this case.

PMCID: PMC3971495

PMID: 24716093 [PubMed]

111: Singh P, Arora S, Makharia GK. Presence of anemia in patients with celiac disease suggests more severe disease. *Indian J Gastroenterol*. 2014 Mar;33(2):161-4. doi: 10.1007/s12664-013-0423-1. Epub 2013 Nov 19. PubMed PMID: 24243078.

Most of celiac disease (CeD) patients have anemia, and its diagnosis is seldom considered in the presence of normal hemoglobin. However, over the past few years, we have observed a few CeD patients having normal hemoglobin. Therefore, we reviewed our CeD database to find out what proportion of CeD patients had normal hemoglobin levels and if there were any differences in characteristics of those with and without anemia. Of 338 CeD patients, 14.8 % had normal hemoglobin levels at diagnosis. When compared with CeD patients without anemia, those with anemia had significantly longer duration of symptoms, lower albumin levels, and higher anti-tissue transglutaminase fold rise, and a higher proportion had abnormal d-xylose tests and severe villous abnormalities. Thus, CeD patients with anemia had more severe disease than those without anemia. It is therefore important to diagnose these patients at an earlier stage of the disease even when the classical feature such as anemia is not clinically evident.

PMID: 24243078 [PubMed - in process]

112: Singh R, Sharma MC, Sarkar C, Singh M, Chauhan SS. Transcription factor C/EBP- β mediates downregulation of dipeptidyl-peptidase III expression by interleukin-6 in human glioblastoma cells. *FEBS J.* 2014 Mar;281(6):1629-41. doi: 10.1111/febs.12728. Epub 2014 Feb 17. PubMed PMID: 24472318.

Dipeptidyl-peptidase III (DPP III) is a cytosolic metallo-aminopeptidase implicated in various physiological and pathological processes. A previous study from our laboratory indicated an elevated expression of DPP III in glioblastoma (U87MG) cells. In the present study we investigated the role of interleukin-6 (IL-6), a pleiotropic cytokine produced by glial tumors, in the regulation of DPP III expression. Immunohistochemistry, western blotting and quantitative RT-PCR were used for quantitation of DPP III and IL-6 in human glioblastoma cells and tumors. Cell transfections and DPP III promoter reporter assays were performed to study the transcriptional regulation of DPP III by IL-6. Promoter deletion analysis, site directed mutagenesis, chromatin immunoprecipitation assays and small interfering RNA (siRNA) technology was employed to elucidate the molecular mechanism of IL-6 mediated regulation of DPP III expression in glioblastoma cells. Our results for the first time demonstrate a negative correlation ($r = 0.632$, $P = 0.01$) between DPP III and IL-6 in both human tumors and cultured glioblastoma cells. Treatment of U87MG cells with IL-6 significantly decreased DPP III expression with a concomitant increase in the levels of transcription factor CCAAT/enhancer binding protein beta (C/EBP- β). Deletion/mutagenesis of C/EBP- β binding motif of DPP III promoter significantly increased its activity and abolished its responsiveness to IL-6. This effect could also be mimicked by C/EBP- β siRNA. In conclusion our study for the first time demonstrates C/EBP- β mediated transcriptional downregulation of DPP III by IL-6. Our results demonstrating a negative correlation between IL-6 and DPP III taken together with the previously reported prognostic significance of this cytokine in glioblastoma suggests that DPP III may prove useful as a prognostic marker.

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PMID: 24472318 [PubMed - in process]

113: Singh S, Moksha L, Sharma N, Titiyal JS, Biswas NR, Velpandian T. Development and evaluation of animal models for sex steroid deficient dry eye. *J Pharmacol Toxicol Methods.* 2014 Mar 13;70(1):29-34. doi: 10.1016/j.vascn.2014.03.004. [Epub ahead of print] PubMed PMID: 24632522.

