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List of publications of AIIMS, New Delhi
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1: Agarwal B, Pandey S, Roychoudhury A. New technique for closure of an oroantral fistula using platelet-rich fibrin. *Br J Oral Maxillofac Surg*. 2015 Dec 14. pii: S0266-4356(15)00710-X. doi: 10.1016/j.bjoms.2015.09.039. [Epub ahead of print] PubMed PMID: 26699819.

2: Agarwal N, Gupta M, Singh N, Kachhawa G, Kriplani A. Successful Management of Pregnancy in Uncorrected Tetralogy of Fallot with Pulmonary Atresia. *J Obstet Gynaecol India*. 2015 Dec;65(6):417-9. doi: 10.1007/s13224-015-0677-x. Epub 2015 Mar 26. PubMed PMID: 26664003; PubMed Central PMCID: PMC4666221.

3: Agarwal P, Kaul B, Shukla G, Srivastava A, Singh MB, Goyal V, Behari M, Suri A, Gupta A, Garg A, Gaikwad S, Bal CS. Lateralizing value of unilateral relative ictal immobility in patients with refractory focal seizures - Looking beyond unilateral automatisms. *Seizure*. 2015 Dec;33:66-71. doi: 10.1016/j.seizure.2015.08.009. Epub 2015 Sep 10. PubMed PMID: 26584452.

PURPOSE: Ictal motor phenomena play a crucial role in the localization of seizure focus in the management of refractory focal epilepsy. While the importance of unilateral automatisms is well established, little attention is paid to the contralateral relatively immobile limb. In cases where automatisms mimic clonic or dystonic movements and in the absence of previously well-established signs, unilateral relative ictal immobility (RII) is potentially useful as a lateralizing sign. This study was carried out to examine the lateralizing value of this sign and to define its characteristics among patients of refractory focal epilepsy.

METHODS: VEEGs of 69 consecutive patients of refractory focal epilepsy who had undergone epilepsy surgery at our center over last four years were reviewed and analyzed for the presence of RII. Unilateral RII was defined as a paucity of movement in one limb lasting for at least 10s while the contralateral limb showed purposive or semi-purposive movements (in the absence of tonic or dystonic posturing or clonic movements in the involved limb). The findings were seen in the light of VEEG, radiological and nuclear imaging data, and with post-surgical outcome.

RESULTS: Unilateral RII as a lateralizing sign was found in 24 of 69 patients (34.78%), consisting of both temporal and extra temporal epilepsy, with 100% concordance with VEEG and MRI data. All patients demonstrating this sign had a good post-surgical outcome.

CONCLUSION: RII, when well characterized is a frequent and reliable lateralizing sign in patients of refractory focal epilepsy.

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4: Agarwal S, Kumar T, Sharma MC, Damle NA, Gandhi AK. Parathyroid carcinoma with contralateral subcutaneous and breast recurrences: A rare presentation. *Head Neck*. 2015 Dec 21. doi: 10.1002/hed.24317. [Epub ahead of print] PubMed PMID: 26685878.

BACKGROUND: Parathyroid carcinoma is extremely rare. Correct preoperative and even histopathological diagnosis may be difficult owing to the deceptively bland cytoarchitectural features, especially when presenting with localized disease. Recurrence/metastases developing years later then make the malignant nature obvious.

METHODS AND RESULTS: We present here an unusual case of a 32-year-old patient with carcinoma of the left upper parathyroid gland, initially diagnosed as parathyroid adenoma, treated with endoscopic left parathyroidectomy, and later developing subcutaneous metastatic nodules over the medial end of the right clavicle and right anterior chest wall, followed by a right breast deposit. The recurrences, especially subcutaneous ones, were probably secondary to tumor

seeding along the track of insertion of the endoscope.

CONCLUSION: Involvement of subcutaneous tissue and the breast in parathyroid carcinoma is extremely rare. The case is being reported for its uniqueness along with a discussion of possible appropriate course of management, which may have averted the aggressive clinical course of the disease. © 2015 Wiley Periodicals, Inc. Head Neck, 2015.

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5: Agarwal S, Gahlot GP, Bhalla A, Bakhshi S. Small cell osteosarcoma of the parietal region: a unique case at an unusual site. *BMJ Case Rep.* 2015 Dec 1;2015. pii: bcr2015210086. doi: 10.1136/bcr-2015-210086. PubMed PMID: 26628304.

Small cell osteosarcoma is a rare tumour that histologically mimics Ewing sarcoma, mesenchymal chondrosarcoma and lymphoma, the presence of osteoid being diagnostic. This variant needs different management protocol, being non-radiosensitive and behaving more aggressively than conventional osteosarcoma. The aim of this article is to highlight such an entity at an unusual site-the parietal region-with unique diagnostic, treatment and prognostic considerations in a 16-year-old girl.

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6: Aggarwal S, Das SN. Garcinol inhibits tumour cell proliferation, angiogenesis, cell cycle progression and induces apoptosis via NF- κ B inhibition in oral cancer. *Tumour Biol.* 2015 Dec 12. [Epub ahead of print] PubMed PMID: 26662963.

Garcinol, a polyisoprenylated benzophenone is extracted from the rind of the fruit of *Garcinia indica*, a plant found extensively in tropical regions. Its ability to inhibit tumour growth has been demonstrated in certain cancers. In this study, we evaluated the potential anti-tumour effects of garcinol on oral squamous cell carcinoma (OSCC) cells. Three OSCC cell lines (SCC-4, SCC-9 and SCC-25) were treated with garcinol for 48 h and its effect on growth and proliferation, clonogenic survival, cell cycle and apoptosis was studied by MTT, clonogenic assay, propidium iodide (PI) staining and annexin-V binding assay, respectively. The alteration in expression of NF- κ B and COX-2 was studied by western blot analysis and that of VEGF by ELISA. Garcinol treatment significantly ($p < 0.001$) inhibited the growth and proliferation and colony formation of OSCC cells with a concomitant induction of apoptosis and cell cycle arrest. It did not show toxic effect on normal cells. It significantly ($p < 0.05$) reduced the expression of NF- κ B and COX-2 expression in treated cells as compared to untreated controls besides inhibiting VEGF expression. It appears that garcinol exerts anti-proliferative, pro-apoptotic, cell-cycle regulatory and anti-angiogenic effects on oral cancer cells through inhibition of NF- κ B and COX-2. Thus, garcinol may be developed as a potential chemopreventive and/or chemotherapeutic agent for treatment of oral squamous cell carcinoma.

7: Ahmed A, Bhatnagar S, Khurana D, Joshi S, Thulkar S. Ultrasound-Guided Radiofrequency Treatment of Intercostal Nerves for the Prevention of Incidental Pain Arising Due to Rib Metastasis: A Prospective Study. *Am J Hosp Palliat Care.* 2015 Dec 10. pii: 1049909115617933. [Epub ahead of print] PubMed PMID: 26656033.

BACKGROUND: Breakthrough pain (BTP) arising due to rib metastasis is very distressing and often very difficult to manage by titration of traditional analgesics. This study is undertaken to determine the efficacy of radiofrequency (RF) treatment of intercostal nerves for the prevention of BTP.

METHODS: The RF treatment of the intercostal nerves was carried out in 25 patients with uncontrolled BTP arising out of the rib metastasis. The intensity and episode of BTP, background pain, opioid dose, functional status (Karnofsky score), and quality of life (Short-Form Health Survey [SF-36]) were noted at baseline visit and subsequently after the RF treatment.

RESULTS: After the RF treatment, there was more than 50% decrease in both

intensity and frequency of BTP in more than 50% of patients for 3 months, and there was more than 50% decrease in BTP opioid dose in more than 50% of patients throughout the study period. There was also significant improvement in background pain, functional status, and the quality of life after the RF. Interestingly, pain relief, lowering of opioid dose, and functional status improvement were found mostly in patients with mixed and neuropathic type of pain and in patients in whom the metastasis were confined to the ribs only.

CONCLUSION: RF of the intercostal nerves is effective in preventing and decreasing the severity of BTP arising due to rib metastasis in selected group of patients with mixed and neuropathic type of pain and with the metastasis involving the ribs only.

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8: Ali A, Mishra PK, Sharma S, Arora A, Saluja SS. Effects of PTEN gene alteration in patients with gallbladder cancer. *Cancer Genet.* 2015 Dec;208(12):587-94. doi: 10.1016/j.cancergen.2015.09.007. Epub 2015 Sep 28. PubMed PMID: 26586294.

Gallbladder cancer (GBC) is an aggressive malignancy usually diagnosed in an advanced stage. We investigated the effects of alterations of the phosphatase and tensin homologue (PTEN) gene on the occurrence and development of GBC, which has not been previously reported. A total 141 cases of GBC were analyzed for mutation, expression, and methylation across the nine exons of the PTEN gene. DNA sequencing methods were applied for mutation detection, whereas protein expression and methylation status were evaluated by immunohistochemical and methylation-specific PCR analysis, respectively. Novel PTEN mutations were observed in 6.3% of cases (9/141), and they included two silent mutations. In mutant cases, according to changes in codons, the respective amino acid sequences were also changed, which caused of proteins. A high percentage (72%) of loss of protein expression was observed more often in cases than in control samples. Interestingly, all nine cases with mutations showed loss of PTEN expression, whereas four of these nine cases showed positive promoter methylation. Hypermethylation was significantly more common in older patients than in younger ones ($P < 0.02$). These findings suggest that PTEN mutations and inactivation may play an important role in the development and progression of gallbladder carcinoma.

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9: Ali J, Kumar S, Gautam S, Sorvari A, Misra MC. Improving Trauma Care in India: the Potential Role of the Rural Trauma Team Development Course (RTTDC). *Indian J Surg.* 2015 Dec;77(Suppl 2):227-31. doi: 10.1007/s12262-012-0775-2. Epub 2012 Dec 8. PubMed PMID: 26729998; PubMed Central PMCID: PMC4692915.

The Rural Trauma Team Development Course (RTTDC) was devised to optimize trauma resuscitation training in under-resourced rural institutions. This program appears ideal for India because of its dense traffic, large population, and high frequency of rural trauma. We report on the feasibility and desirability of introducing RTTDC in India. An instructor course for 20 faculties and a provider course for 23 were conducted in New Delhi, India. The courses were evaluated by multiple choice question (MCQ) performance, by rating the modules on a three-point scale (1 = very relevant, 2 = relevant, and 3 = not relevant) for communication skills, principles of performance improvement and patient safety (PIPS), and clinical scenarios. Evaluation questionnaires including desirability of promulgation in India were completed using a five-point Likert Scale (1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, and 5 = strongly disagree). Overall written comments were also provided. Both faculty and providers improved post-course MCQ scores ($p < 0.05$) with lower scores in the provider group. Seventy-eight percent faculty and 74 % providers rated the communication module very relevant. PIPS was rated very relevant by 72 % faculty and 65 % providers. There were over 150 comments, generally positive with over 90 % of both faculty

and providers rating strongly agree to agree that the course be promulgated widely in India. The RTTDC including plans for promulgation was enthusiastically received in India, and its potential for improving trauma care including communication skills and PIPS appears excellent.

10: Anjali G, Kaur S, Lakra R, Taneja J, Kalsey GS, Nagendra A, Shrivastav TG, Gouri Devi M, Malhotra N, Kriplani A, Singh R. FSH stimulates IRS-2 expression in human granulosa cells through cAMP/SP1, an inoperative FSH action in PCOS patients. *Cell Signal*. 2015 Dec;27(12):2452-66. doi: 10.1016/j.cellsig.2015.09.011. Epub 2015 Sep 24. PubMed PMID: 26388164.

Follicle stimulating hormone (FSH) plays a central role in growth and differentiation of ovarian follicles. A plethora of information exists on molecular aspects of FSH responses but little is known about the mechanisms involved in its cross-talk with insulin/IGF-1 pathways implicated in the coordination of energy homeostasis in preovulatory granulosa cells (GCs). In this study, we hypothesized that FSH may regulate IRS-2 expression and thereby maintain the energy balance in GCs. We demonstrate here that FSH specifically increases IRS-2 expression in human and rat GCs. FSH-stimulated IRS-2 expression was inhibited by actinomycin D or cycloheximide. Furthermore, FSH decreases IRS-2 mRNA degradation indicating post-transcriptional stabilization. Herein, we demonstrate a role of cAMP pathway in the activation of IRS-2 expression by FSH. Scan and activity analysis of IRS-2 promoter demonstrated that FSH regulates IRS-2 expression through SP1 binding sites. FSH stimulates SP1 translocation into nucleus and its binding to IRS-2 promoter. These results are corroborated by the fact that siRNA mediated knockdown of IRS-2 decreased the FSH-stimulated PI3K activity, p-Akt levels, GLUT4 translocation and glucose uptake. However, FSH was not able to increase IRS-2 expression in GCs from PCOS women undergoing IVF. Interestingly, IRS-2 mRNA expression was downregulated in GCs from the PCOS rat model. Taken together, our findings establish that FSH induces IRS-2 expression and thereby activates PI3K, Akt and glucose uptake. Crucially, our data confirms a molecular defect in FSH action in PCOS GCs which may cause deceleration of metabolism and follicular growth leading to infertility. These results lend support for a therapeutic potential of IRS-2 in the management of PCOS.

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11: Arora S, Arora P, Arora R, Ghosh B. Correspondence. *Retina*. 2015 Dec;35(12):e77-8. doi: 10.1097/IAE.0000000000000890. PubMed PMID: 26584442.

12: Baidya DK, Maitra S, Arora MK, Agarwal A. Quadratus lumborum block: an effective method of perioperative analgesia in children undergoing pyeloplasty. *J Clin Anesth*. 2015 Dec;27(8):694-6. doi: 10.1016/j.jclinane.2015.05.006. Epub 2015 Jul 11. PubMed PMID: 26174113.

13: Baidya DK, Pawar DK, Maitra S, Bajpai M, Panda SS. Novel Maneuver for Endobronchial Fogarty Embolectomy Catheter Placement for Lung Isolation in Infants: An Experience of Four Cases. *Eur J Pediatr Surg*. 2015 Dec;25(6):541-3. doi: 10.1055/s-0034-1383429. Epub 2014 Jun 26. PubMed PMID: 24967568.

One-lung anesthesia in infant is always a challenge to the pediatric anesthesiologist. Thoracoscopic diaphragmatic eventration repair requires high quality of lung isolation for proper surgical access. We are reporting a new technique of lung isolation by Fogarty embolectomy catheter alongside the endotracheal tube in four infants.

Georg Thieme Verlag KG Stuttgart · New York.

14: Balhara YP, Gupta R, Atilola O, Knez R, MohoroviÄ‡ T, Gajdhar W, Javed AO, Lal R. Problematic Internet Use and Its Correlates Among Students from Three Medical

Schools Across Three Countries. *Acad Psychiatry*. 2015 Dec;39(6):634-8. doi: 10.1007/s40596-015-0379-9. Epub 2015 Jul 1. PubMed PMID: 26130501.

OBJECTIVE: The authors aimed to assess and compare problematic internet use among medical students enrolled in a graduate degree course in one school each from Croatia, India, and Nigeria and to assess correlates of problematic use among these students.

METHODS: The questionnaire included a sociodemographic profile of participants and Young's Internet Addiction Test.

RESULTS: The final analysis included 842 subjects. Overall, 38.7 and 10.5 % of respondents scored in the mild and moderate categories. Only a small fraction (0.5 %) of students scored in the severe category. Being male and spending more time on the internet were correlated with problematic internet use. Moreover, a significantly higher proportion of participants who scored above the cutoff used the Internet for browsing, social networking, chatting, gaming, shopping, and viewing pornography. However, there was no difference between the two groups with regard to using the internet for e-mailing or academic activities.

CONCLUSIONS: It is important to address problematic internet use among medical students. The correlates can help identify those at increased risk.

15: Bansal PG, Toteja GS, Bhatia N, Vikram NK, Siddhu A. Impact of weekly iron folic acid supplementation with and without vitamin B12 on anaemic adolescent girls: a randomised clinical trial. *Eur J Clin Nutr*. 2015 Dec 23. doi: 10.1038/ejcn.2015.215. [Epub ahead of print] PubMed PMID: 26695724.

BACKGROUND/OBJECTIVES: In India, approx. 70% of the adolescent girls are anaemic (haemoglobin <120g/l). The present study was a supervised randomised double-blind clinical trial conducted among adolescent girls (11-18 years) to assess and compare the impact of weekly iron folic acid (IFA) supplementation with or without vitamin B12 on reduction in the prevalence of anaemia and on blood/serum levels of haemoglobin, serum ferritin, folic acid and vitamin B12.

SUBJECTS/METHODS: Community-based randomized controlled trial was carried out in Kirti Nagar slums of West Delhi. A total of 446 mild (100-119g/l) and moderate (70-99g/l) anaemic volunteer adolescent girls were identified and randomised into two groups. Weekly supervised supplementation was given for 26 weeks: Group A (n=222): iron (100mg), folic acid (500mcg) and placebo; Group B (n=224): iron (100mg), folic acid (500mcg) and cyanocobalamin (500mcg for 6 weeks and 15mcg for 20 weeks). Haemoglobin, serum ferritin, folic acid and vitamin B12 levels were assessed at baseline and after intervention. A total of 373 subjects completed 26 weeks of supplementation successfully.

RESULTS: The mean haemoglobin increased from 106.7±11.2g/l and 108.9±8.91g/l in Group A and Group B at baseline to 116.4±10.8g/l (P<0.001) and 116.5±10.26g/l (P<0.001) at post-intervention, respectively, with the reduction in the prevalence of anaemia by 35.9% in Group A and 39.7% in Group B (P>0.05). A total of 63.3% participants had deficient vitamin B12 levels (<203pg/ml) at baseline, which reduced to 40.4% after intervention with cyanocobalamin, whereas no change was observed in vitamin B12 status in the other group. Significant reduction (P=0.01) in the prevalence of serum ferritin deficiency (<15ng/ml) was observed in the group supplemented with vitamin B12 (from 36.5 to 6.4%) as compared with the other group supplemented with only IFA (from 39.1 to 15.2%).

CONCLUSIONS: IFA supplementation with or without vitamin B12 is an effective measure to cure anaemia. Although addition of vitamin B12 had similar impact on improving haemoglobin status as IFA alone, it resulted in better ferritin status. Hence, more multi-centre studies with a longer duration of supplementation or higher dose of vitamin B12 may be undertaken to assess the possible impact of vitamin B12 on improving haemoglobin levels in the population. *European Journal of Clinical Nutrition* advance online publication, 23 December 2015; doi:10.1038/ejcn.2015.215.

16: Bansal VK, Krishna A, Misra MC, Prakash P, Kumar S, Rajan K, Babu D, Garg P, Kumar A, S R. Factors Affecting Short-Term and Long-Term Outcomes After Bilioenteric Reconstruction for Post-cholecystectomy Bile Duct Injury: Experience at a Tertiary Care Centre. *Indian J Surg.* 2015 Dec;77(Suppl 2):472-9. doi: 10.1007/s12262-013-0880-x. Epub 2013 Feb 13. PubMed PMID: 26730048; PubMed Central PMCID: PMC4692855.

Bile duct injury following cholecystectomy is an iatrogenic catastrophe associated with significant perioperative morbidity, reduced long-term survival and quality of life. There has been little literature on the long-term outcomes after surgical reconstruction and factors affecting it. The aim of this study was to study factors affecting long-term outcomes following surgical repair of iatrogenic bile duct injury being referred to a tertiary care centre. Between January 2005 to December 2011, 138 patients with bile duct injury were treated in a single surgical unit in a tertiary care referral hospital. Preoperative details were recorded. After initial resuscitation, any intra-abdominal collection was drained and an imaging of biliary anatomy was done. Once the general condition of the patient improved, patients were taken up for a side-to-side extended left duct hepaticojejunostomy. The post-operative outcomes were recorded and a hepatobiliary iminodiacetic acid scan and liver function tests were done, and then the patients were followed up at regular intervals. Clinical outcome was evaluated according to clinical grades described by Terblanche and Worthley (*Surgery* 108:828-834, 1990). The variables were compared using chi-square, unpaired Student's t test and Fisher's exact test. A two-tailed p value of <0.05 was considered significant. One hundred thirty-eight patients, 106 (76.8 %) females and 32 (23.2 %) males with an age range of 20-63 years (median 40.8±SD) with bile duct injury following open or laparoscopic cholecystectomy, were operated during this period. Majority of the patients [83 (60.1 %)] had a delayed presentation of more than 3 months. Based on imaging, Strasburg type E1 was seen in 17 (12.5 %), type E2 in 30 (21.7 %), type E3 in 85 (61.5 %) and type E4 in 6 (4.3 %). On multivariate analysis, only level of injury, longer duration of referral and associated vascular injury were independently associated with an overall poor long-term outcome. This study demonstrates level of injury at or above the confluence; associated vascular injury and delay in referral were associated with poorer outcomes in long-term follow-up; however, almost all patients had excellent outcome in long-term follow-up.

17: Bhalla D, Lotfalinezhad E, Timalsina U, Kapoor S, Kumar KS, Abdelrahman A, Giagante B, Tripathi M, Srivastava K, Irmansyah I. A comprehensive review of epilepsy in the Arab world. *Seizure.* 2015 Dec 14;34:54-59. doi: 10.1016/j.seizure.2015.12.002. [Epub ahead of print] Review. PubMed PMID: 26724591.

PURPOSE: We conducted a comprehensive review of the epidemiology of epilepsy in the Arab world.

METHODS: Epidemiological literature about epilepsy from 22 countries of the Arab League was searched in French and English using several keywords (specific and wider) and combinations, individually for each country. The search was conducted on Google first and then on PubMed. The results are presented as counts, proportions, and medians along with 95% confidence intervals (CI). Unpaired t-test with unequal variance and regressions were performed, altogether and individually, for lifetime and active epilepsy prevalence as well as incidence. **RESULTS:** Google provided 21 prevalence, four camp and nine incidence estimates while PubMed provided ten such estimates; none of them was identified by Google. No epidemiological data about epilepsy was found from 10/22 countries. Excluding pediatric studies, 13 prevalence estimates from six countries were identified. Including pediatric studies, 21 estimates from nine countries were found. Median lifetime and active epilepsy prevalence were 7.5/1000 (95% CI 2.6-12.3, range 1.9-12.9) and 4.4/1000 (95% CI 2.1-9.3, range 2.1-9.3), respectively, excluding pediatric studies (1984-2014, N=244081). Median incidence was 56.0/100,000 (n=9, N=122484, 95% CI 13.7-147.9, range 10.4-190).

CONCLUSION: The fact that no epidemiological data about epilepsy is available in

the public domain for almost one half of all Arab countries offers opportunities for future research. This thorough review of existing literature demonstrates a prevalence of epilepsy three times higher than previously reported for this region. The median incidence is similar to other regions of the world, e.g. North America. Google yielded additional valuable sources not indexed in PubMed and provided pertinent references more quickly.

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18: Bhardwaj S, Pandit D, Sinha A, Hari P, Cheong HI, Bagga A. Congenital Chloride Diarrhea - Novel Mutation in SLC26A3 Gene. *Indian J Pediatr.* 2015 Dec 5. [Epub ahead of print] PubMed PMID: 26637435.

The authors report a case of congenital chloride diarrhea with molecular confirmation of diagnosis. A 10-mo-old boy presented with failure to thrive, voluminous diarrhea, dehydration, hyponatremia, hypokalemia, metabolic alkalosis and history of maternal polyhydramnios. The diagnosis of congenital chloride diarrhea was based on high fecal and low urinary chloride excretion, in addition to biochemical abnormalities. Genetic testing revealed a novel homozygous mutation in exon 4 of the SLC26A3 gene that encodes the protein regulating chloride bicarbonate absorption in distal ileum and colon. Therapy with oral fluids and electrolytes led to decrease in stool frequency and improvement in growth parameters.

19: Bhatia D, Khandelwal P, Sinha A, Hari P, Cheong HI, Bagga A. Incomplete penetrance of CD46 mutation causing familial atypical hemolytic uremic syndrome. *Pediatr Nephrol.* 2015 Dec;30(12):2215-20. doi: 10.1007/s00467-015-3189-0. Epub 2015 Aug 26. PubMed PMID: 26307634.

BACKGROUND: Hemolytic uremic syndrome (HUS) secondary to homozygous mutations in CD46 is uncommon. While heterozygous individuals may remain asymptomatic, homozygous mutations with severely depleted CD46 surface expression without disease manifestation is rare.

METHODS: We report on two siblings with features suggestive of hemolytic uremic syndrome. Estimation of CD46 expression by flow cytometry and gene sequencing were performed in members of this family.

RESULTS: Three siblings, two of whom were symptomatic, had markedly decreased (<10 %) cell surface expression of CD46 and homozygous splice site mutation (IVS2+2 T>G) in the CD46 gene; the other 10-year-old sibling was asymptomatic. The illness was preceded by dengue shock syndrome in the index case. Both parents and two other siblings were heterozygous for this CD46 mutation.

CONCLUSIONS: Homozygous IVS2+2 T>G mutation in CD46 gene, similar to heterozygous mutation, may be clinically silent at least during childhood. The role of antecedent infections in triggering the disease requires further examination.

20: Chandra P, Gangawe A, Singhal D, Kumar A. Floating iris cyst mimicking intravitreal cysticercosis. *BMJ Case Rep.* 2015 Dec 21;2015. pii: bcr2015213484. doi: 10.1136/bcr-2015-213484. PubMed PMID: 26689253.

21: Chandra PS. In Reply: Different Facets in Management of Congenital Atlantoaxial Dislocation and Basilar Invagination. *Neurosurgery.* 2015 Dec;77(6):E987-8. doi: 10.1227/NEU.0000000000000959. PubMed PMID: 26281025.

22: Chandra SP. In Reply to the Letter to the Editor regarding Analysis of Changing Paradigms of Management in 179 Patients with Spinal Tuberculosis During a 12-Year Period and Proposal of a New Management Algorithm. *World Neurosurg.* 2015 Dec;84(6):2072-3. doi: 10.1016/j.wneu.2015.07.028. PubMed PMID: 26674554.

23: Chopra A, Soni S, Verma D, Kumar D, Dwivedi R, Vishwanathan A, Vishwakama G, Bakhshi S, Seth R, Gogia A, Kumar L, Kumar R. Prevalence of common fusion transcripts in acute lymphoblastic leukemia: A report of 304 cases. *Asia Pac J Clin Oncol*. 2015 Dec;11(4):293-8. doi: 10.1111/ajco.12400. Epub 2015 Aug 12. PubMed PMID: 26264145.

AIM: Information about fusion transcripts in acute lymphoblastic leukemia (ALL) is used to risk-stratify patients, decide on the treatment and to detect minimal residual disease. This study was conducted to determine the frequency of common fusion transcripts BCR-ABL, TEL-AML1, MLL-AF4 and E2A-PBX1 for B-ALL and SIL-TAL1 for T-ALL as seen at a tertiary care center in India.

METHODS: Up to 304 new cases of ALL (271 B-ALL and 33 T-ALL) diagnosed on morphology, cytochemistry and immunophenotyping were studied. All were screened for the common fusion transcripts by RT-PCR.

RESULTS: Both our B- (218/271; 80.4%) and T-ALL (26/33; 78.8%) patients were largely children. In the B-ALL children, BCR-ABL was detected in 26/218 (11.9%), E2A-PBX1 in 13/218 (5.9%), TEL-AML1 in 16/218 (7.3%) and MLL-AF4 in 3/218 (1.4%) patients. Adult B-ALL cases had BCR-ABL in 15/53 (28.3%) and E2A-PBX1 in 2/53 (3.8%); however, no other fusion transcript was detected. SIL-TAL1 was found in four of 26 pediatric (15%) and zero of 7 adult T-ALL cases.

CONCLUSION: The higher incidence of BCR-ABL and lower incidence of TEL-AML1 in our ALL patients, both in children and adults as compared with the West, suggests that patients in India may be biologically different. This difference may explain at least in part the higher relapse rate and poorer outcome in our B-ALL cases.

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24: Chowdhury R, Sinha B, Sankar MJ, Taneja S, Bhandari N, Rollins N, Bahl R, Martines J. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. *Acta Paediatr*. 2015 Dec;104(467):96-113. doi: 10.1111/apa.13102. Review. PubMed PMID: 26172878; PubMed Central PMCID: PMC4670483.

AIM: To evaluate the effect of breastfeeding on long-term (breast carcinoma, ovarian carcinoma, osteoporosis and type 2 diabetes mellitus) and short-term (lactational amenorrhoea, postpartum depression, postpartum weight change) maternal health outcomes.

METHODS: A systematic literature search was conducted in PubMed, Cochrane Library and CABI databases. Outcome estimates of odds ratios or relative risks or standardised mean differences were pooled. In cases of heterogeneity, subgroup analysis and meta-regression were explored.

RESULTS: Breastfeeding >12 months was associated with reduced risk of breast and ovarian carcinoma by 26% and 37%, respectively. No conclusive evidence of an association between breastfeeding and bone mineral density was found. Breastfeeding was associated with 32% lower risk of type 2 diabetes. Exclusive breastfeeding and predominant breastfeeding were associated with longer duration of amenorrhoea. Shorter duration of breastfeeding was associated with higher risk of postpartum depression. Evidence suggesting an association of breastfeeding with postpartum weight change was lacking.

CONCLUSION: This review supports the hypothesis that breastfeeding is protective against breast and ovarian carcinoma, and exclusive breastfeeding and predominant breastfeeding increase the duration of lactational amenorrhoea. There is evidence that breastfeeding reduces the risk of type 2 diabetes. However, an association between breastfeeding and bone mineral density or maternal depression or postpartum weight change was not evident.

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25: Dada T, Sharma R, Sinha G, Angmo D, Temkar S. Cyclodialysis-enhanced trabeculectomy with triple Ologen implantation. *Eur J Ophthalmol*. 2015 Dec 1;26(1):95-7. doi: 10.5301/ejo.5000633. Epub 2015 May 27. PubMed PMID: 26044372.

PURPOSE: To describe a novel technique of trabeculectomy combined with cyclodialysis and Ologen implantation at 3 sites in cases with high risk for failure of trabeculectomy.

METHODS: Six eyes of 6 patients who had high risk for failure of trabeculectomy underwent cyclodialysis-augmented trabeculectomy with Ologen implantation at 3 sites using the described technique.

RESULTS: All the eyes achieved target intraocular pressure, which was maintained until 1 year of follow-up. One eye required bleb needling at 6 weeks postoperative follow-up. None of the eyes had any other intraoperative or postoperative complications.

CONCLUSIONS: This novel technique of combining trabeculectomy with cyclodialysis augmented by Ologen placement at 3 locations appears to have encouraging short-term intraocular pressure control and may be adopted in eyes with risk factors for failure of conventional trabeculectomy.

26: Dalela M, Shrivastav TG, Kharbanda S, Singh H. pH-Sensitive Biocompatible Nanoparticles of Paclitaxel-Conjugated Poly(styrene-co-maleic acid) for Anticancer Drug Delivery in Solid Tumors of Syngeneic Mice. *ACS Appl Mater Interfaces*. 2015 Dec 9;7(48):26530-48. doi: 10.1021/acsami.5b07764. Epub 2015 Nov 23. PubMed PMID: 26528585.

In the present study, we have synthesized poly(styrene-co-maleic anhydride), a biocompatible copolymer that was further conjugated with paclitaxel (PTX) via ester linkage and self-assembled to form poly(styrene-co-maleic acid)-paclitaxel (PSMAC-PTX) nanoparticles (NPs). The *in vitro* release of PTX from PSMAC-PTX NPs showed a higher release at lower pH than at the physiological pH of 7.4, confirming its pH-dependent release. The cell viability of PSMAC-PTX nanoparticles was evaluated using MTT assay. IC₅₀ values of 9.05-18.43 ng/mL of PTX equivalent were observed in various cancer cell lines after 72 h of incubation. Confocal microscopy, Western blotting, and Flow cytometry results further supported that the cellular uptake and apoptosis of cancer cells with PSMAC-PTX NPs. Pharmacokinetic studies revealed that the conjugation of PTX to the PSMAC co-polymer not only increased the plasma and tumor C_{max} of PTX but also prolonged its plasma half-life and retention in tumor via enhanced permeability and retention (EPR) effect. Administration of PSMAC-PTX NPs showed significant tumor growth inhibition with improved apoptosis effects *in vivo* on Ehrlich Ascites Tumor (EAT)-bearing BALB/c syngeneic mice in comparison with Taxol, without showing any cytotoxicity. On the basis of preliminary results, no subacute toxicity was observed in major organs, tissues and hematological system up to a dosage of 60 mg/kg body weight in mice. Therefore, PSMAC-PTX NPs may be considered as an alternative nanodrug delivery system for the delivery of PTX in solid tumors.

27: Dhull VS, Passah A, Rana N, Arora S, Mallick S, Kumar R. Paraneoplastic pemphigus as a first sign of metastatic retroperitoneal inflammatory myofibroblastic tumor: (18)F-FDG PET/CT findings. *Rev Esp Med Nucl Imagen Mol*. 2015 Dec 28. pii: S2253-654X(15)00132-8. doi: 10.1016/j.remn.2015.09.005. [Epub ahead of print] English, Spanish. PubMed PMID: 26740314.

A 30-year-old female presented with a 3-month history of erosive stomatitis and bullous lesions, along with recurrent episodes of abdominal pain. She was found to have a retroperitoneal lump in left lumbar region. Skin biopsy revealed bullous disorder. CT guided biopsy of the retroperitoneal mass was suggestive of inflammatory myofibroblastic tumor (IMT). She was started on oral steroids and supportive care, and surgery was being planned when she developed respiratory failure. CT chest revealed vertebral metastases. PET/CT for whole body work up revealed a left para-aortic mass along with multiple skeletal metastases. The patient was kept on conservative management. After 3 months, the patient has

shown clinical improvement, and an exploratory laparotomy is now being planned for the excision of the tumor, followed by chemotherapy. This case of retroperitoneal IMT is rare in terms of skeletal metastases with paraneoplastic pemphigus.

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28: Gandhi AK, Roy S, Mridha AR, Sharma DN. Vulvar metastasis from carcinoma breast unveiling distant metastasis: Exploring an unusual metastatic pattern. *J Egypt Natl Canc Inst.* 2015 Dec;27(4):243-6. doi: 10.1016/j.jnci.2015.05.005. Epub 2015 Jul 6. PubMed PMID: 26160598.

A 76-year-old woman with a previous history of infiltrating ductal carcinoma of right breast (diagnosed and treated 14 years back) presented to us with a non-healing ulcer on the left side of the vulva along with two satellite nodules close to the vulvar lesion. Biopsy showed an infiltrating ductal carcinoma of breast with a strong positivity for estrogen/progesterone receptors. Further, (18)F-FDG PET-CT (Fluoro-deoxy glucose positron emission tomography computed tomography) showed multiple bilateral lung metastases. She responded well to hormone therapy (Letrozole) with decrease in the size of primary vulvar lesion and disappearance of the satellite nodules. Repeating PET-CT at 6 months showed partial response of the lung lesions. The present case is unique in the way of metastatic presentation of breast cancer to vulva after a long gap of primary diagnosis (longest reported till date) and also in unveiling of further metastatic sites in otherwise asymptomatic case. Patients (particularly elderly) with this unusual and clinically isolated pattern of metastasis might remain misdiagnosed for a long period of time and this case report aims to increase the awareness of clinicians toward the same. Gynecological surveillance remains of paramount importance in the follow up of breast cancer.

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29: Ganger A, Vanathi M, Mohanty S, Tandon R. Long-Term Outcomes of Cultivated Limbal Epithelial Transplantation: Evaluation and Comparison of Results in Children and Adults. *Biomed Res Int.* 2015;2015:480983. doi: 10.1155/2015/480983. Epub 2015 Dec 3. PubMed PMID: 26770973; PubMed Central PMCID: PMC4681831.

Purpose. To compare the long-term clinical outcomes of cultivated limbal epithelial transplantation (CLET) in children and adults with limbal stem cell deficiency. **Design.** Retrospective case series. **Methods.** Case records of patients with limbal stem cell deficiency (LSCD) who underwent CLET from April 2004 to December 2014 were studied. Outcome measures were compared in terms of anatomical success and visual improvement. Parameters for total anatomical success were avascular, epithelized, and clinically stable corneal surface without conjunctivalization, whereas partial anatomical success was considered when mild vascularization (sparing centre of cornea) and mild conjunctivalization were noted along with complete epithelization. **Results.** A total of 62 cases underwent the CLET procedure: 38 (61.3%) were children and 24 (38.7%) were adults. Patients with unilateral LSCD (33 children and 21 adults) had autografts and those with bilateral LSCD (5 children and 3 adults) had allografts. Amongst the 54 autografts partial and total anatomical success were noted in 21.2% and 66.6% children, respectively, and 19.0% and 80.9% in adults, respectively (p value 0.23). Visual improvement of 1 line and ≥ 2 lines was seen in 57.5% and 21.2% children, respectively, and 38% and 38% in adults, respectively (p value 0.31). **Conclusion.** Cultivated limbal epithelial transplantation gives good long-term results in patients with LSCD and the outcomes are comparable in children and adults.

30: Garg H, Kumar R. Empirical Drug Therapy for Idiopathic Male Infertility: What is the New Evidence? *Urology.* 2015 Dec;86(6):1065-75. doi: 10.1016/j.urology.2015.07.030. Epub 2015 Aug 5. Review. PubMed PMID: 26255035.

Idiopathic male infertility is empirically managed using a number of drugs. We reviewed 64 articles published in the last 10 years on such drug therapy. There was severe heterogeneity in data along with poor definition of outcome parameters. Pregnancy or live birth rate was not reported in many studies. Antiestrogens appear to improve pregnancy rates while there is some data supporting the use of aromatase inhibitors. Antioxidants significantly increase the rate of both live birth and pregnancy but the data are limited. However, valid end-points based on data are limited for the empirical use of drugs in idiopathic male infertility.

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31: Gautam M, Prasoon P, Kumar R, Reeta KH, Kaler S, Ray SB. Role of neurokinin type 1 receptor in nociception at the periphery and the spinal level in the rat. *Spinal Cord*. 2015 Dec 22. doi: 10.1038/sc.2015.206. [Epub ahead of print] PubMed PMID: 26690860.

OBJECTIVES: Noxious stimuli activate small to medium-sized dorsal root ganglion (DRG) neurons. Intense noxious stimuli result in the release of substance P (SP) from the central terminals of these neurons. It binds to the neurokinin type 1 receptor (NK1r) and sensitises the dorsal horn neurons. SP is also released from the peripheral terminals leading to neurogenic inflammation. However, their individual contribution at spinal and peripheral levels to postincisional nociception has not been delineated as yet.

METHODS: Sprague-Dawley rats were administered different doses (3-100µg) of an NK1r antagonist (L760735) by intrathecal (i.t.) route before hind paw incision. On the basis of its antinociceptive effect on guarding behaviour, the 30µg dose was selected for further study. In different sets of animals, this was administered i.t. (postemptive) and intrawound (i.w.). Finally, in another group, drug (30µg) was administered through both i.t and i.w. routes. The antinociceptive effect was assessed and compared. Expression of SP was examined in the spinal cord. Intrawound concentration of SP and inflammatory mediators was also evaluated.

RESULTS: Postemptive i.t. administration significantly attenuated guarding and allodynia. Guarding was alone decreased after i.w. drug treatment. Combined drug administration further attenuated all nociceptive parameters, more so after postemptive treatment. Expression of SP in the spinal cord decreased post incision but increased in the paw tissue. Inflammatory mediators like the nerve growth factor also increased after incision.

CONCLUSION: In conclusion, SP acting through the NK1r appears to be an important mediator of nociception, more so at the spinal level. These findings could have clinical relevance. *Spinal Cord* advance online publication, 22 December 2015; doi:10.1038/sc.2015.206.