Purpose: The present study was conducted to develop animal models to mimic postmenopausal/androgen deficiency dry eye and to evaluate the expression of sex steroid receptors (NR3A1, NR3A2 and NR3C4) in the ocular tissues of the developed models. **Methods:** The study was conducted in healthy Wistar rats of either sex weighing 180-250g. Bilateral ovariectomy was performed in female rats and oral finasteride (dose of 1.16mg/kg/day) challenge was given to both male and female rats. Along with time tear film stability was assessed by using cotton thread method and tear breakup time (TBUT). Dew point calculation was done using August-Roche-Magnus approximation during the tear assessments to correlate environmental factors affecting the tear function tests. At the end, animals were sacrificed and ocular tissues (lacrimal gland and cornea) were subjected for the quantification of the expression of NR3A1 (ER- α), NR3A2 (ER- β) and androgen (NR3C4) receptors. **Results:** The impact of ovariectomy caused a significant tear film deficiency from the 20th day onwards in all female rats. The ten day finasteride administration also showed a significant tear film deficiency in both male and female rats. However, subjecting 60days post ovariectomy rats to finasteride challenge did not show any further decrease in tear flow. Gene expression analysis also revealed a significant downregulation of sex steroid

receptors in ocular tissues after ovariectomy and finasteride challenge. Discussion and conclusion: From this study, it has been concluded that ovariectomized and finasteride treated antiandrogenic models produced a significant tear deficiency in the rats which can be explored for pharmacological screening of topical agents and understanding the disease process in postmenopausal and androgen deficiency dry eye disorders.

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PMID: 24632522 [PubMed - as supplied by publisher]

114: Singh S, Munawwar A, Rao S, Mehta S, Hazarika NK. Serologic prevalence of *Toxoplasma gondii* in Indian women of child bearing age and effects of social and environmental factors. *PLoS Negl Trop Dis*. 2014 Mar 27;8(3):e2737. doi: 10.1371/journal.pntd.0002737. eCollection 2014 Mar. PubMed PMID: 24675656; PubMed Central PMCID: PMC3967963.

BACKGROUND: Seroprevalence and incidence of toxoplasmosis in women of child bearing age has remained a contentious issue in the Indian subcontinent. Different laboratories have used different patient recruitment criteria, methods and variable results, making these data difficult to compare.

AIM: To map the point-prevalence and incidence of toxoplasmosis in India.

MATERIAL AND METHODS: In this cross-sectional study, a total of 1464 women of fertile age were recruited from 4 regions using similar recruitment plans. This included women from northern (203), southern (512), eastern (250) and western (501) regions of India. All samples were transported to a central laboratory in Delhi and tested using VIDAS technology. Their age, parity, eating habits and other demographic and clinical details were noted.

RESULTS: Most women were in the 18-25 years age group (48.3%), followed by 26-30 years (28.2%) and 31-35 years (13.66). Few (45) women older than 35 yr. were included. Overall prevalence of anti-*Toxoplasma* IgG antibodies was seen in 22.40%, with significantly more in married women (25.8%) as compared to single women (4.3%). Prevalence increased steadily with age: 18.1% in the 18-25 yr. age group to 40.5% in women older than 40 yr. The prevalence was high (66%) in those who resided in mud houses. Region-wise, the highest prevalence was observed in South India (37.3%) and the lowest (8.8%) in West Indian women. This difference was highly significant ($P < 0.001$). Prevalence was 21.2% in East India and 19.7% in North India. The IgM positivity rate ranged from 0.4% to 2.9% in four study centers.

CONCLUSIONS: This pan-India study shows a prevalence rate of 22.4% with a wide variation in four geographical regions ranging from as low as 8.8% to as high as 37.3%. The overall IgM positivity rate was 1.43%, indicating that an estimated 56,737-176,882 children per year are born in India with a possible risk of congenital toxoplasmosis.

PMCID: PMC3967963

PMID: 24675656 [PubMed - in process]

115: Singla V, Pratap Mouli V, Garg SK, Rai T, Choudhury BN, Verma P, Deb R, Tiwari V, Rohatgi S, Dhingra R, Kedia S, Sharma PK, Makharia G, Ahuja V. Induction with NCB-02 (curcumin) enema for mild-to-moderate distal ulcerative colitis - a randomized, placebo-controlled, pilot study. *J Crohns Colitis*. 2014 Mar;8(3):208-14. doi: 10.1016/j.crohns.2013.08.006. Epub 2013 Sep 5. PubMed PMID: 24011514.