32: Giridhar P, Mallick S, Damodara Kumaran, George A, Kaushal S, Julka PK. Primitive neuro-ectodermal tumour of kidney in adult: Report of four consecutive cases and review of the literature. *J Egypt Natl Canc Inst*. 2015 Dec;27(4):235-8. doi: 10.1016/j.jnci.2015.05.001. Epub 2015 Jun 13. PubMed PMID: 26077932.

BACKGROUND: PNET of kidney is a rare entity and its diagnosis is complicated by the presence of a number of differential diagnoses. The disease is most commonly seen in young adults. Radical nephrectomy and adjuvant chemotherapy is the standard treatment. However, the patients have a modest survival and often develop distant metastasis. We herein report four cases of renal PNET (rPNET).

METHODOLOGY: We retrospectively retrieved treatment chart of four cases of rPNET. **RESULTS:** Median age was 29years. Radical nephrectomy was performed in three cases. All four cases received multiagent chemotherapy. VAC alternating with IE was the commonest regimen. Compliance and tolerance to treatment was excellent. At the last follow up two patients were in complete remission whereas the remaining two cases had systemic metastasis and alive with disease.

CONCLUSION: Multimodality approach is required in rPNET. Patient with localized

disease appears to have better disease control and survival.

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33: Gupta A, Kharbanda OP, Sardana V, Balachandran R, Sardana HK. Accuracy of 3D cephalometric measurements based on an automatic knowledge-based landmark detection algorithm. *Int J Comput Assist Radiol Surg*. 2015 Dec 24. [Epub ahead of print] PubMed PMID: 26704370.

PURPOSE: To evaluate the accuracy of three-dimensional cephalometric measurements obtained through an automatic landmark detection algorithm compared to those obtained through manual identification.

METHODS: The study demonstrates a comparison of 51 cephalometric measurements (28 linear, 16 angles and 7 ratios) on 30 CBCT (cone beam computed tomography) images. The analysis was performed to compare measurements based on 21 cephalometric landmarks detected automatically and those identified manually by three observers.

RESULTS: Inter-observer ICC for each landmark was found to be excellent ([Formula: see text]) among three observers. The unpaired t-test revealed that there was no statistically significant difference in the measurements based on automatically detected and manually identified landmarks. The difference between the manual and automatic observation for each measurement was reported as an error. The highest mean error in the linear and angular measurements was found to be 2.63 mm ([Formula: see text] distance) and [Formula: see text] ([Formula: see text]-Me angle), respectively. The highest mean error in the group of distance ratios was 0.03 (for N-Me/N-ANS and [Formula: see text]).

CONCLUSION: Cephalometric measurements computed from automatic detection of landmarks on 3D CBCT image were as accurate as those computed from manual identification.

34: Gupta A, Bhatia R, Sharma G, Prasad K, Singh MB, Vibha D. Predictors of Ischemic Stroke in Rheumatic Heart Disease. *J Stroke Cerebrovasc Dis*. 2015 Dec;24(12):2810-5. doi: 10.1016/j.jstrokecerebrovasdis.2015.08.014. Epub 2015 Sep 26. PubMed PMID: 26409719.

BACKGROUND: Studies on predictors of ischemic strokes caused by rheumatic heart disease (RHD) are sparse and extremely important for identifying high-risk cases to direct future therapeutic trials for prevention of ischemic stroke in this population.

OBJECTIVE: The aim of the present study was to study the predictors of ischemic stroke in patients with RHD and to observe outcome of patients with ischemic stroke at 3 months' follow-up using modified Rankin scale.

METHODS: We conducted a case-control study comparing the clinical profile of 40 adult patients with acute ischemic stroke caused by RHD with equal numbers of matched controls comprising patients with RHD without any prior history of stroke. We also observed the functional outcome of ischemic strokes in these patients.

RESULTS: The presence of left atrial spontaneous echo contrast (odds ratio=39.9; 95% confidence interval, 3.16-501.9; P=.004) and atrial fibrillation (AF) (odds ratio=3.2; 95% confidence interval, 1.6-6.7; P=.002) was significantly associated with stroke occurrence in RHD populations. The outcome of patients was good with low mortality and significant improvement of modified Rankin scale at 3 months' follow-up.

CONCLUSIONS: Presence of AF and left atrial spontaneous echo contrast are significant risk factors for ischemic stroke in patients with RHD. There is high percentage of subclinical AF in this population. Future large clinical trials for oral anticoagulation/antiplatelet agents are needed for stroke prevention in high-risk RHD patients identified by a detailed workup.

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35: Gupta AK, Jana M. Hemophilia Management and Follow-up: Role of Radiological and Functional Assessment of the Disease Severity. *Indian J Pediatr.* 2015 Dec;82(12):1084-5. doi: 10.1007/s12098-015-1882-4. Epub 2015 Sep 24. PubMed PMID: 26400035.

36: Gupta N, Jain P, Singh K. Congenital Mirror Movements in a 7-Year-Old Boy. *Pediatr Neurol.* 2015 Dec;53(6):543-4. doi: 10.1016/j.pediatrneurol.2015.08.012. Epub 2015 Sep 3. PubMed PMID: 26428600.

37: Gupta R, Gupta N, Nampoothiri S, Mandal K, Kishore Y, Sharma P, Kabra M, Phadke SR. Smith-Magenis Syndrome: Face Speaks. *Indian J Pediatr.* 2015 Dec 17. [Epub ahead of print] PubMed PMID: 26676648.

Smith-Magenis syndrome is a well delineated microdeletion syndrome with characteristic facial and behavioral phenotype. With the availability of the multi-targeted molecular cytogenetic techniques like Multiplex Ligation Probe Amplification and cytogenetic microarray, the cases are diagnosed even without clinical suspicion. Here, the authors present clinical features of nine Indian cases of Smith-Magenis syndrome. Characteristic facial phenotype including tented upper lip, broad forehead, midface hypoplasia, short philtrum and upslant of palpebral fissure is obvious in the photographs. The behavioral variations were seen in some of the cases but were not the presenting features. The characteristic facial phenotype can be an important clinical guide to the diagnosis.

38: Gupta S, Kumaran SS, Saxena R, Gudwani S, Menon V, Sharma P. BOLD fMRI and DTI in strabismic amblyopes following occlusion therapy. *Int Ophthalmol.* 2015 Dec 12. [Epub ahead of print] PubMed PMID: 26659010.

Evaluation of brain cluster activation using the functional magnetic resonance imaging (fMRI) and diffusion tensor imaging (DTI) was sought in strabismic amblyopes. In this hospital-based case-control cross-sectional study, fMRI and DTI were conducted in strabismic amblyopes before initiation of any therapy and after visual recovery following the administration of occlusion therapy. fMRI was performed in 10 strabismic amblyopic subjects (baseline group) and in 5 left strabismic amblyopic children post-occlusion therapy after two-line visual improvement. Ten age-matched healthy children with right ocular dominance formed control group. Structural and functional MRI was carried out on 1.5T MR scanner. The visual task consisted of 8 Hz flickering checkerboard with red dot and occasional green dot. Blood-oxygen-level-dependent (BOLD) fMRI was analyzed using statistical parametric mapping and DTI on NordicIce (NordicNeuroLab) softwares. Reduced occipital activation was elicited when viewing with the amblyopic eye in amblyopes. An 'ipsilateral to viewing eye' pattern of calcarine BOLD activation was observed in controls and left amblyopes. Activation of cortical areas associated with visual processing differed in relation to the viewing eye. Following visual recovery on occlusion therapy, enhanced activity in bilateral hemispheres in striate as well as extrastriate regions when viewing with either eye was seen. Improvement in visual acuity following occlusion therapy correlates with hemodynamic activity in amblyopes.

39: Gupta S, Midha N, Gogia V, Sahay P, Pandey V, Venkatesh P. Sensitivity of multifocal electroretinography (mfERG) in detecting siderosis. *Can J Ophthalmol.* 2015 Dec;50(6):485-90. doi: 10.1016/j.jcjo.2015.08.011. PubMed PMID: 26651311.

OBJECTIVE: To evaluate use of multifocal electroretinography (mfERG) in diagnosing retinal toxicity from siderosis with normal ERG.

DESIGN: Prospective case series.

PARTICIPANTS: Six patients with retained intraocular foreign body were recruited.

METHODS: The affected eye of the patients had no clinical evidence of siderosis,

had similar full-field photopic 3.0 ERG compared with the fellow eye, and had subnormal visual acuity. Group averages in each mfERG ring for implicit time and amplitude at P1 wave were compared between affected and fellow eye to look for latent siderosis.

RESULTS: On mfERG, no statistical difference in group averaged amplitude was observed; however, a significant difference ($p < 0.05$) was found in group averaged latency between fellow and affected eye at most tested rings (<2 degree, 2-5 degree, and >15 degree rings). Average latency for overall retinal area mapped also showed significant difference ($p = 0.010$).

CONCLUSIONS: Increased mfERG latency may serve as an early predictor of retinal damage from siderosis when full-field ERG is normal.

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40: Gupta S, Kumar A, Mahendra A, Gupta S. A minimally invasive, scarless technique of donor tissue harvesting for noncultured epidermal cell suspension transplantation in vitiligo. *J Am Acad Dermatol*. 2015 Dec;73(6):e213-5. doi: 10.1016/j.jaad.2015.07.037. PubMed PMID: 26568353.

41: Haldar P, Ramesh V, Kant S. Effect of sedentary activity on telomere length may not be so straightforward. *Br J Sports Med*. 2015 Dec;49(24):1604. doi: 10.1136/bjsports-2014-094473. Epub 2015 Jan 8. PubMed PMID: 25573617.

42: Halder N, Peshin SS, Pandey RM, Gupta YK. Awareness assessment of harmful effects of mercury in a health care set-up in India: A survey-based study. *Toxicol Ind Health*. 2015 Dec;31(12):1144-51. doi: 10.1177/0748233713488237. Epub 2013 May 22. PubMed PMID: 23698903.

Mercury, one of the most toxic heavy metals, is ubiquitous in environment. The adverse health impact of mercury on living organisms is well known. The health care facilities are one of the important sources of mercury release into the atmosphere as mercury items are extensively used in hospitals. To assess the awareness about mercury toxicity and the knowledge of proper handling and disposal of mercury-containing items in health care set-up, a questionnaire-based survey was carried out amongst doctors ($n = 835$), nurses ($n = 610$) and technicians ($n = 393$) in government hospitals, corporate hospitals and primary health care centres in the Indian states of Delhi, Uttar Pradesh and Haryana. The study was conducted using a tool-containing pretested structured multiple-choice questionnaire. Analysis of the results using STATA 11.1 software highlighted that overall awareness was more in corporate sector. However, percentage range of knowledge of respondents irrespective of health care sector was only between 20 and 40%. Despite the commitment of various hospitals to be mercury free, mercury containing-thermometer/sphygmomanometer are still preferred by health professionals. The likely reasons are availability, affordability, accuracy and convenience in use. There is an urgent need for source reduction, recycling and waste minimization. Emphasis must be laid on mercury alternative products, education and training of health personnel and public at large, about correct handling and proper clean up of spills.

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43: Hui SP, Nag TC, Ghosh S. Characterization of Proliferating Neural Progenitors after Spinal Cord Injury in Adult Zebrafish. *PLoS One*. 2015 Dec 2;10(12):e0143595. doi: 10.1371/journal.pone.0143595. eCollection 2015. PubMed PMID: 26630262; PubMed Central PMCID: PMC4667880.

Zebrafish can repair their injured brain and spinal cord after injury unlike adult mammalian central nervous system. Any injury to zebrafish spinal cord would lead to increased proliferation and neurogenesis. There are presences of proliferating progenitors from which both neuronal and glial loss can be reversed

by appropriately generating new neurons and glia. We have demonstrated the presence of multiple progenitors, which are different types of proliferating populations like Sox2⁺ neural progenitor, A2B5⁺ astrocyte/ glial progenitor, NG2⁺ oligodendrocyte progenitor, radial glia and Schwann cell like progenitor. We analyzed the expression levels of two common markers of dedifferentiation like msx-b and vimentin during regeneration along with some of the pluripotency associated factors to explore the possible role of these two processes. Among the several key factors related to pluripotency, pou5f1 and sox2 are upregulated during regeneration and associated with activation of neural progenitor cells. Uncovering the molecular mechanism for endogenous regeneration of adult zebrafish spinal cord would give us more clues on important targets for future therapeutic approach in mammalian spinal cord repair and regeneration.

44: Jain S, Mahapatra M, Pati HP. CD34 immunohistochemistry in bone marrow biopsies for early response assessment in acute myeloid leukemia. *Int J Lab Hematol*. 2015 Dec;37(6):746-51. doi: 10.1111/ijlh.12406. Epub 2015 Aug 6. PubMed PMID: 26248894.

INTRODUCTION: Acute myeloid leukemia is a heterogenous disease with respect to prognosis. Early response assessment has an established role as predictor of remission rate, and overall and disease-free survival. Assessment of blast percentage on bone marrow aspirate smears at this stage has its own limitations. **MATERIALS AND METHOD:** In this study, a total of 100 AML cases that were positive for CD34 at the time of diagnosis were included in the study. Blast percentage obtained in bone marrow aspirate smears by morphology was compared with that obtained in bone marrow biopsy using CD34 immunohistochemistry. **RESULTS:** Bone marrow aspirate and biopsy were discordant in 19% of the cases. In 15% of the cases, bone marrow aspirate blast count was ≤5% and bone marrow biopsy blast percentage was >5%. **CONCLUSION:** Early response assessment plays an important role in management of acute myeloid leukemia. In patients with CD34-positive blasts, the CD34 IHC can improve the detection of residual blasts on Day 14 bone marrow biopsy in comparison with morphological assessment of blast percentage in bone marrow aspirate.

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45: Jat KR, Kabra SK. Obesity and Pulmonary Function Tests. *Indian J Pediatr*. 2015 Dec;82(12):1089-90. doi: 10.1007/s12098-015-1888-y. Epub 2015 Sep 16. PubMed PMID: 26374739.

46: Julka PK, Sharma DN, Madan R, Mallick S, Haresh KP, Gupta S, Rath GK, Manoharan N. Treatment Compliance in Lung Cancer Patients. *Clin Oncol (R Coll Radiol)*. 2015 Dec;27(12):754-5. doi: 10.1016/j.clon.2015.07.002. Epub 2015 Aug 5. PubMed PMID: 26253863.

47: Kakkar A, Sable M, Suri V, Sarkar C, Garg A, Satyarthee GD, Sharma MC. Cerebellar Liponeurocytoma, an Unusual Tumor of the Central Nervous System - Ultrastructural Examination. *Ultrastruct Pathol*. 2015 Dec;39(6):419-23. doi: 10.3109/01913123.2015.1027435. Epub 2015 Jun 24. PubMed PMID: 26107691.

Cerebellar liponeurocytoma is a rare tumor of the central nervous system which shows neuronal and variable astrocytic differentiation, along with foci of lipomatous differentiation. It is usually located in the cerebellum, and may be mistaken for medulloblastoma with lipidized cells or lipomatous ependymoma. Histopathological examination, supplemented by immunohistochemistry and electron microscopy, is required to distinguish between these entities. This 35-year-old male presented with vomiting and headache for three months, followed by gait imbalance. Neurological examination showed positive cerebellar signs with ataxic gait. Magnetic resonance imaging showed a lesion measuring 4.4 cm × 4.3 cm × 3.9 cm involving the cerebellum. The patient underwent midline suboccipital craniotomy to excise the tumor. Histopathological examination showed a circumscribed,

cellular tumor composed of round to polygonal cells with moderate cytoplasm and minimal pleomorphism. Clear intracytoplasmic vacuoles were seen within the tumor cells. These tumor cells were immunopositive for synaptophysin, NSE, and MAP-2, confirming their neurocytic origin. On ultrastructural examination, lipid vacuoles as well as dense-core neurosecretory granules were identified within these neurocytic cells, confirming the diagnosis of liponeurocytoma. No cilia, microvilli, or gap junctions were identified in the tumor cells, ruling out the possibility of lipomatous ependymoma. The differentiation of liponeurocytoma from its morphological mimics is imperative, as their treatment differs drastically. The role of electron microscopy is extremely important in this differential diagnosis.

48: Kalra S, Gupta Y. Initiation of insulin. *J Pak Med Assoc.* 2015 Dec;65(12):1363-4. PubMed PMID: 26627527.

49: Kalra S, Gupta Y. Ambulatory glucose profile: Flash glucose monitoring. *J Pak Med Assoc.* 2015 Dec;65(12):1360-2. PubMed PMID: 26627526.

Ambulatory glucose profile (AGP) is a novel way of assessing glycaemic levels on a 24 hour basis, through a minimally invasive method, known as flash glucose monitoring. This review describes the unique features of AGP, differentiates it from existing methods of glucose monitoring, and explains how it helps pursue the glycaemic pentad. The review suggests pragmatic usage of this technology, including pre-test, intra-test, and post-test counselling, and lists specific clinical scenarios where the investigation seems to be of immense benefit.

50: Kalra S, Gupta Y. Number-Based Approach to Insulin Taxonomy. *Diabetes Ther.* 2015 Dec;6(4):469-479. Epub 2015 Sep 9. PubMed PMID: 26350081; PubMed Central PMCID: PMC4674470.

This article describes a number-based system for the classification of insulin regimes. It utilizes a patient-centered variable (number of injections per day) and pharmacokinetic/dynamic characteristics to craft a taxonomic system that is able to incorporate all available insulin preparations and coformulations. This framework of systematics is robust enough to include various molecules that have been recently developed. It serves to enhance understanding of the subject, and facilitates the practical or clinical usage of theoretical knowledge. We propose that number-based insulin taxonomic models should be used in clinical guidelines and recommendations rather than restricting ourselves to pharmaceutical-based classifications. PubMed articles including both review articles and clinical trials published since the year 1990 were searched, to gather evidence and information on the various types of insulins available, and how they can be used, based on the number or frequency of injections prescribed per day.

51: Karunanithi S, Kumar G, Dhull VS, Roy SG, Kumar R. Isolated Central Nervous System Relapse After 10 Years in a Case of Primary Testicular Lymphoma Detected on (18)F-FDG PET/CT. *Nucl Med Mol Imaging.* 2015 Dec;49(4):329-30. doi: 10.1007/s13139-014-0272-6. Epub 2015 Oct 16. PubMed PMID: 26550055; PubMed Central PMCID: PMC4630330.

52: Kedia S, Kurrey L, Pratap Mouli V, Dhingra R, Srivastava S, Pradhan R, Sharma R, Das P, Tiwari V, Makharia G, Ahuja V. Frequency, natural course and clinical significance of symptomatic terminal ileitis. *J Dig Dis.* 2015 Dec 15. doi: 10.1111/1751-2980.12307. [Epub ahead of print] PubMed PMID: 26670338.

AIM: The literature regarding clinical course of symptomatic terminal ileitis(TI) is scarce and treatment guidelines are lacking. We aimed at follow-up of a cohort of symptomatic TI patients to define an algorithm for their management.

METHODS: Consecutive patients with endoscopically diagnosed TI from July 2007-October 2013 were included. TI was defined as isolated involvement of terminal ileum in form of ulcers(superficial or deep) and/or nodularity without involvement of ileocaecal valve/colon. Patients were either diagnosed with

Intestinal tuberculosis(ITB) or Crohn's disease(CD) (based upon standard criteria) or received only symptomatic treatment according to clinical, endoscopic, imaging and histologic(specific to ITB/CD vs non-specific) features. Based upon above findings, an algorithm was developed to differentiate non-specific terminal ileal ulcer from specific aetiology(ITB/CD).

RESULTS: Sixty three of 898(7%) patients with ulcero-constrictive intestinal disease had TI; 18 were lost to follow-up or had follow up <6 months(mean age:34.3+13.8 years, 26 males, median follow-up:14(IQR,7-27)months). Overall 31/45 patients had CD/ITB and 14 received symptomatic treatment. Significantly more patients with ITB/CD had fever, diarrhoea, weight loss, deep ulcers, ileal thickening, and either of fever/diarrhoea/GI bleed/weight loss than symptomatically treated patients. All patients with deep ulcers (n=8) and 5/6 patients with superficial ulcer and specific histology had ITB/CD. In patients with superficial ulcers/nodularity and non-specific inflammation (n=31), absence of fever/diarrhoea/GI bleed/weight loss had a negative predictive value of 91.6% in excluding ITB/CD.

CONCLUSIONS: In symptomatic TI patients with superficial ulcers and non-specific histology, absence of fever/diarrhoea/GI bleed/weight loss, rules out the possibility of significant diagnoses like ITB/CD. This article is protected by copyright. All rights reserved.

53: Khokhar S, Gupta S, Gogia V. Iris spatula-guided epinuclear cleavage in posterior polar cataracts. *Can J Ophthalmol.* 2015 Dec;50(6):e106-8. doi: 10.1016/j.jcjo.2015.07.014. PubMed PMID: 26651314.

54: Khokhar S, Nayak B, Patil B, Changole MD, Sinha G, Sharma R, Nayak L. Subperiosteal hematoma from peribulbar block during cataract surgery leading to optic nerve compression in a patient with parahemophilia. *Int Med Case Rep J.* 2015 Dec 3;8:313-6. doi: 10.2147/IMCRJ.S93405. eCollection 2015. PubMed PMID: 26664247; PubMed Central PMCID: PMC4671758.

A 17-year-old male presented with gradual painless diminution of vision since childhood. Slit lamp examination revealed both eyes having congenital cataract. Right eye lens aspiration was performed but was uneventful, and he prepared for left eye surgery after 7 days. Immediately after giving a peribulbar block, a complete akinesia, tight eyelids, and stony hard eyeball was noted. An abaxial proptosis of 7 mm was noted. Lateral canthotomy and inferior cantholysis were done and proptosis reduced to 5 mm. Bleeding time-clotting time was normal. Proptosis worsened to 8 mm the next day. Contrast-enhanced computed tomography scan showed inferolateral subperiosteal hematoma, but drainage could not be performed due to prolonged prothrombin time and activated prothrombin time. Fresh frozen plasma was transfused. Tarsorrhaphy was performed for exposure keratopathy after his coagulation profile became normal. Hematology evaluation after 2 weeks detected factor V deficiency, and was diagnosed as Owren's disease or parahemophilia.

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Although delayed gastric emptying (DGE) after Whipple's pancreaticoduodenectomy is not life-threatening and can be treated conservatively, it results in discomfort and significant prolongation of the hospital stay and adds on to the hospital costs. To overcome this problem, we started using the isolated loop technique of reconstruction along with pancreaticogastrostomy and we present our series using this technique. All consecutive patients undergoing Whipple's pancreaticoduodenectomy in a single surgical unit from January 2009 until December 2012 were included. In the absence of hepatic and peritoneal metastasis, resection (Whipple's procedure) with curative intent was done using isolated loop technique with pancreaticogastrostomy. Delayed gastric emptying was assessed

clinically and on oral gastrograffin study. Bile reflux was also assessed on clinical parameters and evidence of beefy friable gastric mucosa on upper GI endoscopy and presence of reflux on hepatobiliary scintigraphy. A total of 52 patients were operated using this technique from January 2009 to October 2012. The mean operative time was 260.8 ± 50.3 , and the mean operative blood loss was $1,068.0 \pm 606.1$ ml. Mean gastric emptying time 106.0 ± 6.1 min (89-258 min). Three out of the 52 (5.7 %) patients had persistent vomiting in the post-operative period requiring reinsertion of NG tube. A HIDA scan done on POD7 for all patients did not show any evidence of bile reflux in any of the patients. Pancreatogastrostomy with isolated loop in pancreaticoduodenal resection markedly reduces the post-operative incidence of alkaline reflux gastritis and DGE.

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BACKGROUND: Virchow Robin spaces (VRSs) are perivascular spaces that act as drainage pathways for interstitial fluid. Dilatation of VRSs is visible on magnetic resonance images in asymptomatic individuals. However, giant dilatation of VRSs (dVRSs) is very rare. Such giant dVRSs may produce a pressure effect on surrounding structures and can be confused with more sinister conditions such as cystic neoplasm.

CASE DESCRIPTION: We describe a 30-year-old man who presented with complaints of headache, poor attention and concentration, forgetfulness, polyuria, urinary incontinence for past 3 years and hypersomnia for 3 months. He was found to have a multicystic lesion in the midbrain with extension into the third ventricle, causing hydrocephalus due to aqueductal obstruction. Although at first look, the radiologic features suggested a cystic neoplasm, a careful magnetic resonance imaging evaluation helped to establish the correct diagnosis of dVRS. Endoscopic third ventriculostomy resolved his symptoms.

CONCLUSIONS: Dilatation of VRS may produce multicystic giant lesions that can easily be confused with other pathologic condition that have a completely different prognosis and management. Knowledge about the existence of such an entity and their radiologic features is important to prevent such misdiagnosis and mismanagement in the form of biopsy/excision, which can have devastating consequences.

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Type 1 diabetes (T1D) is a complex autoimmune disease with strong genetic influence. In this study, we investigated +49A/G SNP (rs 231775) in exon 1 of cytotoxic T-lymphocyte-associated antigen 4 (CTLA4) by PCR-RFLP and its influence as a risk factor for the disease in the North Indian population. This polymorphism at codon 17 results in an amino acid substitution (Thr/Ala) in the leader peptide of the molecule. The study included 232 patients with T1D (age at onset of disease (AOD): 0.5-37 years) and 305 ethnically matched healthy controls. The DNA obtained from these 537 individuals was amplified using a set of specific primers followed by restriction enzyme digestion with Fnu4HI. The +49G allele as well as its homozygous genotype G/G was observed to be significantly higher in patients as compared to the healthy controls {(37.3% vs. 25.6%, $P = 4.96E(-05)$, OR = 1.73; 95%CI = 1.33-2.25) (15.52% vs. 6.6%, $P = 0.001$, OR = 2.62; 95% CI = 1.48-4.63) respectively}. The frequency of G/G

genotype was significantly higher in patients with early age at onset of disease (AOD:<12 years) as compared to that in the late-onset patients with AOD: ≥12 years (21.1% vs. 10.6%, $P = 0.042$, OR = 2.26; 95% CI = 1.09-4.67) as well as to that in the healthy controls (21.1% vs. 6.6%, $P = 0.00004$, OR = 3.8; 95% CI = 2.01-7.2). Further analysis revealed that the median AOD significantly reduced ($P = 0.049$) from 14 years in patients with A/A genotype to 11 and 10 years in those with A/G and G/G genotypes, respectively. These results suggest that CTLA4+49G allele, particularly in homozygous G/G condition, associates with early onset of T1D.

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BACKGROUND: Anti-inflammatory interleukin-10 (IL-10) cytokine and its genetic variations may play an important role in the pathogenesis of various human diseases including stroke.

OBJECTIVE: The aim of this present case-control study was to determine the association between IL-10 -1082G/A (rs1800896) gene polymorphism and risk of stroke in the North Indian population.

METHODS: Genotyping was carried out by using SNaPshot method (Applied Biosystems, Foster City, California, United States) for 250 ischemic stroke (IS) patients, 250 age- and sex-matched IS free controls, 100 intracerebral hemorrhage (ICH) patients, and 100 age- and sex-matched ICH free controls. IS was classified using the Trial of Org 10172 in Acute Stroke Treatment classification. Conditional logistic regression analysis with adjustment for multiple demographic and risk factor variables was used to calculate the strength of association between IL-10 (-1082G/A) polymorphism and risk of stroke.

RESULTS: Conditional logistic regression analysis showed an independent association between IL-10 -1082G/A and risk of IS under a dominant model (odds ratio [OR]=2.39, 95% confidence interval [CI]=1.34-4.27, $P=.003$) and an allelic model (OR=2.49, 95% CI 1.71-3.63, $P<.001$). An independent association between IL-10 -1082G/A, under the dominant model (OR=6.8, 95% CI 2.2-20.7, $P<.001$) and the allelic model (OR=3.4, 95% CI 1.8-6.3, $P<.001$), and the risk of ICH was also observed.

CONCLUSION: Our results suggest that IL-10 -1082G/A gene polymorphism is an independent risk factor for the risk of IS and ICH in the North Indian population. Our findings indicate that IL-10 -1082G/A polymorphism may be used as a genetic marker for identifying individuals at increased risk of developing stroke.

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ETHNOPHARMACOLOGICAL RELEVANCE: In traditional medicine, *Cissus quadrangularis* has been used as a chief ingredient of many formulation for the treatment of inflammatory and bone disorders..

OBJECTIVE: The study was carried out to investigate the anti-arthritic activity of *C. quadrangularis* hydroalcoholic extract (CQHE) and to explore the plausible mechanism of action.

MATERIALS AND METHODS: Arthritis was induced by sub plantar administration of formaldehyde (2% v/v) and 0.1ml of complete Freund's adjuvant. Joint swelling was

measured on days 8, 9 and 10 in formaldehyde-induced arthritis and on 3, 7, 14 and 21 days in adjuvant induced arthritis (AIA) respectively. Serum and ankle joints of AIA rats were used for estimation of serum TNF- α level, oxidative stress markers and synovial expression of proinflammatory cytokines/cytokine receptor (IL-1 β , IL-6, TNF-R1), angiogenesis marker (VEGF) and matrix metalloproteinases (MMP-3 & 9). An acute and 28-day oral toxicity was carried out to evaluate the safety of the test drug.

RESULTS: CQHE produced a dose dependent inhibition of joint swelling in both formaldehyde-induced and adjuvant induced arthritis. CQHE treatment also reduced serum TNF- α level, oxidative stress and synovial expression of inflammatory and angiogenesis marker. In sub acute toxicity study of CQHE, chronic administration of CQHE did not produce any physiological and pathological changes as compared to normal rats.

CONCLUSION: Our study demonstrated the anti-arthritic potential of *C. quadrangularis* and it validates its traditional use for the treatment of arthritis and other inflammatory disorders.

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Thymoma is the most common mediastinal tumor. They have varied presentation ranging from asymptomatic incidental mediastinal masses to locally extensive tumor with compressive symptoms and distant metastases. They have frequent association with various paraneoplastic syndromes (PNS). The most common PNS associated with thymoma is myasthenia gravis (MG). Patients of thymoma with MG have a favourable outcome due to early disclosure of the disease. Histologically they are classified into five subtypes and Masaoka-Koga staging system is used for staging. Surgery, chemotherapy and radiotherapy play an important role along with anti-myasthenia drugs. This review would like to highlight the association of thymoma with MG and associated clinical and therapeutic issues.

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The objectives of this study are (1) to evaluate prevalence of traumatic diaphragmatic injury (TDI), (2) identify the predictors of mortality, and (3) study the accuracy of investigations in survivors of TDI. Retrospective analysis of prospectively maintained database of TDI from January 2007 to December 2011. Emergency department (ED) records, operative details, and autopsy reports were reviewed to determine injury characteristics, treatment provided, and outcome. Statistical analyses were performed using the SPSS ver.15 software. TDI was identified in 75 individuals. Thirty-two of 75 (42.6 %) cases were brought dead to the hospital, and 43/75 (57.3 %) were survivors presented to emergency department, diagnosed to have TDI intraoperatively. Seven of 43 (16.3 %) died postoperatively. Mortality in TDI was significantly related to age ($p=0.001$), injury severity ($p<0.001$), site of TDI ($p=0.002$), and associated injuries ($p=0.021$, odds ratio of 9). Death increased with increase in the number of organ injured ($p<0.001$, odds ratio of 12). Multi-detector computer tomography (MDCT) detected TDI in 23/26 (88.5 %) cases preoperatively. Laparotomy ($p<0.001$, odds ratio of 22) and thoracotomy ($p=0.021$, with odds ratio of 9) were associated with survival benefit when compared to minimal invasive surgery in injured cases. The prevalence of TDI was 2.67 %, TDI's mark severity of

injury. Mortality increases with increasing number of organ injured. Right-sided or bilateral injury of diaphragm is associated with increased mortality.

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Focused assessment with sonography for trauma (FAST) is a limited ultrasound examination, primarily aimed at the identification of the presence of free intraperitoneal or pericardial fluid. In the context of blunt trauma abdomen (BTA), free fluid is usually due to hemorrhage, bowel contents, or both; contributes towards the timely diagnosis of potentially life-threatening hemorrhage; and is a decision-making tool to help determine the need for further evaluation or operative intervention. Fifty patients with blunt trauma abdomen were evaluated prospectively with FAST. The findings of FAST were compared with contrast-enhanced computed tomography (CECT), laparotomy, and autopsy. Any free fluid in the abdomen was presumed to be hemoperitoneum. Sonographic findings of intra-abdominal free fluid were confirmed by CECT, laparotomy, or autopsy wherever indicated. In comparing with CECT scan, FAST had a sensitivity, specificity, and accuracy of 77.27, 100, and 79.16 %, respectively, in the detection of free fluid. When compared with surgical findings, it had a sensitivity, specificity, and accuracy of 94.44, 50, and 90 %, respectively. The sensitivity of FAST was 75 % in determining free fluid in patients who died when compared with autopsy findings. Overall sensitivity, specificity, and accuracy of FAST were 80.43, 75 and 80 %, respectively, for the detection of free fluid in the abdomen. From this study, we can safely conclude that FAST is a rapid, reliable, and feasible investigation in patients with BTA, and it can be performed easily, safely, and quickly in the emergency room with a reasonable sensitivity, specificity, and accuracy. It helps in the initial triage of patients for assessing the need for urgent surgery.

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Mediastinum is an uncommon location for ectopic goiter. Primary ectopic mediastinal goiter has been reported to present mostly with compressive symptoms. We report a case of a 62-year-old man with history of Crohn's disease, who presented with symptoms of myasthenia gravis and was found to have an anterior mediastinal mass. The mass was resected completely with successful outcome. On histopathologic examination this mass turned out to be colloid goiter. This is an extremely rare presentation of a primary ectopic mediastinal goiter.

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PURPOSE: Nuclear cardiology is widely used to diagnose coronary artery disease and to guide patient management, but data on current practices, radiation dose-related best practices, and radiation doses are scarce. To address these issues, the IAEA conducted a worldwide study of nuclear cardiology practice. We present the European subanalysis.

METHODS: In March 2013, the IAEA invited laboratories across the world to document all SPECT and PET studies performed in one week. The data included age, gender, weight, radiopharmaceuticals, injected activities, camera type, positioning, hardware and software. Radiation effective dose was calculated for each patient. A quality score was defined for each laboratory as the number followed of eight predefined best practices with a bearing on radiation exposure (range of quality score 0 - 8). The participating European countries were assigned to regions (North, East, South, and West). Comparisons were performed between the four European regions and between Europe and the rest-of-the-world (RoW).

RESULTS: Data on 2,381 European patients undergoing nuclear cardiology procedures in 102 laboratories in 27 countries were collected. A cardiac SPECT study was performed in 97.9 % of the patients, and a PET study in 2.1 %. The average effective dose of SPECT was 8.0 ± 3.4 mSv (RoW 11.4 ± 4.3 mSv; $P < 0.001$) and of PET was 2.6 ± 1.5 mSv (RoW 3.8 ± 2.5 mSv; $P < 0.001$). The mean effective doses of SPECT and PET differed between European regions ($P < 0.001$ and $P = 0.002$, respectively). The mean quality score was 6.2 ± 1.2 , which was higher than the RoW score (5.0 ± 1.1 ; $P < 0.001$). Adherence to best practices did not differ significantly among the European regions (range 6 to 6.4; $P = 0.73$). Of the best practices, stress-only imaging and weight-adjusted dosing were the least commonly used.

CONCLUSION: In Europe, the mean effective dose from nuclear cardiology is lower and the average quality score is higher than in the RoW. There is regional variation in effective dose in relation to the best practice quality score. A possible reason for the differences between Europe and the RoW could be the safety culture fostered by actions under the Euratom directives and the implementation of diagnostic reference levels. Stress-only imaging and weight-adjusted activity might be targets for optimization of European nuclear cardiology practice.

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Radiation therapy (RT) is a very important part of multimodality cancer therapy. Addition of RT improves survival in many cancers, but there are some accompaniments of radiation. One of them is radiation induced heart disease (RIHD). RT for mediastinal lymphoma, breast, lung and oesophageal cancer is associated with the development of RIHD. The problem can be intensified with the addition of chemotherapy. Therapeutic modalities for RIHD are the same as in the non-irradiated population. However, surgery may be difficult in the irradiated patients. The long latent period is the reason why RIHD is not extensively studied. Survival of cancer patients has improved over past few decades, so RIHD is a growing concern especially in younger patients. In this review article, we have discussed the pathogenesis, clinical manifestation and management of RIHD along with impact of chemotherapeutic agents.

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The concept of pediatric emergency medicine (PEM) is virtually nonexistent in India. Suboptimally organized prehospital services substantially hinder the evaluation, management, and subsequent transport of the acutely ill and/or injured child to an appropriate facility. Furthermore, the management of the ill child at the hospital level is often provided by overburdened providers who, by virtue of their training, lack experience in the skills required to effectively manage pediatric emergencies. Finally, the care of the traumatized child often requires the involvement of providers trained in different specialities, which further impedes timely access to appropriate care. The recent recognition of Doctor of Medicine in Emergency Medicine as an approved discipline of study as per the Indian Medical Council Act provides an unprecedented opportunity to introduce PEM as a formal academic program in India. PEM has to be developed as a 3-year superspeciality course after completion of MD Diplomate of National Board (DNB) Pediatrics or MD DNB in EM. The National Board of Examinations that accredits and administers postgraduate and postdoctoral programs in India also needs to develop an academic program DNB in PEM. The goals of such a program would be to impart theoretical knowledge, training in the appropriate skills and procedures, development of communication and counseling techniques, and research. In this paper, the Joint Working Group of the Academic College of Emergency Experts in India (JWG ACEE India) gives its recommendations for starting 3 year DM DNB in PEM, including the curriculum, infrastructure, staffing, and training in India. This is an attempt to provide an uniform framework and a set of guiding principles to start PEM as a structured superspeciality to enhance emergency care for Indian children.

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The spectrum of gluten-related disorders has widened in recent times and includes celiac disease, non-celiac gluten sensitivity, and wheat allergy. The complex of symptoms associated with these diseases, such as diarrhea, constipation or abdominal pain may overlap for the gluten related diseases, and furthermore they can be similar to those caused by various other intestinal diseases, such as irritable bowel syndrome (IBS). The mechanisms underlying symptom generation are diverse for all these diseases. Some patients with celiac disease may remain asymptomatic or have only mild gastrointestinal symptoms and thus may qualify for the diagnosis of IBS in the general clinical practice. Similarly, the overlap of symptoms between IBS and non-celiac gluten sensitivity (NCGS) often creates a dilemma for clinicians. While the treatment of NCGS is exclusion of gluten from the diet, some, but not all, of the patients with IBS also improve on a gluten-free diet. Both IBS and NCGS are common in the general population and both can coexist with each other independently without necessarily sharing a common pathophysiological basis. Although the pathogenesis of NCGS is not well understood, it is likely to be heterogeneous with possible contributing factors such as low-grade intestinal inflammation, increased intestinal barrier function and changes in the intestinal microbiota. Innate immunity may also play a pivotal

role. One possible inducer of innate immune response has recently been reported to be amylase-trypsin inhibitor, a protein present in wheat endosperm and the source of flour, along with the gluten proteins.

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PURPOSE: Fracture union is a complex biological process, which depends upon several systemic and local factors. Disturbance of any of these factors may lead to nonunion of the fracture. These nonunions have a huge impact on quality of life as well as socioeconomical aspects. The platelets on activation release a number of growth factors and differentiation factors, which play important role in fracture healing. This study aimed to look for efficacy of platelet-rich plasma in the treatment of established fracture nonunions of long bones.