BACKGROUND AND AIMS: Curcumin, an active ingredient of turmeric with anti-inflammatory properties, has been demonstrated to be useful in experimental models of ulcerative colitis (UC). It's efficacy in humans needs to be investigated.

METHODS: A randomized, double-blind, single-centre pilot trial was conducted in patients with distal UC (<25 cm involvement) and mild-to-moderate disease activity. Forty-five patients were randomized to either NCB-02 (standardized curcumin preparation) enema plus oral 5-ASA or placebo enema plus oral 5-ASA. Primary end point was disease response, defined as reduction in Ulcerative Colitis Diseases Activity Index by 3 points at 8 weeks, and secondary end points were improvement in endoscopic activity and disease remission at 8 weeks.

RESULTS: Response to treatment was observed in 56.5% in NCB-02 group compared to 36.4% ($p=0.175$) in placebo group. At week 8, clinical remission was observed in 43.4% of patients in NCB-02 group compared to 22.7% in placebo group ($p=0.14$) and improvement on endoscopy in 52.2% of patients in NCB-02 group compared to 36.4% of patients in placebo group ($p=0.29$). Per protocol analysis revealed significantly better outcomes in NCB-02 group, in terms of clinical response (92.9% vs. 50%, $p=0.01$), clinical remission (71.4% vs. 31.3%, $p=0.03$), and improvement on endoscopy (85.7% vs. 50%, $p=0.04$).

CONCLUSION: In this pilot study we found some evidence that use of NCB-02 enema may tend to result in greater improvements in disease activity compared to placebo in patients with mild-to-moderate distal UC. The role of NCB-02 as a novel therapy for UC should be investigated further.

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PMID: 24011514 [PubMed - in process]

116: Sinha A, Bajpai J, Saini S, Bhatia D, Gupta A, Puraswani M, Dinda AK, Agarwal SK, Sopory S, Pandey RM, Hari P, Bagga A. Serum-soluble urokinase receptor levels do not distinguish focal segmental glomerulosclerosis from other causes of nephrotic syndrome in children. *Kidney Int.* 2014 Mar;85(3):649-58. doi: 10.1038/ki.2013.546. Epub 2014 Jan 15. PubMed PMID: 24429405.

In this prospective study, we measured serum levels of the soluble urokinase receptor (suPAR) in pediatric patients with nephrotic syndrome of various etiologies. Mean levels of suPAR were 3316 pg/ml in 99 patients with steroid-resistant focal segmental glomerulosclerosis and 3253 pg/ml in 117 patients with biopsy-proven minimal change disease, which were similar to that of 138 patients with steroid-sensitive nephrotic syndrome (3150 pg/ml) and 83 healthy controls (3021 pg/ml). Similar proportions of patients in each group had suPAR over 3000 pg/ml. Compared with controls, suPAR levels were significantly higher in patients with focal segmental glomerulosclerosis (FSGS) and estimated glomerular filtration rate (eGFR) under 30 ml/min per 1.73 m² (6365 pg/ml), congenital nephrotic syndrome (4398 pg/ml), and other proteinuric diseases with or without eGFR under 30 ml/min per 1.73 m² (5052 and 3875 pg/ml, respectively; both significant). There were no changes following therapy and during remission. Levels of suPAR significantly correlated in an inverse manner with eGFR ($r=-0.36$) and directly with C-reactive protein ($r=0.20$). The urinary suPAR-to-creatinine ratio significantly correlated with proteinuria ($r=0.25$) in 151 patients and controls. Using generalized estimating equations approach, serum suPAR significantly correlated with eGFR (coefficient=-13.75), age at sampling (2.72), and C-reactive protein (39.85). Thus, serum suPAR levels in nephrotic syndrome are similar to controls, and do not discriminate between FSGS, minimal change disease, or steroid-responsive illness.

PMID: 24429405 [PubMed - in process]

117: Solanki S, Srinivas M, Sinha A, Mittal D, Mallick S, Agarwala S, Bhatnagar V. Histopathological Changes at Colonic Anastomotic Site after Ischemia Reperfusion Injury: Role of Aminoguanidine in Experimental Model. *Eur J Pediatr Surg*. 2014 Mar 28. [Epub ahead of print] PubMed PMID: 24683106.