METHODS: A total of 94 patients with established nonunion of long bone (35 tibia, 30 femur, 11 humerus, 4 radius, 12 ulna, 2 with both radius and ulna) were included in this study. We injected 15-20 ml of autologous platelet-rich plasma (>2,000,000 platelets/ μ l) under image intensifier at each nonunion site. The fracture union was evaluated clinically and radiologically regularly at monthly interval till 4 months.

RESULTS: Eighty-two patients had their fracture united at the end of 4 months. Thirty-four patients showed bridging trabeculae on X-rays at the end of 2 months, while 41 patients showed bridging trabeculae at the end of third month. Twelve patients did not show any attempt of union at 4 months and were labeled as failure of treatment. There were no complications.

CONCLUSION: Platelet-rich plasma is a safe and effective treatment for the treatment of nonunions. More studies are needed to look into molecular mechanism of this fracture healing acceleration by platelet-rich plasma.

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PURPOSE: Primary pediatric gliosarcoma (pPGS) is an extremely rare entity with only 25 cases reported in the English literature. The value of concurrent and adjuvant temozolomide is not known in this group of patient.

METHODS: Five patients of pPGS treated from 2006 to 2011 were included in this retrospective analysis. All patients underwent maximal safe surgical resection. Adjuvant therapy included conformal radiation 60 Gy in 30 fractions (2 Gy daily for 5 days in a week) with concurrent temozolomide 75 mg/m² daily followed by six cycles of maintenance temozolomide 150-200 mg/m² (day 1 to day 5) every 4 weeks. We combined the survival data of 25 patients (already published) and five of our patients and analyzed them in terms of progression free survival (PFS) and overall survival (OS) using Kaplan-Meier method.

RESULTS: Male to female ratio was 1:4 and median age was 12 years (range, 7-19 years). All but one patient underwent gross total resection and four patients completed adjuvant radiotherapy as well as concurrent and adjuvant temozolomide. At a median follow up of 22.6 months (range, 0 to 45.3 months), two patients were dead and two were alive without disease while one was lost to follow up. For the pooled data, estimated median PFS and OS of all 30 patients reported in literature were 12 and 43 months, respectively. Two years PFS and OS rate for all patients was 44.2 and 62.9 %, respectively.

CONCLUSION: Adjuvant radiotherapy and temozolomide is well tolerated and show an encouraging survival in pPGS.

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PubMed PMID: 26071798.

BACKGROUND: Rectal carcinoma [RC] is often managed with preoperative radiotherapy or radio-chemotherapy followed by total mesorectal excision (TME). Efforts are being made to improve outcome by intensifying the preoperative treatment. However, the optimum therapy remains unclear. There is ongoing controversy regarding the optimum radiation dose, chemotherapy regimen and schedule. In addition there exists growing disagreement regarding the role of adjuvant chemotherapy after neoadjuvant radiation or chemoradiation.

METHODOLOGY: We reviewed the recent land mark trials to find a road map in the management of locally advanced rectal carcinoma.

RESULTS: Preoperative short course radiotherapy has long been proven to improve local disease control. The initial trials with long course chemoradiotherapy, comparing short course radiotherapy have shown to increase local control and pathological complete response rates. Since then treatment intensification of this neoadjuvant schedule has been tried by many researchers. But initial results of these treatment intensification trials, show no significant benefit and are associated with increased toxicity. There is an unmet need to stratify patients depending on risk to assign them to long course chemoradiotherapy or short course radiotherapy. Current evidence does not support the use of adjuvant chemotherapy in patients who were treated with preoperative (chemo)radiotherapy.

CONCLUSION: Preoperative radiotherapy appears to improve disease control with favorable toxicity profile and there is very little to choose between long course chemoradiotherapy and short course radiotherapy. However, long course chemoradiotherapy may be beneficial for patients with high risk features like positive circumferential resection margin [CRM] and extramural spread of >5mm. There is no role for adjuvant chemotherapy in patients who were treated preoperative (chemo)radiotherapy.

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Evaluation of ultraviolet B index (UVBI) and its impact on vitamin D synthesis is important. We observed the maximum UVBI between 11 am and 1 pm. There was no increase in serum 25(OH)D levels following sun exposure during winter as the UVBI was significantly low, emphasizing the need for vitamin D supplementation during these months. **INTRODUCTION:** The amount of vitamin D₃ synthesizing UVB irradiation (290-320 nm) reaching the earth's surface at different altitudes and seasons in different parts of India and its impact on vitamin D synthesis has not been well studied.

METHODS: The hourly UVB index (UVBI) from 10 am to 3 pm everyday for 12 months was measured by a solar meter in 4 different zones (North, Northeast, West and South) of the country. To study the impact of sun light exposure on vitamin D synthesis during winter, healthy school children aged 10-15 years were exposed to sunlight for a period of 30 min per day, between 11 am to 12 noon with 10 % body surface area, for 4 weeks. The main outcome measures were serum 25(OH)D, PTH, calcium, phosphate, and alkaline phosphatase levels before and after sun exposure.

RESULTS: The mean UVBI was highest between 11 am and 1 pm throughout the year in all locations. The highest UVBI was recorded from the North zone ($4.5 \pm 2.7 \mu\text{W}/\text{cm}^2$), while the least was recorded in the Northeast zone ($2.1 \pm 1.2 \mu\text{W}/\text{cm}^2$). UVBI readings in the Northeast zone were consistently low throughout the year, while all the other three zones showed significant seasonal

fluctuations. Surprisingly, we observed a significant decrease in serum 25(OH)D levels from baseline (6.3 ± 4.6 to 5.1 ± 2.7 ng/mL; $p < 0.001$) despite sun exposure.

CONCLUSION: The mean UVBI was highest between 11 am and 1 pm throughout the year in all locations. No increase in the serum 25(OH)D levels was observed following sun exposure in winter, emphasizing the need for vitamin D supplementation during these months.

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The main purpose of this pictorial review is to highlight the important MR imaging findings of various conditions involving the cavernous sinus in addition to brief description of normal anatomy. The pathological conditions that can involve the cavernous sinus can be categorized into infective, inflammatory, granulomatous, vascular and neoplastic causes. Imaging, especially with MRI, plays an important role not only in detection but also in definition of disease extent and in characterization of the pathology. Currently, high-resolution MR images clearly show various components of cavernous sinus which help in making a proper diagnosis and thus appropriate further management.

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Retinal pigment epithelial cells as well as choroidal melanocytes (CM) possess melanin granules. The former show clear, age-related changes (formation of lipofuscin granules with a concomitant decrease in melanin content); however, data on changes in the CM with aging are fairly limited. We examined CM in human macular and mid-peripheral areas by light- and transmission electron microscopy in 50-94 year-old donor eyes (N=12). Unlike in the choroid of lower ages, the melanocytes from aging choroid (>75 years) showed partial fusion of about 8-15 melanosomes, forming rosettes-like structures. Besides, there was evidence of emptiness in cytoplasm caused by the loss of melanosomes in aged CM, as was confirmed by quantification in macular part of choroid. In advanced aged eyes (85-94-year-old), the CM possessed many lipid droplets as well as irregular lipofuscin granules, the latter had a tendency to fuse with melanosomes, as happens in aged retinal pigment epithelium. Macrophages in their cytoplasm contained abundant irregular as well as clumped melanosomes of variable size, suggesting that damaged granules/melanocytes are cleared by these phagocytes. These obvious changes in the CM are likely to make the choroid prone to damage by visible light.

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82: Nambirajan A, Jain D, Malik P, Arava S, Mathur SR. Metastatic alveolar soft part sarcoma of the lung: Metastatic alveolar soft part sarcoma of the lung-a morphologic pitfall on cytology and aberrant CD10 expression on histology. *Diagn Cytopathol*. 2015 Dec 22. doi: 10.1002/dc.23416. [Epub ahead of print] PubMed PMID: 26693959.

Alveolar soft part sarcoma (ASPS) is a rare aggressive soft tissue sarcoma of

young adults, typically arising in the deep soft tissue of lower extremities. Although cytomorphology is characteristic enough for an accurate diagnosis in typical clinical scenarios, problems arise when it occurs in older patients, atypical sites, or in primary evaluation at metastatic sites. A 48-year-old smoker presented with breathlessness and headache for 2 months. Imaging showed a heterogeneous enhancing lesion of 6 cm × 6 cm in right middle lobe of lung, smaller miliary nodules in bilateral lungs, multiple bilateral cerebral lesions, and a mass of 3 cm × 3 cm in the left thigh. Primary lung carcinoma with brain and thigh metastases was the clinical diagnosis. Fine-needle aspiration smears of the lung lesion showed cohesive fragments of large cells with a prominent traversing branching capillary network and discohesion at periphery resulting in a pseudo-papillary appearance. Tumor cells had fine granular to vacuolated cytoplasm, frayed borders, and prominent nucleoli. Trucut biopsy from the same showed a tumor arranged in nests composed of large polygonal cells, immunopositive for CD10. Possibility of metastatic renal cell carcinoma (RCC) was offered. Abdominal imaging was, however, normal. Core biopsy from thigh showed a similar tumor, immunonegative for epithelial markers, with cytoplasmic periodic-acid-schiff positive rhomboid crystals, clinching the final diagnosis of ASPS with lung and brain metastases. There is considerable morphological and immunohistochemical overlap between ASPS and RCC. Bare nuclei on air dried smears, binucleation, metachromatic basement membrane material are subtle pointers toward ASPS. *Diagn. Cytopathol.* 2015. © 2015 Wiley Periodicals, Inc.

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OBJECTIVE: Topical emollient application reduces trans-epidermal water loss (TEWL) in preterm neonates. Coconut oil used traditionally for infant massage in India has not been evaluated for the same.

PATIENTS AND METHODS: Very low birth weight (VLBW) neonates were randomized at 12h of age to Oil (n=37) or Control (n=37) groups. Oil group neonates received twice-daily coconut oil application without massage, and Control group received standard care. TEWL was measured every 12h using an evaporimeter till Day 7 when skin swabs were obtained for bacterial growth and skin condition was assessed using a validated score.

RESULTS: Birth weight (g; mean±SD: 1213+214 vs. 1164+208, p=0.31), gestation [week; median (interquartile range): 32 (31-33) vs. 32 (29-33), p=0.10] and other baseline variables were comparable. TEWL was significantly reduced (g/m(2)/h, mean difference: -6.80, 95% confidence interval: -3.48, -10.15; p<0.01) with better skin condition and lower bacterial growth in the Oil group (20% vs. 60%, p<0.01).

CONCLUSION: Coconut oil application reduced TEWL without increasing skin colonization in VLBW neonates.

CLINICAL TRIALS REGISTRATION: NCT01758068.

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85: Nataraj V, Mathur N, Rani L, Gupta R, Bakhshi S. Serial assessment of circulating T regulatory cells and T helper 17 cells in pediatric non-Hodgkin lymphoma: a prospective study. *Leuk Lymphoma.* 2015 Dec 21:1-4. [Epub ahead of print] PubMed PMID: 26690272.

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The Monte Carlo code SIMIND is used in nuclear medicine for research purposes, and also for testing the validity of various applications. Conversion of a SIMIND-generated interfile (header and image data file) is required to process the simulated image data on a Xeleris workstation. Currently there is no conversion program provided with SIMIND to convert its interfile, which is acceptable in any nuclear medicine workstation. Manual editing of the header file is possible with any standard text editor but it is time-consuming (requiring ~1h) and stressful. To alleviate this, we have developed a conversion program using FreeMat V4.0 (an open source software similar to MATLAB from MathWorks). It takes an average of 0.04404s to convert a SIMIND SPECT data interfile and make it acceptable to Xeleris.

87: Pandey RK, Subramaniam RK, Darlong V, Lekha C, Garg R, Punj J, Rewari V, Bajpai M. Evaluation of glottic view through Air-Q Intubating Laryngeal Airway in the supine and lateral position and assessing it as a conduit for blind endotracheal intubation in children in the supine position. *Paediatr Anaesth*. 2015 Dec;25(12):1241-7. doi: 10.1111/pan.12746. Epub 2015 Sep 29. PubMed PMID: 26417722.

INTRODUCTION: We assessed the feasibility of blind orotracheal intubation in children using the Air-QILA as a conduit in supine position and the glottic view grading by fiberoptic bronchoscope (FOB) through it both in supine and lateral positions.

METHODS: After ethical approval and consent, 60 children were enrolled in the study. In the operating room, after attaching standard monitors to all children, anesthesia was induced with sevoflurane (2-8%) in oxygen (100%). Once the children became sedated, an i.v. access was established and injection glycopyrrolate (10 $\mu\text{g}\cdot\text{kg}^{-1}$), fentanyl (2 $\mu\text{g}\cdot\text{kg}^{-1}$), and atracurium (0.5 $\text{mg}\cdot\text{kg}^{-1}$) were administered. After 3 min, the Air-QILA was placed in supine position and glottic view was assessed by using FOB, in supine and right lateral decubitus position. In all children, gradings of glottic view in two different positions were noted. After that all children were turned supine, and orotracheal intubation was done blindly through the Air-QILA. The success rate, insertion time of the Air-QILA, and endotracheal intubation were noted.

RESULTS: The Air-QILA placement was successful in 57 children in first attempt and three children required second attempt. However, blind endotracheal intubations through the Air-QILA were successful in 38 children in first attempt and 12 children required second attempt. In the remaining 10 children, where blind endotracheal intubation through the Air-QILA remained unsuccessful, conventional laryngoscopy was performed. In supine and lateral positions, Grade 1 glottic view was seen in 41 and 38 of total 60 patients, respectively. Turning of all children from supine to lateral decubitus position resulted in the deterioration of grading of glottic view in eight children and improvement in two children ($P = 0.001$).

CONCLUSION: The Air-QILA is an easy to place supraglottic airway device with excellent airway seal and low airway morbidity. It may be useful as a conduit for blind orotracheal intubation in supine position and can be used as an effective alternative to FOB in low resource settings.

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Statin plays a major role in the primary and secondary prevention of cardiovascular disease (CVD). Inconsistent findings in the studies have been observed toward the risk of intracerebral hemorrhage (ICH) using higher dose of statin. To examine this issue, we performed a meta-analysis of randomized controlled trials (RCTs) to assess the association between higher dose of various statins and risk of ICH among patients with CVD. Literature was searched for studies published before June 10, 2015, using electronic database 'PubMed', 'EMBASE', and 'Google Scholar' as well as from many trial databases. The following search terms were used: 'Statin therapy' AND 'Cardiovascular Disease', AND 'Dose' AND 'Intracerebral hemorrhage', AND 'Randomized Controlled Trials' AND 'High Dose Statin'. High dose of statins was defined as atorvastatin 80 mg, simvastatin 80 mg, pravastatin 40 mg, rosuvastatin 20 mg per day. Fixed-effect model was used to estimate the risk ratio (RR) and 95% confidence interval (CI) if heterogeneity was <50%; otherwise, random-effect model was used. Begg's funnel plot was used to assess the publication bias. Seven RCTs involving 31,099 subjects receiving high-dose statin and 31,105 subjects receiving placebo were analyzed in our meta-analysis. A significant risk of ICH was observed in subjects with higher dose of statin (RR = 1.53; 95% CI: 1.16-2.01; P = 0.002). There was no difference in all-cause mortality between the two groups (RR = 0.95; 95% CI: 0.86-1.06; P = 0.36). No publication bias was observed through Begg's funnel plot. Higher dose of statins was found to be associated with the risk of ICH. Future studies are needed to confirm these findings.

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Successive Governments of India have promised to transform India's unsatisfactory health-care system, culminating in the present government's promise to expand health assurance for all. Despite substantial improvements in some health indicators in the past decade, India contributes disproportionately to the global burden of disease, with health indicators that compare unfavourably with other middle-income countries and India's regional neighbours. Large health disparities between states, between rural and urban populations, and across social classes persist. A large proportion of the population is impoverished because of high out-of-pocket health-care expenditures and suffers the adverse consequences of poor quality of care. Here we make the case not only for more resources but for a radically new architecture for India's health-care system. India needs to adopt an integrated national health-care system built around a strong public primary care system with a clearly articulated supportive role for the private and indigenous sectors. This system must address acute as well as chronic health-care needs, offer choice of care that is rational, accessible, and of good quality, support cashless service at point of delivery, and ensure accountability through governance by a robust regulatory framework. In the process, several major challenges will need to be confronted, most notably the very low levels of public expenditure; the poor regulation, rapid commercialisation of and corruption in health care; and the fragmentation of governance of health care. Most importantly, assuring universal health coverage will require the explicit acknowledgment, by government and civil society, of health care as a public good on par with education. Only a radical restructuring of the health-care system that promotes health equity and eliminates impoverishment due to out-of-pocket expenditures will assure health for all Indians by 2022--a fitting way to mark the 75th year of India's independence.

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90: Pillai RS, Mathur VP, Jain V, Shah N, Kalra S, Kumar P, Dey AB. Association between dental prosthesis need, nutritional status and quality of life of elderly subjects. *Qual Life Res*. 2015 Dec;24(12):2863-71. doi: 10.1007/s11136-015-1030-7.

Epub 2015 Jun 18. PubMed PMID: 26085327.

PURPOSE: To determine the effect of prosthesis need on nutritional status and oral health-related quality of life (OHRqoL) in elderly and to check the disparity between prosthesis need and prosthesis want in the Indian elderly.

METHODS: A total of 946 geriatric participants reporting to a geriatric medicine clinic were recruited in the study. Mini-nutritional assessment (MNA), geriatric oral health assessment (GOHAI) indices, prosthesis need according to WHO criteria, and prosthesis want was recorded along with age, gender, socioeconomic status and posterior occluding pair.

RESULTS: Significant associations exist between prosthesis need and age ($p = 0.005$), MNA ($p = 0.006$) and GOHAI ($p = 0.000$). Prosthesis demand too was influenced by age ($p = 0.004$), posterior occluding pairs ($p = 0.000$), MNA ($p = 0.012$) and GOHAI ($p = 0.000$). GOHAI was negatively correlated with upper ($r = -0.445$) and lower prosthesis need ($r = -0.460$). Participants with some prosthesis need had significantly lower MNA and GOHAI scores as compared to those with no prosthesis need. Though prosthesis need was high (79.7 %), demand was low (39.3 %).

CONCLUSION: Prosthesis need affects nutritional status and OHRqoL in elderly, and a wide gap exists between need and want of prosthesis.

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OBJECTIVE: Gangliogliomas (GG) are benign, primary neoplasms most commonly noted in young adults. Intraventricular location is very rare. Authors report a case of a multicentric intraventricular GG posing diagnostic and therapeutic challenges, and in addition, provide a detailed literature review of intraventricular GG.

METHODS: A 15-year old girl presented with features of raised intracranial pressure (ICP) of short duration. Imaging revealed two separate lesions situated in the anterior and posterior third ventricle with hydrocephalus. Patient underwent ventriculo-peritoneal shunt (VP) insertion, followed by excision of lesions in two stages. Both specimens revealed features of ganglioglioma and patient had uneventful recovery. For the literature review, only pure intraventricular GG were included while intraventricular extensions of a para/extraventricular GG were not considered. A brief comparison of clinico-radiological characteristics between intraventricular and parenchymal GG has been provided.

RESULTS: Including ours, 21 cases were identified. Male-female ratio was 1.3:1. Peak age of occurrence was 3(rd)-4(th) decade. Features of raised ICP were the most common presenting features while seizures were noted in 1/4(th) of cases. Gross total resection was achieved in 90% while recurrences and mortality were noted in 10% each.

CONCLUSION: Intraventricular GG are rare tumours. Complete surgical excision achieves excellent results. Role of adjuvant therapy is controversial.

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92: Prasad GL, Sharma BS, Mahapatra AK. Ventral foramen magnum neurenteric cysts: a case series and review of literature. *Neurosurg Rev.* 2015 Dec 10. [Epub ahead of print] PubMed PMID: 26662045.