Background Inducible nitric oxide synthase (iNOS) has a significant role in ischemia reperfusion (I-R) injury. I-R injury impairs the healing at the intestinal anastomotic site. This study was designed to assess the role of aminoguanidine (AG, a selective inhibitor of iNOS), in healing at the colonic anastomotic site after intestinal I-R injury in rats. Methods Female Wistar rats (n=60) were divided into three groups. Group I (n=15): sham operation, Group II (n=15): I-R injury and anastomosis, and Group III (n=30): I-R injury+anastomosis+AG-50 mg/kg. On the 7th postoperative day, relaparotomy was done and 4 cm of the colon with an intact area of the anastomosis was resected. Bursting pressure and histology at the anastomotic site were assessed. Results The bursting pressure was significantly higher in Group III. In addition, bridging parameters (i.e., mucosal continuity, muscular continuity, re-epithelization, and granulation tissue), collagen pattern, and collagen density were significantly better in Group III. While the polymorphonuclear density was higher in Group II, suggestive of delayed healing. Conclusion AG, by decreasing inflammation and increasing collagen content in an organized pattern, helped in preventing I-R injury at the site of colonic anastomosis in rats.

Georg Thieme Verlag KG Stuttgart · New York.

PMID: 24683106 [PubMed - as supplied by publisher]

118: Takkar B, Mehdi MU, Ahmed NR, Chandra P, Vanathi M. Anterior segment optical coherence tomography of live ocular cysticercosis. *Clin Experiment Ophthalmol*. 2014 Mar 28. doi: 10.1111/ceo.12339. [Epub ahead of print] PubMed PMID: 24674082.

119: Talwar S, Kumar MV, Choudhary SK, Airan B. Conventional versus adjustable pulmonary artery banding: which is preferable? *Interact Cardiovasc Thorac Surg*. 2014 Mar 6. [Epub ahead of print] PubMed PMID: 24608732.

A best evidence topic in cardiac surgery was written according to a structured protocol. The question addressed was 'whether conventional pulmonary artery banding (PAB) or adjustable PAB might be the superior intervention?' Using the PubMed search, 51 papers were found, of which seven papers represented the best evidence to answer the clinical question. We included only those papers that actually compared conventional PAB with adjustable PAB, and excluded those that studied only one of these interventions. Four studies qualified (one prospective and three retrospective) and analysed data in human patients, while three were experimental studies in animals. The end points in the prospective human study were death, debanding and follow-up to intracardiac repair. The three retrospective studies compared the incidence of early deaths, inotropic support, need for mechanical ventilatory support, reoperations and intensive care unit and hospital stay. Out of the four studies in humans, three studies noted a significant reduction in early deaths from 23 to 1.8%, 77 to 0% and 15 to 0% in conventional vs adjustable PAB. Need for early reoperations reduced from 18 to 3.5% and from 35 to 0% in 2 studies. Similarly, there was a reduction in the ventilatory times and the intensive care unit and hospital stay. The three experimental animal studies demonstrated that a much more reliable preparation of the ventricle was achieved with the use of an adjustable PAB. The results of all the seven studies led us to conclude that adjustable PAB provides superior early

outcomes; reduces early mortality, need for inotropes and need for reintervention; and provides equivalent or superior band gradients when compared to conventional PAB. The use of the adjustable PAB was found to result in significant haemodynamic improvement by progressively reducing the pulmonary artery pressures and left-to-right shunt. The adjustable PAB was found to improve early survival and also made delayed repair feasible in a better clinical state, with reduced mortality and morbidity.

PMID: 24608732 [PubMed - as supplied by publisher]

120: Talwar S, Kumar MV, Muthukkumaran S, Airan B. Is sternotomy superior to thoracotomy for modified Blalock-Taussig shunt? *Interact Cardiovasc Thorac Surg*. 2014 Mar;18(3):371-5. doi: 10.1093/icvts/ivt513. Epub 2013 Dec 13. PubMed PMID: 24336782; PubMed Central PMCID: PMC3930221.