Neurenteric cysts (NEC) are uncommon, benign, congenital lesions. Ventral foramen magnum (FM) location is very rare. The difficulties in diagnosis and management aspects are detailed with a review of the pertinent literature. We report four new cases of ventral FM NEC, all managed surgically and present a literature review of ventral FM NEC. A retrospective analysis of histopathologically confirmed cases of ventral FM NEC, operated from 2010-2013 at our institute, was performed. For review, only those cases of NEC extending from the lower clivus to the C2 level constituting the foramen magnum were included. Including our four cases, a total of 47 cases were identified. The male to female ratio was 1.2:1.

Mean age was 33.5 years (range 1-60 years). Neck pain and occipital headache were the most common symptoms, followed by limb weakness and cranial nerve paresis. Recurrent meningitis was noted in three cases. Hyperintensity on both T1- and T2-weighted sequences with absent enhancement was the most common finding on MRI. Surgical approaches were as follows: suboccipital (n=21), far/extreme lateral (n=18), retrosigmoid (n=6), and transoral (n=4). The extent of resection was as follows: total, 26; near total, 6; subtotal, 9; and partial, 3 cases. Cerebrospinal fluid diversion was done in four cases for intracranial hypertension. Mean follow-up duration was 26.8 months (range 1 month-9 years). Recurrence was noted in four (8.5 %) cases. One (2 %) case had malignant transformation. Mortality rate was 4 %. Foramen magnum neurenteric cysts are rare, benign tumors of the central nervous system. Accurate preoperative diagnosis can often be established with MRI. Surgical removal is the treatment of choice. Complete excision is ideal but often not possible. Near total removal would suffice with good progression-free periods. A long-term follow-up with radiological studies is necessary as delayed recurrences can occur.

93: Purkait S, Mallick S, Joshi PP, Mallick S, Murugan NV, Sharma MC, Suri V, Mishra B, Mathur SR. Retroperitoneal and mediastinal follicular dendritic cell sarcoma: report of 3 cases with review of literature. *Hematol Oncol*. 2015 Dec 7. doi: 10.1002/hon.2275. [Epub ahead of print] PubMed PMID: 26639109.

Follicular dendritic cell sarcoma (FDSC) is a rare malignant histiocytic proliferation of antigen presenting follicular dendritic cell. It is an uncommon primary malignancy first described by Monda et al. in 1986. Most commonly reported cases are lymph nodal. Occasional cases occur in extra nodal sites. Here, we describe the clinicopathological features, histomorphology and outcome of three patients with extranodal FDSC along with a concise review of literature on the topic. All three patients were adult females. Two patients were in third decade, and one had age of 50 years. Among the three cases, two cases are presented as retroperitoneal mass and one as mediastinal mass. CT scans revealed heterogeneously enhancing masses. All the cases showed ovoid to spindle neoplastic cells arranged predominantly in whorling, fascicular and storiform patterns with inflammatory infiltrate. Immunohistochemically, the tumor cells are positive for CD21, CD23, CD35 and Clustrin. In view of rarity and variable clinical presentation in FDSC, accurate diagnosis is necessary. Copyright © 2015 John Wiley & Sons, Ltd.

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94: Purkait S, Agarwal S, Mathur SR, Jain D, Iyer VK. Fine needle aspiration cytology features of poorly differentiated thyroid carcinoma. *Cytopathology*. 2015 Dec 12. doi: 10.1111/cyt.12270. [Epub ahead of print] PubMed PMID: 26662642.

BACKGROUND: Poorly differentiated thyroid carcinoma (PDTC) is an uncommon thyroid malignancy with biological behaviour intermediate between well-differentiated and undifferentiated thyroid carcinoma. The cytological diagnosis of PDTC is often difficult as a result of a lack of well-established cytomorphological features and a considerable degree of morphological overlap with other commoner thyroid neoplasms.

OBJECTIVE: To review the cytomorphological features of PDTC with the aim of highlighting salient diagnostic morphological features and differential diagnostic problems.

METHODS: Seven cases of histologically proven PDTC with available aspiration cytology smears were reviewed for the presence of distinguishing cytomorphological features.

RESULTS: The architectural arrangement of tumour cells was the most important diagnostic parameter. Cellular nests, three-dimensional clusters dyscohesive aggregates and singly dispersed cells in the background were present in all cases. A unique 'garlanded appearance', owing to the peripheral orientation of nuclei within the tumour cell clusters, was noted (71.4%) along with the presence of basement membrane-like material (71.4%). Transgressing vessels (85.7%) and

endothelial wrapping of cell clusters (71.4%) were also noted. Interestingly, most cases lacked necrosis and mitotic activity that are included in the histological diagnostic criteria for PDTC.

CONCLUSION: Although PDTC has considerable cytomorphological overlap with well-differentiated thyroid tumours, this present study highlights certain cytomorphological features that may suggest the correct pre-operative diagnosis, important for the appropriate management.

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95: Pushker N, Batra J, Meel R, Bajaj MS, Chawla B, Ghose S. Lateral eyelid rotation flap: a novel technique for reconstruction of full thickness eyelid defect. *Int Ophthalmol*. 2015 Dec;35(6):793-9. doi: 10.1007/s10792-015-0047-9. Epub 2015 Feb 12. PubMed PMID: 25673519.

The purpose of this study was to study anatomical, functional, and cosmetic outcomes of a novel technique, 'Lateral Eyelid Rotation Flap' for reconstruction of full thickness eyelid defect. In this prospective interventional study, 10 patients with full thickness eyelid defect measuring 1/2-2/3rd of eyelid width were included. Eyelid reconstruction was performed by single surgeon, using lateral eyelid rotation flap. Anatomic outcome was assessed by analyzing horizontal and vertical palpebral apertures (HPA and VPA), eyelid contour, and lateral canthus. Functional outcome was assessed by measuring tear film break-up time (TBUT) and Schirmer's test in both the eyes. Cosmetic outcome was evaluated by patients. Median age of patients was 56 years. Nine cases had full thickness defect following the excision of eyelid malignancy. The mean horizontal defect size was 17 ± 4.2 mm. HPA did not change significantly after surgery. VPA was statistically comparable to contralateral eye at 1-month follow-up. Lateral canthus angle recovered by 3rd month after surgery. TBUT and Schirmer's tests were comparable to contralateral eye. Eight patients graded cosmetic outcome as good to excellent. This is a new, single-stage technique for reconstruction of full thickness eyelid defects, with full thickness eyelid tissue including margin.

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Human respiratory syncytial virus (hRSV) is the most common viral pathogen of acute lower respiratory tract infection in infants and young children. The G protein of hRSV is the trans-membrane glycoprotein that is involved in the attachment of virion with the host cell. The nasopharyngeal aspirates were subjected to RT-PCR for the second hypervariable region of the G protein gene in the present investigation. Sequencing and phylogenetic analysis revealed that all the study strains clustered within the BA genotype. The study sequences further clustered in BA-9, BA-7, BA-10 and BA-12 subgroups within the BA genotype. The G proteins of the study sequences were predicted to encode 312 and 319 amino acids. Three different N-linked glycosylation sites were observed in the deduced 93-100 amino acid region. There were 40-43 serine and threonine residues that are the potential O-linked glycosylation sites. The non-synonymous/synonymous (dN/dS) ratio was less than one indicating negative selection pressure for amino acid change in the analyzed region of the G protein. The present investigation provides information on circulating strains of BA genotype from New Delhi, India. Further elaborate investigations of the BA viruses from different regions of the world will establish the basis of the rapid global spread and evolutionary pattern of this expanding genotype.

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98: Ramakrishnan S. Current Concepts in Management of Pulmonary Hypertension: Fighting the Old Demon with Modern Weapons. *Indian J Pediatr.* 2015 Dec;82(12):1128-34. doi: 10.1007/s12098-015-1827-y. Epub 2015 Jul 31. PubMed PMID: 26223872.

Pulmonary hypertension in children is a rare disease associated with high morbidity and mortality. The pathogenesis is not fully understood. Diagnostic evaluation focuses on ruling out other etiologies of pulmonary hypertension and prognosticating the disease. Congenital heart disease and left sided heart disease associated pulmonary hypertension are more common in children. Therapies for idiopathic pulmonary hypertension have evolved over the past decade. Phosphodiesterase 5 inhibitors (sildenafil, tadalafil), endothelin antagonists (Bosentan and ambrisentan) and prostanoids are the classes of drugs shown to be useful in pulmonary hypertension. However, use of these drugs in children is based on extrapolation of adult usage and on expert consensus rather than based on randomized controlled trial evidence. Despite these advances, the outcomes of various forms of pulmonary hypertension remain poor, especially in India, where some forms of therapy are not available and children often are diagnosed at an advanced stage of disease.

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100: Rodriguez-Luna D, Stewart T, Dowlathshahi D, Kosior JC, Aviv RI, Molina CA, Silva Y, Dzialowski I, Lum C, Czlonkowska A, Boulanger JM, Kase CS, Gubitza G, Bhatia R, Padma V, Roy J, Subramaniam S, Hill MD, Demchuk AM. Perihematomal Edema Is Greater in the Presence of a Spot Sign but Does Not Predict Intracerebral Hematoma Expansion. *Stroke.* 2015 Dec 22. pii: STROKEAHA.115.011295. [Epub ahead of print] PubMed PMID: 26696644.

BACKGROUND AND PURPOSE: Perihematomal edema volume may be related to intracerebral hemorrhage (ICH) volume at baseline and, consequently, with hematoma expansion. However, the relationship between perihematomal edema and hematoma expansion has not been well established. We aimed to investigate the relationship among baseline perihematomal edema, the computed tomographic angiography spot sign, hematoma expansion, and clinical outcome in patients with acute ICH.

METHODS: Predicting Hematoma Growth and Outcome in Intracerebral Hemorrhage Using Contrast Bolus CT (PREDICT) was a prospective observational cohort study of ICH patients presenting within 6 hours from onset. Patients underwent computed tomography and computed tomographic angiography scans at baseline and 24-hour computed tomography scan. A post hoc analysis of absolute perihematomal edema and relative perihematomal edema (absolute perihematomal edema divided by ICH) volumes was performed on baseline computed tomography scans (n=353). Primary outcome was significant hematoma expansion (>6 mL or >33%). Secondary outcomes were early neurological deterioration, 90-day mortality, and poor outcome.

RESULTS: Absolute perihematomal edema volume was higher in spot sign patients (24.5 [11.5-41.8] versus 12.6 [6.9-22] mL; P<0.001), but it was strongly correlated with ICH volume ($\rho=0.905$; P<0.001). Patients who experienced significant hematoma expansion had higher absolute perihematomal edema volume (18.4 [10-34.6] versus 11.8 [6.5-22] mL; P<0.001) but similar relative perihematomal edema volume (1.09 [0.89-1.37] versus 1.12 [0.88-1.54]; P=0.400). Absolute perihematomal edema volume and poorer outcomes were higher by tertiles of ICH volume, and perihematomal edema volume did not independently predict significant hematoma expansion.

CONCLUSIONS: Perihematomal edema volume is greater at baseline in the presence of a spot sign. However, it is strongly correlated with ICH volume and does not independently predict hematoma expansion.

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101: Roy M, Jain D, Yadav R, Mathur SR, Iyer VK. TTF-1 and Napsin-A Are Not Markers for Biliary Phenotype: An Immunohistochemical Study of Gallbladder Adenocarcinomas. *Am J Surg Pathol*. 2015 Dec;39(12):1742-4. doi: 10.1097/PAS.0000000000000551. PubMed PMID: 26559378.

102: Saha B, Jeeva Sankar M, Gupta S, Agarwal R, Gupta N, Deorari A, Paul VK. Iron Stores in Term and Late Preterm Small for Gestational Age and Appropriate for Gestational Age Neonates at Birth and in Early Infancy. *Indian J Pediatr*. 2015 Dec 15. [Epub ahead of print] PubMed PMID: 26666906.

OBJECTIVE: To compare body iron stores in late preterm and term small for gestational age (SGA) infants with gestation matched appropriate-for-gestational age (AGA) infants at birth and at 2 mo of age.

METHODS: In this prospective observational study, live births of 34-42 wk gestation and SGA (<10th centile for GA) were enrolled along with gestation matched AGA (10th-90th centile for GA) infants. Infants' blood samples were taken within 2 h of delivery, and repeated at 60 ± 7 d of life. Primary outcome was serum ferritin at birth and 60 d of age. Secondary outcomes were hematocrit at birth and 60 d and need for transfusion until 60 d of life.

RESULTS: A total of 37 SGA (gestation 37.2 ± 1.9 wk, birth weight 1861 ± 401 g) and 30 AGA infants (gestation 37.3 ± 1.9 wk, birth weight 2607 ± 405 g) were enrolled in the study. There was no difference in the serum ferritin between AGA and SGA infants at birth {median [IQR]: 254.0 [214.3-293.8] vs. 259.7 [217.8-301.5] µg/L; p = 0.85} or 60 d of life {147.2 [101.4-193.0] vs. 155.0 [106.6-203.6] µg/L; p = 0.81}. Mean hematocrit was 55.5 ± 9.6 vs. 52.4 ± 5.0 at birth (p = 0.10) and 32.1 ± 4.9 vs. 31.6 ± 3.8 at 60 d (p = 0.77) in SGA and AGA infants respectively. No infant required blood transfusion during the study period.

CONCLUSIONS: Iron stores of late preterm and term SGA infants are comparable to term AGA infants at birth and 2 mo of age. Recommendations on iron supplementation to these infants need to be formulated through appropriately designed randomized trials.

103: Saha S, Pandey BG, Choudekar A, Krishnan A, Gerber SI, Rai SK, Singh P, Chadha M, Lal RB, Broor S. Evaluation of case definitions for estimation of respiratory syncytial virus associated hospitalizations among children in a rural community of northern India. *J Glob Health*. 2015 Dec;5(2):010419. doi: 10.7189/jogh.05.020419. PubMed PMID: 26649172; PubMed Central PMCID: PMC4652925.

BACKGROUND: The burden estimation studies for respiratory syncytial virus (RSV) have been based on varied case definitions, including case-definitions designed for influenza surveillance systems. We used all medical admissions among children aged 0-59 months to study the effect of case definitions on estimation of RSV-associated hospitalizations rates.

METHODS: The hospital-based daily surveillance enrolled children aged 0-59 months admitted with acute medical conditions from July 2009-December 2012, from a well-defined rural population in Ballabgarh in northern India. All study participants were examined and nasal and throat swabs taken for testing by real-time polymerase chain reaction (RT-PCR) for RSV and influenza virus. Clinical data were used to retrospectively evaluate World Health Organization (WHO) case definitions (2011) commonly used for surveillance of respiratory pathogens, ie, acute respiratory illness (WHO-ARI), severe ARI (SARI) and influenza-like illness (ILI), for determination of RSV-associated hospitalization. RSV-associated hospitalization rates adjusted for admissions at non-study hospitals were calculated.

FINDINGS: Out of 505 children enrolled, 82 (16.2%) tested positive for RSV. Annual incidence rates of RSV-associated hospitalization per 1000 children were highest among infants aged 0-5 months (15.2; 95% confidence interval (CI) 8.3-26.8), followed by ages 6-23 months (5.3, 95% CI 3.2-8.7) and lowest among children 24-59 months (0.5, 95% CI 0.1-1.5). The RSV positive children were more

likely to have signs of respiratory distress like wheeze, chest in-drawing, tachypnea, and crepitation compared to RSV-negative based on bivariate comparisons. Other less commonly seen signs of respiratory distress, ie, nasal flaring, grunting, accessory muscle usage were also significantly associated with being RSV positive. Compared to the estimated RSV hospitalization rate based on all medical hospitalizations, the WHO-ARI case definition captured 86% of the total incidence, while case definitions requiring fever like ILI and SARI underestimated the incidence by 50-80%.

CONCLUSIONS: Our study suggests that RSV is a substantial cause of hospitalization among children aged <24months especially those aged <6 months. The WHO-ARI case definition appeared to be the most suitable screening definition for RSV surveillance because of its high sensitivity.

104: Saikia B, Kumar N, Sreenivas V. Prediction of extubation failure in newborns, infants and children: brief report of a prospective (blinded) cohort study at a tertiary care paediatric centre in India. Springerplus. 2015 Dec 30;4:827. doi: 10.1186/s40064-015-1607-1. eCollection 2015. PubMed PMID: 26753114; PubMed Central PMCID: PMC4695462.

BACKGROUND: Extubation failure (EF), defined as need for re-intubation within 24-72 h, is multifactorial. Factors predicting EF in adults generally are not useful in children.

OBJECTIVE: To determine the factors associated with EF and to facilitate prediction of EF in mechanically ventilated infants and children less than 12 years of age. MATERIAL AND

METHODS: Design Prospective cohort study. Setting PICU and NICU of a multispecialty tertiary care institute. Patients All consecutive newborns, infants and children, who remained on the ventilator for more than 12 h, were included. Patients with upper airway obstruction, neuromuscular disorders, complex anatomic malformations, accidental extubation, tracheostomy or death before extubation were excluded. Methods The pre-extubation clinical, laboratory and ventilatory parameters were collected for 92 cases over a one and half year period. The EF rate was calculated for each variable using STATA 9. All the treating physicians were blinded to the data collection procedure.

MEASUREMENTS AND RESULTS: Demographics were comparable between the extubation success and EF groups. Respiratory failure was the main cause requiring ventilation (46.74 %, 95 % CI 0.37-0.57) as well as EF (30.23 %, 95 % CI 0.08-0.23). 76.92 % (95 % CI 0.58-0.89) of patients that failed extubation had alterations in respiratory effort, 38.46 % (95 % CI 0.22-0.57) each had either poor or increased respiratory effort. Poor cough reflex (p = 0.001), thick endotracheal secretions (p = 0.02), failed spontaneous breathing trial (SBT) (p = 0.001) and higher rapid shallow breathing index (RSBI) (p = 0.001) were found to be associated with EF.

CONCLUSIONS: Paediatric EF is multifactorial. Increased or poor respiratory effort and failed SBT are potential factors in deciding re-intubation. Increased RSBI, poor cough reflex and thick.

105: Saini L, Chakrabarty B, Kumar A, Gulati S. A Mutation-Positive Child With Megalencephalic Leukoencephalopathy With Subcortical Cysts: Classical Imaging Findings. *Pediatr Neurol*. 2015 Dec;53(6):547-8. doi: 10.1016/j.pediatrneurol.2015.08.008. Epub 2015 Aug 21. PubMed PMID: 26365204.

106: Sankar MJ, Sinha B, Chowdhury R, Bhandari N, Taneja S, Martinez J, Bahl R. Optimal breastfeeding practices and infant and child mortality: a systematic review and meta-analysis. *Acta Paediatr Suppl*. 2015 Dec;104(467):3-13. doi: 10.1111/apa.13147. Review. PubMed PMID: 26249674.

AIM: To synthesise the evidence for effects of optimal breastfeeding on all-cause and infection-related mortality in infants and children aged 0-23 months.

METHODS: We conducted a systematic review to compare the effect of predominant, partial or nonbreastfeeding versus exclusive breastfeeding on mortality rates in

the first six months of life and effect of no versus any breastfeeding on mortality rates between 6 and 23 months of age. A systematic literature search was conducted in PubMed, Cochrane CENTRAL and CABI.

RESULTS: The risk of all-cause mortality was higher in predominantly (RR 1.5), partially (RR 4.8) and nonbreastfed (RR 14.4) infants compared to exclusively breastfed infants 0-5 months of age. Children 6-11 and 12-23 months of age who were not breastfed had 1.8- and 2.0-fold higher risk of mortality, respectively, when compared to those who were breastfed. Risk of infection-related mortality in 0-5 months was higher in predominantly (RR 1.7), partially (RR 4.56) and nonbreastfed (RR 8.66) infants compared to exclusive breastfed infants. The risk was twofold higher in nonbreastfed children when compared to breastfed children aged 6-23 months.

CONCLUSION: The findings underscore the importance of optimal breastfeeding practices during infancy and early childhood.

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107: Sankaranarayanan R, Prabhu PR, Pawlita M, Gheit T, Bhatla N, Muwonge R, Nene BM, Esmay PO, Joshi S, Poli UR, Jivarajani P, Verma Y, Zomawia E, Siddiqi M, Shastri SS, Jayant K, Malvi SG, Lucas E, Michel A, Butt J, Vijayamma JM, Sankaran S, Kannan TP, Varghese R, Divate U, Thomas S, Joshi G, Willhauck-Fleckenstein M, Waterboer T, MÅller M, Sehr P, Hingmire S, Kriplani A, Mishra G, Pimple S, Jadhav R, Sauvaget C, Tommasino M, Pillai MR; Indian HPV vaccine study group. Immunogenicity and HPV infection after one, two, and three doses of quadrivalent HPV vaccine in girls in India: a multicentre prospective cohort study. *Lancet Oncol.* 2016 Jan;17(1):67-77. doi: 10.1016/S1470-2045(15)00414-3. Epub 2015 Dec 2. PubMed PMID: 26652797.

BACKGROUND: An increase in worldwide HPV vaccination could be facilitated if fewer than three doses of vaccine are as effective as three doses. We originally aimed to compare the immunogenicity and frequency of persistent infection and cervical precancerous lesions caused by vaccine-targeted HPV after vaccination with two doses of quadrivalent vaccine on days 1 and 180 or later, with three doses on days 1, 60, and 180 or later, in a cluster-randomised trial. Suspension of the recruitment and vaccination due to events unrelated to our study meant that some enrolled girls could not be vaccinated and some vaccinated girls received fewer than the planned number of vaccinations by default. As a result, we re-analysed our data as an observational cohort study.

METHODS: Our study was designed to be done in nine locations (188 clusters) in India. Participants were unmarried girls aged 10-18 years vaccinated in four cohorts: girls who received three doses of vaccine on days 1, 60, and 180 or later, two doses on days 1 and 180 or later, two doses on days 1 and 60 by default, and one dose by default. The primary outcomes were immunogenicity in terms of L1 genotype-specific binding antibody titres, neutralising antibody titres, and antibody avidity after vaccination for the vaccine-targeted HPV types 16, 18, 6, and 11 and incident and persistent infections with these HPVs. Analysis was per actual number of vaccine doses received. This study is registered with ISRCTN, number ISRCTN98283094; and with ClinicalTrials.gov, number NCT00923702.

FINDINGS: Vaccination of eligible girls was initiated on Sept 1, 2009, and continued until April 8, 2010. Of 21258 eligible girls identified at 188 clusters, 17729 girls were recruited from 178 clusters before suspension. 4348 (25%) girls received three doses, 4979 (28%) received two doses on days 1 and 180 or later, 3452 (19%) received two doses at days 1 and 60, and 4950 (28%) received one dose. Immune response in the two-dose HPV vaccine group was non-inferior to the three-dose group (median fluorescence intensity ratio for HPV 16 1.12 [95% CI 1.02-1.23] and for HPV 18 1.04 [0.92-1.19]) at 7 months, but was inferior in the two-dose default (0.33 [0.29-0.38] for HPV 16 and 0.51 [0.43-0.59] for HPV 18) and one-dose default (0.09 [0.08-0.11] for HPV 16 and 0.12 [0.10-0.14] for HPV 18) groups at 18 months. The geometric mean avidity indices after fewer than three doses by design or default were non-inferior to those after three doses of

vaccine. Fewer than three doses by design and default induced detectable concentrations of neutralising antibodies to all four vaccine-targeted HPV types, but at much lower concentration after one dose. Cervical samples from 2649 participants were tested and the frequency of incident HPV 16, 18, 6, and 11 infections was similar irrespective of the number of vaccine doses received. The testing of at least two samples from 838 participants showed that there was no persistent HPV 16 or 18 infections in any study group at a median follow-up of 4.7 years (IQR 4.2-5.1).

INTERPRETATION: Despite the limitations imposed by the suspension of the HPV vaccination, our findings lend support to the WHO recommendation of two doses, at least 6 months apart, for routine vaccination of young girls. The short-term protection afforded by one dose of HPV vaccine against persistent infection with HPV 16, 18, 6, and 11 is similar to that afforded by two or three doses of vaccine and merits further assessment.

FUNDING: Bill & Melinda Gates Foundation.

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108: Sapkota BR, Hopkins R, Bjornes A, Ralhan S, Wander GS, Mehra NK, Singh JR, Blackett PR, Saxena R, Sanghera DK. Genome-wide association study of 25(OH) Vitamin D concentrations in Punjabi Sikhs: Results of the Asian Indian diabetic heart study. *J Steroid Biochem Mol Biol*. 2015 Dec 15. pii: S0960-0760(15)30158-8. doi: 10.1016/j.jsbmb.2015.12.014. [Epub ahead of print] PubMed PMID: 26704534.

Vitamin D deficiency is implicated in multiple disease conditions and accumulating evidence supports that the variation in serum vitamin D (25(OH)D) levels, including deficiency, is under strong genetic control. However, the underlying genetic mechanism associated with vitamin 25(OH)D concentrations is poorly understood. We earlier reported a very high prevalence of vitamin D deficiency associated with an increased risk for type 2 diabetes and obesity in a Punjabi Sikh diabetic cohort as part of the Asian Indian diabetic heart study (AIDHS). Here we have performed the first genome-wide association study (GWAS) of serum 25(OH)D on 3538 individuals from this Punjabi Sikh population. Our discovery GWAS comprised of 1387 subjects followed by validation of 24 putative SNPs ($P < 10^{-4}$) using an independent replication sample ($n=2151$) from the same population by direct genotyping. A novel locus at chromosome 20p11.21 represented by rs2207173 with minor allele frequency (MAF) 0.29, [$\beta = -0.13$, $p = 4.47 \times 10^{-9}$] between FOXA2 and SSTR4 was identified to be associated with 25(OH)D levels. Another suggestive association signal at rs11586313 (MAF 0.54) [$\beta = 0.90$; $p = 1.36 \times 10^{-6}$] was found within the regulatory region of the IVL gene on chromosome 1q21.3. Additionally, our study replicated 3 of 5 known GWAS genes associated with 25(OH)D concentrations including GC ($p = 0.007$) and CYP2R1 ($p = 0.019$) reported in Europeans and the DAB1 ($p = 0.003$), reported in Hispanics. Identification of novel association signals in biologically plausible regions with 25(OH)D metabolism will provide new molecular insights on genetic drivers of vitamin D status and its implications in health disparities.

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109: Saxena A. Editorial: Improving Pediatric Cardiac Care in India - Expanding Role of Pediatricians. *Indian J Pediatr*. 2015 Dec;82(12):1126-7. doi: 10.1007/s12098-015-1843-y. Epub 2015 Nov 9. PubMed PMID: 26548432.

110: Saxena S, Ansari SK, Raza MW, Dutta R. Antibiograms in resource limited settings: Are stratified antibiograms better? *Infect Dis (Lond)*. 2015 Dec 14:1-4. [Epub ahead of print] PubMed PMID: 26667678.

BACKGROUND: Antibiograms often act as a reference guide for empirical selection of antibiotics. Hospital-wide antibiograms constructed on the basis of cumulative antimicrobial susceptibility data from diverse patient groups can often be misleading. In order to show the significance of age- and location-stratified

antibiograms, this study compared hospital-wide antibiograms with stratified antibiograms for the clinical isolates of *Pseudomonas aeruginosa*.

METHODS: Stratified antibiograms were created on the basis of patient age (<18 years, 18-50 years, >50 years) and location (inpatient or outpatient) using all 2011, 2012 and 2013 clinical isolates of *P. aeruginosa* isolates. Susceptibility rates were compared among cumulative and stratified antibiograms using non-parametric inferential statistics.

RESULTS: The hospital-wide antibiogram under-estimated susceptibility rates in adult patients isolates (age group=18-50 years) and over-estimated susceptibility rates in isolates from the paediatric patients and elderly. Paediatric isolates were found to be less susceptible to amikacin and imipenem, whereas isolates from elderly patients >50 years were less susceptible to ciprofloxacin. Statistically significant difference was seen in the susceptibility rates of OPD and IPD isolates of *P. aeruginosa* in the case of the paediatric age group. Susceptibility rates for all drugs were lower for isolates from inpatients than from outpatients.

CONCLUSION: Age and location associated differences in susceptibility rates have the potential to influence empirical antibiotic selection, which was shown in stratified antibiograms of *P. aeruginosa* that is obscured by hospital-wide antibiograms.

111: Sethuraman G, Marwaha RK, Challa A, Yenamandra VK, Ramakrishnan L, Thulkar S, Sharma VK. Vitamin D: A New Promising Therapy for Congenital Ichthyosis. *Pediatrics*. 2016 Jan;137(1):1-5. doi: 10.1542/peds.2015-1313. Epub 2015 Dec 31. PubMed PMID: 26721572.

Severe vitamin D deficiency and rickets are highly prevalent among children with congenital ichthyosis. We report an incidental observation of a dramatic and excellent clinical response with regard to skin scaling and stiffness in children with congenital ichthyosis after short-term high-dose vitamin D supplementation that has not been previously described. Seven children with congenital ichthyosis (5 with autosomal recessive congenital ichthyosis; 2 with epidermolytic ichthyosis) and severe vitamin D deficiency (and/or rickets) were given 60 000 IU of oral cholecalciferol daily for 10 days under supervision. All children were subsequently put on recommended daily allowance of 400 to 600 IU of cholecalciferol. The main outcome measures observed and studied were reduction in skin scaling and stiffness of the extremities. All cases had severe vitamin D deficiency (serum 25-hydroxyvitamin D < 4 ng/mL) and secondary hyperparathyroidism. Six patients had clinical and radiologic evidence of rickets. Significant improvement in scaling was noticeable by day 5, showing further improvement by day 10, in 6 of the 7 cases. At 1 month, the skin had become near normal in all the cases of autosomal recessive congenital ichthyosis. Remarkable reduction in stiffness was also observed in all children. Supplementation with high-dose vitamin D followed by recommended daily allowance appears to be an effective form of therapy in the management of congenital ichthyosis with vitamin D deficiency.

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112: Shankar A, Roy S, Malik A, Rath GK, Julka PK, Kamal VK, Barnwal K, Upadhyaya S, Singh R, Srivastava V. Level of Awareness of Various Aspects of Lung Cancer Among College Teachers in India: Impact of Cancer Awareness Programmes in Prevention and Early Detection. *J Cancer Educ*. 2015 Dec 21. [Epub ahead of print] PubMed PMID: 26687206.

Lung cancer is one of the most common causes of cancer mortality among men in India and incidence is increasing, but actually, they are largely preventable diseases. In India, advanced stage at the time of presentation is responsible for high mortality and morbidity and early detection is the only way to reduce it. The purpose of this study is to know the level of awareness of various aspects of lung cancer among college teachers and impact of awareness programmes in its prevention and early detection. This assessment was part of Pink Chain Campaign-a

campaign on cancer awareness. During the cancer awareness events in 2011-2013 at various women colleges in different parts in India, pre-test related to lung cancer was followed by awareness programme. Post-test using the same questionnaire was conducted at the end of interactive session, at 6 months and 1 year. A total of 872 out of 985 teachers participated in the study (overall response rate was 88.5 %). Mean age of the study population was 41.6 years (range 26-59 years). There was a significant increase in the level of knowledge regarding lung cancer at 6 months, and this was sustained at 1 year. Among teachers who were just asked yes or no question, 117 teachers (13.4 %) were smokers and 241 teachers (27.6 %) were alcoholics. Magazines and newspapers were sources for knowledge in 50-60 % of teachers, whereas approximately 30 % of teachers were educated by TV and Internet regarding various aspects of lung cancer. Post awareness at 6 months and 1 year, Pink Chain Campaign was the major source of knowledge related to lung cancer in more than 90 % of teachers by continuous and timely update on subject. Post awareness at 6 months and 1 year, there was a significant change in alcohol and smoking habits. Major reasons for not going for check-up were ignorance (83.1 %), fear (30.1 %) and lethargic attitude (29.3 %) initially, but over time, lack of time, lethargic attitude and hesitation became important factors after knowing various aspects of lung cancer. Knowledge of lung cancer was very low among teachers. Overall awareness of risk factors, sign and symptoms, screening modalities of lung cancer has improved in a year along with practices related to smoking and alcohol, but there was not much improvement in people undergoing regular check-ups. To inculcate safe practices in the lifestyle of people, awareness programmes such as the Pink Chain Campaign should be conducted more widely and frequently.

113: Shankar A, Sahoo RK, Malik A, Kakkar A, Rath GK. Extra skeletal osteosarcoma of gall bladder: A case report. *J Egypt Natl Canc Inst.* 2015 Dec;27(4):231-4. doi: 10.1016/j.jnci.2015.05.002. Epub 2015 Jun 13. PubMed PMID: 26077931.

Extraskelatal osteosarcoma is a rare malignant soft tissue tumor. At open cholecystectomy performed for gallstones, a 45-year-old woman was found to have extraskelatal osteosarcoma on histopathological examination. 1year after surgery, the patient is symptom free and all imaging studies are normal. After multidisciplinary discussion it was decided to give no further treatment. The patient was asked to follow up three monthly. Although osteosarcoma has rarely been reported at other extraskelatal sites, this appears to be the third case of a primary tumor in the gallbladder.

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114: Sharma A, Bhakuni T, Biswas A, Ranjan R, Kumar R, Kishore K, Mahapatra M, Jairajpuri MA, Saxena R. Prevalence of Factor V Genetic Variants Associated With Indian APCR Contributing to Thrombotic Risk. *Clin Appl Thromb Hemost.* 2015 Dec 23. pii: 1076029615623376. [Epub ahead of print] PubMed PMID: 26699866.

Phenotypic resistance to activated protein C (APC) is a complex mechanism associated with increased thrombosis risk. Activated protein C resistance (APCR) is mainly influenced by FVLeiden mutation, and various other single nucleotide polymorphisms (SNPs) in FV gene are known to be associated with APCR. The aim of present study was to investigate the incidence and assess possible mechanisms of APCR in Indian patients with deep vein thrombosis (DVT). Three hundred and ten Doppler-proven patients with DVT were screened for APCR, and 50 APCR positive patients and 50 controls were typed for FVLeiden, Hong Kong, Cambridge, HR2 haplotype, Glu666Asp, Ala485Lys, and Liverpool using either polymerase chain reaction (PCR)-restriction fragment length polymorphism or allele specific PCR. FVLeiden was commonest cause of APCR (50%) in Indian patients with DVT being statistically significant ($P = .001$) compared to controls. FV Liverpool, FV Glu666Asp and FV Ala485Lys were studied for the first time in Indian population. FV Liverpool, FV Glu666Asp, Hong Kong, and Cambridge were found to be absent. High frequency of Ala485Lys in patients shows that it might be a risk factor

contributing to APCR in Indian patients with DVT. HR2 haplotype was not associated with APCR; however, presence of homozygous HR2 haplotype in patients only indicates the role it might play in Indian APCR population. In conclusion, contribution of FVLeiden causing APCR in Indian population is not as strong as previously reported in Western countries. The presence of other SNPs observed in the present study requires such studies on larger sample size to understand the molecular basis of defect.

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115: Sharma A, Kumar S. Overview of left ventricular outpouchings on cardiac magnetic resonance imaging. *Cardiovasc Diagn Ther*. 2015 Dec;5(6):464-70. doi: 10.3978/j.issn.2223-3652.2015.11.02. Review. PubMed PMID: 26675616; PubMed Central PMCID: PMC4666692.

Left ventricular outpouchings commonly include aneurysm, pseudoaneurysm, and diverticulum and are now being increasingly detected on imaging. Distinction between these entities is of prime importance to guide proper management as outcomes for these entities differ substantially. Chest radiograph is usually nonspecific in their diagnosis. Echocardiography, multi-detector computed tomography evaluation and angiography are helpful in the diagnosis with their inherent limitations. Cardiac magnetic resonance imaging (MRI) is emerging as a very useful tool that allows simultaneous anatomical and functional evaluation along with tissue characterization, which has diagnostic, therapeutic and prognostic implications. This article gives an overview of left ventricular outpouchings with special emphasis on their differentiation using cardiac MRI.

116: Sharma JB. "Effect of Antitubercular Therapy on Endometrial Function in Infertile Women with Female Genital Tuberculosis". *Infect Disord Drug Targets*. 2015 Dec 22. [Epub ahead of print] PubMed PMID: 26694016.

OBJECTIVE: Evaluation of anti-tubercular therapy on endometrium in Female Genital Tuberculosis
Method: Total of 50 women having FGTB on endometrial aspirate (positive AFB, epitheloid granuloma, positive PCR, laparoscopy or hysteroscopy findings) were enrolled. Ultrasound was performed for endometrial thickness, mean resistive index and pulsatility index before and after anti-tuberculous therapy (ATT). Diagnostic hysteroscopy was performed for intra-uterine adhesions and look of cavity before and after ATT.

RESULTS: Menstrual cycle improved after anti-tubercular therapy (ATT). Endometrial aspirate findings improved with disappearance of AFB, epitheloid granuloma and decrease in PCR (94%vs 33%). After ATT, ultrasound examination of endometrial thickness improved from 7.01±1.48 mm to 7.51±1.48 mm while mean resistive index and pulsatility index decreased from 0.729±0.304 to 0.692±0.399 and 1.180 to 1.138. With ATT, improvement was seen in hysteroscopic findings with normal looking cavity increasing from 18(36%) to 34(72.1%) and pale looking cavity decreasing from 20(42.5%) to 8(16.8%). Before ATT, prevalence of intrauterine adhesions was 62% which decreased to 28.7% after ATT. Improvement was significant only in grade I adhesions from 34% to 2.1%, (p<0.001). There was no improvement in higher grade of intrauterine adhesions with ATT with grade II (6% vs 4.2%) and grade 2a (4% vs 2.1%), grade III being (2% vs2.1%), grade IV (4% vs4.2%), grade Va (4% vs4.2%) and grade Vb (8% vs10.6%) before and after ATT respectively.

CONCLUSIONS: Early ATT improved menstrual cycle, endometrial thickness and reduced incidence of grade 1 adhesions. Advanced stages didn't show any improvement.

117: Sharma JB. Current Diagnosis and Management of Female Genital Tuberculosis. *J Obstet Gynaecol India*. 2015 Dec;65(6):362-71. doi: 10.1007/s13224-015-0780-z. Epub 2015 Oct 7. Review. PubMed PMID: 26663993; PubMed Central PMCID: PMC4666212.

Female genital tuberculosis (FGTB) is an important cause of significant morbidity, short- and long-term sequelae especially infertility whose incidence

varies from 3 to 16 % cases in India. Mycobacterium tuberculosis is the etiological agent for tuberculosis. The fallopian tubes are involved in 90-100 % cases, endometrium is involved in 50-80 % cases, ovaries are involved in 20-30 % cases, and cervix is involved in 5-15 % cases of genital TB. Tuberculosis of vagina and vulva is rare (1-2 %). The diagnosis is made by detection of acid-fast bacilli on microscopy or culture on endometrial biopsy or on histopathological detection of epithelioid granuloma on biopsy. Polymerase chain reaction may be false positive and alone is not sufficient to make the diagnosis. Laparoscopy and hysteroscopy can diagnose genital tuberculosis by various findings. Treatment is by giving daily therapy of rifampicin (R), isoniazid (H), pyrazinamide (Z) and ethambutol (E) for 2 months followed by daily 4 month therapy of rifampicin (R) and isoniazid (H). Alternatively 2 months intensive phase of RHZE can be daily followed by alternate day combination phase (RH) of 4 months. Three weekly dosing throughout therapy (RHZE thrice weekly for 2 months followed by RH thrice weekly for 4 months) can be given as directly observed treatment short-course. Surgery is rarely required only as drainage of abscesses. There is a role of in vitro fertilization and embryo transfer in women whose fallopian tubes are damaged but endometrium is healthy. Surrogacy or adoption is needed for women whose endometrium is also damaged.