A best evidence topic in cardiac surgery was written according to a structured protocol. The question addressed was: is sternotomy approach superior to a thoracotomy approach for a modified Blalock-Taussig shunt procedure? More than 58 papers were found using the search as described below, of which 11 papers represented the best evidence to answer the clinical question. The authors, journal, date and country of publication, patient group studied, study type, relevant outcomes and results of these papers are tabulated. Three of seven papers compared the sternotomy and thoracotomy approaches. The operative approach was a significant predictor of shunt failure. The criterion used to define early shunt failure was either the complete occlusion during hospitalization or the need to return to the operating room for a second shunt. The studies that compared the thoracotomy and sternotomy approaches observed increased shunt failure rates in the thoracotomy group. The sternotomy approach was associated with advantages like less pulmonary artery distortion, ease of technical performance, cosmetic advantage of a single sternotomy incision, ease of ligation of patent ductus, less phrenic nerve injury, less collateral formation in chest wall adhesions and less thoracotomy induced scoliosis. However, other papers studied either the sternotomy approach only or the thoracotomy approach and drew conclusions regarding risk factors for operative morbidity and mortality. We conclude that the sternotomy approach is beneficial to neonates and infants undergoing modified Blalock-Taussig shunt when compared with the conventional thoracotomy approach.

PMCID: PMC3930221 [Available on 2015/3/1]

PMID: 24336782 [PubMed - in process]

121: Titiyal JS, Khatik M, Sharma N, Sehra SV, Maharana PK, Ghatak U, Agarwal T, Khokhar S, Chawla B. Toric intraocular lens implantation versus astigmatic keratotomy to correct astigmatism during phacoemulsification. *J Cataract Refract Surg*. 2014 May;40(5):741-7. doi: 10.1016/j.jcrs.2013.10.036. Epub 2014 Mar 27. PubMed PMID: 24684966.

PURPOSE: To compare toric intraocular lens (IOL) implantation and astigmatic keratotomy (AK) in correction of astigmatism during phacoemulsification.

SETTING: Tertiary care hospital.

DESIGN: Prospective randomized trial.

METHODS: Consecutive patients with visually significant cataract and moderate astigmatism (1.25 to 3.00 diopters [D]) were randomized into 2 groups. Temporal clear corneal 2.75 mm phacoemulsification with toric IOL implantation was performed in the toric IOL group and with 30-degree coupled AK at the 7.0 mm optic zone in the keratotomy group. The uncorrected (UDVA) and corrected (CDVA) distance visual acuities, refraction, keratometry, topography, central corneal thickness, and endothelial cell density were evaluated preoperatively and 1 day,

1 week, and 1 and 3 months postoperatively.

RESULTS: The study enrolled 34 eyes (34 patients), 17 in each group. There was no difference in UDVA or CDVA between the 2 groups at any follow-up visit. The mean preoperative and postoperative refractive cylinder was $2.00 \text{ D} \pm 0.49$ (SD) and 0.33 ± 0.17 D, respectively, in the toric IOL group and 1.95 ± 0.47 D and 0.57 ± 0.41 D, respectively, in the keratotomy group ($P=.10$). The mean residual astigmatism at 3 months was 0.44 ± 1.89 @ 160 in the toric IOL group and 0.77 ± 1.92 @ 174 in the keratotomy group ($P=.61$). All eyes in the toric IOL group and 14 eyes (84%) in the keratotomy group achieved a residual refractive cylinder of 1.00 D or less ($P=.17$).

CONCLUSION: Toric IOL implantation was comparable to AK in eyes with moderate astigmatism having phacoemulsification.

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PMID: 24684966 [PubMed - in process]

122: Tuteja A, Siddiqui AB, Madan K, Goyal R, Shalimar, Sreenivas V, Kaur N, Panda SK, Narayanasamy K, Subodh S, Acharya SK. Mutation profiling of the hepatitis B virus strains circulating in North Indian population. *PLoS One*. 2014 Mar 17;9(3):e91150. doi: 10.1371/journal.pone.0091150. eCollection 2014. PubMed PMID: 24637457; PubMed Central PMCID: PMC3956465.

AIMS: The aim of this study was to investigate the genomic mutations in the circulating Hepatitis B virus strains causing infection in the Indian population. Further, we wanted to analyze the biological significance of these mutations in HBV mediated disease.

METHODS: 222 HBsAg positive patients were enrolled in the study. The genotype and mutation profile was determined for the infecting HBV isolate by sequencing overlapping fragments. These sequences were analyzed by using different tools and compared with previously available HBV sequence information. Mutation Frequency Index (MFI) for the Genes and Diagnosis group was also calculated.

RESULTS: HBV Genotype D was found in 55% ($n=121$) of the patient group and genotype A was found in 30% ($n=66$) of samples. The majority (52%) of the HBV-infected individuals in the present study were HBeAg-negative in all the age groups studied. Spontaneous drug associated mutations implicated in resistance to antiviral therapy were also identified in about quarter of our patients, which is of therapeutic concern. The MFI approach used in the study indicated that Core peptide was the most conserved region in both genotypes and Surface peptide had highest mutation frequency. Few mutations in X gene (T36A and G50R) showed high frequency of association with HCC. A rare recombinant strain of HBV genotype A and D was also identified in the patient group.

CONCLUSIONS: HBV genotype D was found out to be most prevalent. More than half of the patients studied had HBeAg negative disease. Core region was found to be most conserved. Drug Associated mutations were detected in 22% of the patient group and T36A and G50R mutations in X gene were found to be associated with HCC.

PMCID: PMC3956465

PMID: 24637457 [PubMed - in process]

123: Vanathi M, Kashyap S, Khan R, Seth T, Mishra P, Mahapatra M, Tandon R. Ocular surface evaluation in allogeneic hematopoietic stem cell transplantation patients. *Eur J Ophthalmol*. 2014 Mar 7:0. doi: 10.5301/ejo.5000451. [Epub ahead of print] 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.

PMID: 24604604 [PubMed - as supplied by publisher]

124: Venkatnarayan K, Sankar MJ, Deorari A, Krishnan A, Paul VK. A Micro-costing Model of Neonatal Intensive Care from a Tertiary Indian Unit: Feasibility and Implications for Insurance. *Indian Pediatr.* 2014 Mar 8;51(3):215-7. PubMed PMID: 24736910.

OBJECTIVE: To calculate and compare costs of neonatal intensive care by micro-costing and gross-costing methods.

METHODS: The costs of resources of a tertiary care neonatal intensive care unit were estimated by the two methods to arrive at specific costs per diagnosis related categories for 33 neonates followed-up prospectively.

RESULTS: Gross-costing as compared to micro-costing resulted in higher cost per bed (Rs 6315 vs. Rs 4969) and wide variations of costs (-34.8% to +13.4%). Intensity of interventions, relative stay in neonatal intensive care unit compared to the step-down nursery, and total length of hospital admission accounted for these variations.

CONCLUSION: Estimates based on micro-costing arrived in this study may be used as a starting point in developing assumptions for insurance models covering neonatal intensive care.

PMID: 24736910 [PubMed - in process]

125: Venkitaraman B, Karunanithi S, Kumar A, Bal C, Ammini AC, Kumar R. ^{68}Ga -DOTATOC PET-CT in the localization of source of ectopic ACTH in patients with ectopic ACTH-dependent Cushing's syndrome. *Clin Imaging.* 2014 Mar-Apr;38(2):208-11. doi: 10.1016/j.clinimag.2013.10.007. Epub 2013 Nov 7. PubMed PMID: 24332975.

Localization of the source of adrenocorticotrophic hormone (ACTH) in ectopic ACTH-induced Cushing's syndrome is of paramount importance as definitive management mainly involves surgical resection of tumor. Many of these are occult, not identified by conventional structural imaging. Accurate localization and assessment of their functional status has become feasible with the use positron emission tomography-computerized tomography using (^{68}Ga -DOTATOC (1,4,7,10-tetraazacyclododecane-NI,NII,NIII,NIIII-tetraacetic acid(D)-Phe1-thy3-octreotide), aiding in proper planning for their definitive

management.

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PMID: 24332975 [PubMed - in process]

126: Whitlock R, Teoh K, Vincent J, Devereaux PJ, Lamy A, Paparella D, Zuo Y, Sessler DI, Shah P, Villar JC, Karthikeyan G, Urrútia G, Alvezum A, Zhang X, Abbasi SH, Zheng H, Quantz M, Yared JP, Yu H, Noiseux N, Yusuf S. Rationale and design of the Steroids in Cardiac Surgery trial. *Am Heart J*. 2014 May;167(5):660-5. doi: 10.1016/j.ahj.2014.01.018. Epub 2014 Mar 1. PubMed PMID: 24766975.

BACKGROUND: Steroids may improve outcomes in high-risk patients undergoing cardiac surgery with the use of cardiopulmonary bypass (CBP). There is a need for a large randomized controlled trial to clarify the effect of steroids in such patients.

METHODS: We plan to randomize 7,500 patients with elevated European System for Cardiac Operative Risk Evaluation who are undergoing cardiac surgery with the use of CBP to methylprednisolone or placebo. The first coprimary outcome is 30-day all-cause mortality, and the most second coprimary outcome is a composite of death, MI, stroke, renal failure, or respiratory failure within 30 days. Other outcomes include a composite of MI or mortality at 30 days, new onset atrial fibrillation, bleeding and transfusion requirements, length of intensive care unit stay and hospital stay, infection, stroke, wound complications, gastrointestinal complications, delirium, postoperative insulin use and peak blood glucose, and all-cause mortality at 6 months.

RESULTS: As of October 22, 2013, 7,034 patients have been recruited into SIRS in 82 centers from 18 countries. Patient's mean age is 67.3 years, and 60.4% are male. The average European System for Cardiac Operative Risk Evaluation is 7.0 with 22.1% having an isolated coronary artery bypass graft procedure, and 66.1% having a valve procedure.

CONCLUSIONS: SIRS will lead to a better understanding of the safety and efficacy of prophylactic steroids for cardiac surgery requiring CBP.

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PMID: 24766975 [PubMed - in process]

127: Yadav R, Sharma MC, Malgulwar PB, Pathak P, Sigamani E, Suri V, Sarkar C, Kumar A, Singh M, Sharma BS, Garg A, Bakhshi S, Faruq M. Prognostic value of MIB-1, p53, epidermal growth factor receptor, and INI1 in childhood chordomas. *Neuro Oncol*. 2014 Mar;16(3):372-81. doi: 10.1093/neuonc/not228. Epub 2013 Dec 4. PubMed PMID: 24305715; PubMed Central PMCID: PMC3922519.

BACKGROUND: Chordomas are slow-growing tumors and most commonly involve the sacrum and clivus. Multiple recurrences are frequent. Childhood chordomas are rare and often show exceptionally aggressive behavior, resulting in short survival and a high incidence of metastatic spread.

OBJECTIVE: This study examined the histologic features and immunohistochemical profile of pediatric chordomas and compared them with their adult counterparts.

METHODS: Nine pediatric and 13 adult cases were included in the study. Childhood chordomas were classified into conventional, atypical, and poorly differentiated types. Immunohistochemistry was performed for cytokeratin, epithelial membrane antigen, vimentin, S100, brachyury, p53, INI1, epidermal growth factor receptor (EGFR), and CD117. Cytogenetic analyses were performed in a subset of tumors for SMARCB1/INI1 locus on 22q chromosome by fluorescent in situ hybridization (FISH)

and analysis of the SMARCB1/INI1 gene sequence.

RESULTS: All tumors showed expression of cytokeratin, epithelial membrane antigen, S100, vimentin, brachyury, and EGFR. Atypical morphology, p53 expression, higher MIB-1 labelling index (LI), and INI1 loss were more frequently seen in pediatric chordomas as compared with adults. None of the tumors showed CD117 expression. No point mutation in the SMARCB1/INI1 gene was noted in the tumors examined; however, 4 pediatric and 1 adult chordoma showed loss of this locus on FISH analysis.

CONCLUSIONS: A subset of pediatric chordomas with atypical histomorphologic features needs to be identified, as they behave in an aggressive manner and require adjuvant therapy. Pediatric chordomas more frequently show p53 expression, INI1 loss, and higher MIB-1 LI as compared with adults, whereas EGFR expression is common to both.

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