118: Sharma N, Sivalingam V, Maurya S, Prasad A, Khandelwal P, Yadav SC, Patel BK. New insights into in vitro amyloidogenic properties of human serum albumin suggest considerations for therapeutic precautions. *FEBS Lett.* 2015 Dec 21;589(24 Pt B):4033-8. doi: 10.1016/j.febslet.2015.11.004. Epub 2015 Nov 7. PubMed PMID: 26554815.

Amyloid aggregates display striking features of detergent stability and self-seeding. Human serum albumin (HSA), a preferred drug-carrier molecule, can also aggregate in vitro. So far, key amyloid properties of stability against ionic detergents and self-seeding, are unclear for HSA aggregates. Precautions against amyloid contamination would be required if HSA aggregates were self-seeding. Here, we show that HSA aggregates display detergent sarkosyl stability and have self-seeding potential. HSA dimer is preferable for clinical applications due to its longer retention in circulation and lesser oedema owing to its larger molecular size. Here, HSA was homodimerized via free cysteine-34, without any potentially immunogenic cross-linkers that are usually pre-requisite for homodimerization. Alike the monomer, HSA dimers also aggregated as amyloid, necessitating precautions while using for therapeutics.

Copyright © 2015 Federation of European Biochemical Societies. Published by Elsevier B.V. All rights reserved.

119: Sharma N, Thenarasun SA, Kaur M, Pushker N, Khanna N, Agarwal T, Vajpayee RB. Adjuvant Role of Amniotic Membrane Transplantation in Acute Ocular Stevens-Johnson Syndrome: A Randomized Control Trial. *Ophthalmology.* 2015 Dec 11. pii: S0161-6420(15)01212-9. doi: 10.1016/j.ophtha.2015.10.027. [Epub ahead of print] PubMed PMID: 26686968.

PURPOSE: To evaluate the adjuvant role of amniotic membrane transplantation (AMT) in cases of acute ocular Stevens-Johnson syndrome (SJS).

DESIGN: Prospective randomized controlled clinical trial.

PARTICIPANTS: Twenty-five patients (50 eyes) with acute ocular SJS who presented within 4 weeks of onset of symptoms were recruited.

METHODS: The eyes were randomized into 2 groups that underwent either AMT with medical therapy (MT; n = 25) or standard MT alone (n = 25). The patients were evaluated at presentation and during follow-up at 1 week and 1, 3, and 6 months. The parameters evaluated were the best-corrected visual acuity (BCVA), Schirmer test, tear film breakup time (TBUT), conjunctival congestion, corneal haze, vascularization, conjunctivalization, and limbal stem cell involvement. Lid edema, symblepharon, ankyloblepharon, ectropion, entropion, trichiasis, and metaplastic lashes also were analyzed.

MAIN OUTCOME MEASURES: Maintenance of BCVA and stable ocular surface.

RESULTS: At the end of 6 months, the mean BCVA was significantly better in the AMT group (0.068 ± 0.10 logMAR units) compared with the MT group (0.522 ± 0.52 logMAR units; $P = 0.042$). The mean TBUT in the AMT and MT groups was 9.92 ± 4.1 and 6.96 ± 4.5 seconds, respectively ($P = 0.015$). The mean Schirmer test results in the AMT and MT groups were 15.4 ± 6.3 and 8.64 ± 5.4 mm, respectively ($P < 0.001$). Conjunctival congestion persisted in 44% (11/25) in the MT group compared with 4% (1/25) in the AMT group ($P = 0.03$) at the end of the 6-month follow-up. No case in the AMT group demonstrated corneal haze, limbal stem cell deficiency, symblepharon, ankyloblepharon, or lid-related complications. Among eyes in the MT group, corneal haze occurred in 44% (11/25; $P = 0.001$), corneal vascularization and conjunctivalization in 24% (6/25; $P = 0.03$), symblepharon in 16% (4/25; $P = 0.12$), ankyloblepharon in 4% (1/25; $P = 1.00$), ectropion and entropion in 8% (2/25; $P = 0.47$), and trichiasis and metaplastic lashes in 24% (6/25; $P = 0.03$) eyes.

CONCLUSIONS: Amniotic membrane transplantation is a useful adjunct to conventional MT in maintaining BCVA and a stable ocular surface in cases of acute ocular SJS. Furthermore, the adjunctive use of AMT also helps to prevent intermediate-term ocular cicatricial sequelae.

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120: Sharma N, Suri K, Sehra SV, Titiyal JS, Sinha R, Tandon R, Vajpayee RB. Collagen cross-linking in keratoconus in Asian eyes: visual, refractive and confocal microscopy outcomes in a prospective randomized controlled trial. *Int Ophthalmol*. 2015 Dec;35(6):827-32. doi: 10.1007/s10792-015-0054-x. Epub 2015 Feb 24. PubMed PMID: 25708282.

To evaluate the safety and efficacy of collagen cross-linking (CXL) in the treatment of keratoconus. A prospective randomized sham-controlled clinical trial was undertaken and 43 eyes with moderate to severe keratoconus were randomized into two groups that is the treatment ($n = 23$) and the sham ($n = 20$) group. CXL was performed with riboflavin (0.1 in 20 % dextran) followed by UVA radiation (365 nm, 3 mW/cm², 30 min). In the sham group, only riboflavin was administered without UVA radiation. Uncorrected distance visual acuity (UDVA), corrected distance visual acuity, intraocular pressure, corneal thickness, keratometry, endothelial count, confocal microscopy were evaluated at baseline and at 1 week, 1, 3, and 6 months. In cases where CXL was done, UDVA improved by mean 0.11 ± 0.06 logMAR units at 6 months ($P = 0.01$). The refractive cylinder and spherical equivalent decreased by mean of 0.62 D ($P = 0.01$) and 0.5 D ($P = 0.19$), respectively. Ultrasonic central corneal thickness decreased by mean 22.7 ± 10.3 μ m ($P = 0.01$). The maximum and minimum keratometry decreased by mean of 1.2 ± 0.8 D ($P = 0.01$) and 0.83 ± 1.2 D ($P = 0.39$), respectively. The specular count and intraocular pressure did not show any significant change. In the sham group, no significant change was observed in any parameter. Confocal analysis showed that the epithelial healing was complete at 1 week after crosslinking. The sub-epithelial plexus showed loss of nerve plexus at 1 month, regeneration of nerve fibers which started at 3 months and was complete at 6 months. The anterior stroma showed loss of keratocytes with honeycomb oedema and apoptotic bodies till 3 months. The regeneration of keratocytes started at 3 months and was complete at 6 months of follow-up. Collagen cross-linking is an effective procedure to halt progression in keratoconus. The confocal microscopic changes correlate with the outcomes in the treatment and the sham groups.

121: Sharma S, Agarwal S, Nagendra MK, Gupta DK. Omental acinar cell carcinoma of pancreatic origin in a child: a clinicopathological rarity. *Pediatr Surg Int*. 2015 Dec 22. [Epub ahead of print] PubMed PMID: 26694824.

A 6-year-old boy presented with a large subhepatic mass associated with pain abdomen. Exploration revealed a tumor in lesser omentum, completely separate from the normal pancreas that was excised completely. Histopathology suggested acinar cell carcinoma of pancreatic origin in an ectopic location. The child is well at

5 months follow-up.

122: Siddharth V, Kumar S, Vij A, Gupta SK. Cost Analysis of Operation Theatre Services at an Apex Tertiary Care Trauma Centre of India. *Indian J Surg.* 2015 Dec;77(Suppl 2):530-5. doi: 10.1007/s12262-013-0908-2. Epub 2013 Apr 12. PubMed PMID: 26730059; PubMed Central PMCID: PMC4692842.

Operating room services are one of the major cost and revenue-generating centres of a hospital. The cost associated with the provisioning of operating department services depends on the resources consumed and the unit costs of those resources. The objective of this study was to calculate the cost of operation theatre services at Jai Prakash Narayan Apex Trauma Centre, AIIMS, New Delhi. The study was carried out at the operation theatre department of Jai Prakash Narayan Apex Trauma Centre (JPNATC), AIIMS from April 2010 to March 2011 after obtaining approval from concerned authorities. This study was observational and descriptive in nature. Traditional (average or gross) costing methodology was used to arrive at the cost for the provisioning of operation theatre (OT) services. Cost was calculated under two heads; as capital and operating cost. Annualised cost of capital assets was calculated according to the methodology prescribed by the World Health Organization and operating costs were taken on actual basis; thereafter, per day cost of OT services was obtained. The average number of surgeries performed in the trauma centre per day is 13. The annual cost of providing operating room services at JPNATC, New Delhi was calculated to be 197,298,704 Indian rupees (INR) (US\$ 3,653,679), while the per hour cost was calculated to be INR 22,626.92 (US\$ 419). Majority of the expenditures were for human resource (33.63 %) followed by OT capital cost (31.90 %), consumables (29.97 %), engineering maintenance cost (2.55 %), support services operating cost (1.22 %) and support services capital cost (0.73 %). Of the total cost towards the provisioning of OT services, 32.63 % was capital cost while 67.37 % is operating cost. The results of this costing study will help in the future planning of resource allocation within the financial constraints (US\$ 1=INR 54).

123: Singh HN, Rajeswari MR. Gene regulation by long purine tracks in brain related diseases. *Data Brief.* 2015 Sep 4;5:218-25. doi: 10.1016/j.dib.2015.08.024. eCollection 2015 Dec. PubMed PMID: 26543885; PubMed Central PMCID: PMC4589756.

Purine repeats are randomly distributed in the human genome, however, they show potential role in the transcriptional deregulation of genes. Presence of long tracks of purine repeats in the genome can disturb its integrity and interfere with the cellular behavior by introducing mutations and/or triple stranded structure formation in DNA. Our data revealed interesting finding that a majority of genes carrying purine repeats, of length $n \geq 200$, were down regulated and found to be linked with several brain related diseases [1]. The unique feature of the purine repeats found in the present study clearly manifests their significant application in developing therapeutics for neurological diseases.

124: Singh L, Ranjan R, Madan R, Arava SK, Deepak RK, Singh MK. Microvessel density and Ki-67 labeling index in esthesioneuroblastoma: is there a prognostic role? *Ann Diagn Pathol.* 2015 Dec;19(6):391-6. doi: 10.1016/j.anndiagpath.2015.06.008. Epub 2015 Jul 18. PubMed PMID: 26343569.

Esthesioneuroblastoma (ENB) is a malignant neuroectodermal tumor. Hyams grading has an established role in its prognostication. The importance of microvessel density (MVD) and Ki-67 labeling index (Ki-67 LI) is well studied in various tumors, but the same remains understated in ENB. The aims of the study were to estimate proliferation index and MVD in ENB and to correlate them with Hyams grade. Twenty-six ENB cases diagnosed over a period of 5 years were included. Hyams grade, MVD, and Ki-67 LI were evaluated for each of them. The cases were categorized as low (Hyams grades 1 and 2) and high (Hyams grades 3 and 4) grades. Microvessel density and Ki-67 LI were correlated with grade. The treatment response was analyzed in different grades. The commonest histologic grade was 4

(42%). The mean Ki-67 LI was 2%, 8.2%, 30.8%, and 40.5% and mean MVD was 81.67/mm², 37/mm², 24/mm², and 25.2/mm² in grades 1, 2, 3, and 4, respectively. A statistically significant correlation of grade with Ki-67 LI ($P < .001$) and MVD ($P < .007$) was noted. Hyams grade in ENB correlates well with treatment response. Ki-67 LI is an important prognostic factor in ENB. We propose a cutoff of 25% for Ki-67 LI to differentiate low- vs high-grade ENB, but larger studies are needed for validation. Contrary to epithelial tumors, there is a decrease in MVD with increasing grade in ENB.

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125: Singh MK, Singh L, Sen S, Pushker N, Sharma A, Ahamad FC, Chawla B, Kashyap S. Role of High-mobility Group Protein A Isoforms and Their Clinicopathologic Significance in Primary Retinoblastoma. *Appl Immunohistochem Mol Morphol*. 2015 Dec 9. [Epub ahead of print] PubMed PMID: 26657872.

BACKGROUND: High-mobility group proteins A (HMGA) are more abundant in rapidly dividing and transformed cells. These are a group of proteins regulating tumorigenesis and tumor invasion. Increased expression of HMGA1 and HMGA2 has been reported in various benign and malignant tumors. The aim of the present study was to analyze expression of HMGA1 and HMGA2 proteins in retinoblastoma. **METHODS:** Protein expression of HMGA1 and HMGA2 in 80 formalin-fixed retinoblastoma tissues was performed by immunohistochemistry, and their mRNA expressions were analyzed on 40 fresh primary enucleated retinoblastoma samples by semiquantitative reverse transcription polymerase chain reaction. Results were then correlated with clinicopathologic parameters.

RESULTS: Immunohistochemical analysis of HMGA1 and HMGA2 was seen in 56.25% and 58.75% of retinoblastoma cases, respectively. mRNA expressions of HMGA1 and HMGA2 was found to be 57.55% and 62.5%, respectively. The mRNA results correlated well with immunostaining results. Expression of both HMGA1 and HMGA2 was significantly associated with choroidal invasion and poor tumor differentiation.

CONCLUSIONS: HMGA1 and HMGA2 proteins may contribute to tumorigenesis of Rb. Expression of HMGA1 and HMGA2 predicts poor prognosis and could serve as a therapeutic target in the management of RB. Further experiments are needed to determine the role of these proteins as therapeutic targets in tumorigenesis.

126: Singh N, Sreenivas V, Gupta KB, Chaudhary A, Mittal A, Varma-Basil M, Prasad R, Gakhar SK, Khuller GK, Mehta PK. Diagnosis of pulmonary and extrapulmonary tuberculosis based on detection of mycobacterial antigen 85B by immuno-PCR. *Diagn Microbiol Infect Dis*. 2015 Dec;83(4):359-64. doi: 10.1016/j.diagmicrobio.2015.08.015. Epub 2015 Aug 31. PubMed PMID: 26422085.

We developed a novel indirect sandwich immuno-polymerase chain reaction (I-PCR) assay for the detection of mycobacterial antigen 85B (Ag85B, 30kDa, Rv1886c) in pulmonary tuberculosis (PTB) and extrapulmonary tuberculosis (EPTB) patients. The amino-modified reporter DNA was covalently attached with the antidetection antibody through a heterobifunctional cross-linking agent succinimidyl 4-[N-maleimidomethyl]-cyclohexane-1-carboxylate. The detection limit of Ag85B by I-PCR was found to be 1 femtogram (fg)/mL, which was 10(6)-fold lower than an analogous enzyme-linked immunosorbent assay (ELISA). The sensitivities of 85% and 77% with I-PCR and 77.6% and 62.5% with ELISA were observed in smear-positive and smear-negative PTB patients, respectively, with high specificity. On the other hand, sensitivities of 84% and 63.7% with I-PCR and 68% and 47.5% with ELISA were observed in confirmed and clinically suspected EPTB cases, respectively, with high specificity.

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127: Singh P, Arora S, Singh A, Strand TA, Makharia GK. Prevalence of Celiac disease in Asia: A systematic review and meta-analysis. *J Gastroenterol Hepatol*. 2015 Dec 18. doi: 10.1111/jgh.13270. [Epub ahead of print] PubMed PMID: 26678020.

BACKGROUND AND AIM: Celiac disease (CD) is emerging in Asia. While a few population-based studies from Asia have reported a prevalence of CD from 0.1% to 1.3%, the exact prevalence of CD in Asia is not known. We conducted a systematic review and meta-analysis to estimate the prevalence of CD in Asia.

METHODS: On search of literature, we found 1213 articles, of which 18 articles were included. Diagnosis of CD was based on European Society of Pediatric Gastroenterology, Hepatology and Nutrition guidelines.

RESULTS: Pooled sero-prevalence of CD in Asia was 1.6% in 47,873 individuals based on positive anti-tissue transglutaminase and/or anti-endomysial antibodies. Pooled prevalence of biopsy proven CD in Asia was 0.5% in 43,955 individuals. The prevalence of CD among females was higher than in males (0.5% vs 0.4%, $P=0.04$). The pooled prevalence of CD was 0.3% in Iran, 0.5% in Turkey, 0.6% in India and 0.7% in Israel. The pooled prevalence of CD was significantly higher in Israel and India as compared to that in Iran.

CONCLUSIONS: CD is not uncommon in Asia and the sero-prevalence and prevalence of CD in Asia is 1.6% and 0.5%, respectively. The prevalence of CD varies with gender and geographic location. There is a need for population-based prevalence studies in many Asian countries to properly estimate the burden of CD in Asia. This article is protected by copyright. All rights reserved.

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128: Singh PK, Chandra PS, Vaghani G, Savarkar DP, Garg K, Kumar R, Kale SS, Sharma BS. Management of pediatric single-level vertebral hemangiomas presenting with myelopathy by three-pronged approach (ethanol embolization, laminectomy, and instrumentation): a single-institute experience. Childs Nerv Syst. 2015 Dec 21. [Epub ahead of print] PubMed PMID: 26686533.

PURPOSE: Pediatric vertebral hemangiomas (VH) are exceedingly rare benign and highly vascular tumours of the spine. There are no guidelines available for management of these patients in literature. Purpose of this study is to evaluate the role of intraoperative ethanol embolization, surgical decompression, and instrumented fusion in pediatric symptomatic VH with single-level involvement.

METHODS: Surgery consisted of intraoperative bilateral pedicular absolute alcohol injection and laminectomy at the level of pathology followed by a short-/long-segment instrumented fusion using pedicle screws and rod. Seven patients (mean age 14 ± 2.4 years, range 10-17 years, five females and two males) (age < 18 years) who were treated using this technique at our institute since March 2008 to December 2013 were enrolled in this retrospective study.

Demographical, clinical, radiological, operative details, and postoperative events were retrieved from hospital records. During follow-up visits, clinical status and imaging were recorded. Outcome assessed with clinical and neurological outcome score of American Spinal Injury Association (ASIA) Impairment Scale.

RESULTS: Duration of symptoms ranged from 3 to 60 months (mean, 14.7 ± 20.4 months). Clinical features include myelopathy with motor and sensory involvement in all (five were paraplegic), back pain in two patients, and bladder involvement in two patients. The preoperative American Spinal Injury Association (ASIA) Impairment Scale (AIS) were B in five patients and C and D in one patient each. All had pan vertebral body VH with severe cord compression in the thoracic region on imaging study. Mean duration of surgery was 248.6 ± 60 minutes (range 195-310 min) and blood loss was 535 ml (range 200-1500 ml). Immediate embolization was achieved in all patients, which allowed laminectomy and soft tissue hemangioma removal relatively easy. Post surgery, at mean follow-up of $45.3 (\pm 23.2)$ months (range 1-78 months), all patients showed improvement in power (sphincter improvement in two patients). ASIA were E in six patients and D in one patient at the last follow-up.

CONCLUSION: The present study is the largest series of pediatric symptomatic VH. This procedure is a safe, efficient method to treat symptomatic pediatric VH with severe cord compression. It seems to serve the purpose of providing embolization, cord decompression, rigid fusion at the same sitting without adding new morbidity, and preventing excessive blood loss.

129: Singh PM, Borle A, Rewari V, Makkar JK, Trikha A, Sinha AC, Goudra B. Aprepitant for postoperative nausea and vomiting: a systematic review and meta-analysis. *Postgrad Med J*. 2015 Dec 1. pii: postgradmedj-2015-133515. doi: 10.1136/postgradmedj-2015-133515. [Epub ahead of print] Review. PubMed PMID: 26627976.

Postoperative nausea and vomiting (PONV) is an important clinical problem. Aprepitant is a relatively new agent for this condition which may be superior to other treatment. A systematic review was performed after searching a number of medical databases for controlled trials comparing aprepitant with conventional antiemetics published up to 25 April 2015 using the following keywords: 'Aprepitant for PONV', 'Aprepitant versus 5-HT₃ antagonists' and 'NK-1 versus 5-HT₃ for PONV'. The primary outcome for the pooled analysis was efficacy of aprepitant in preventing vomiting on postoperative day (POD) 1 and 2. 172 potentially relevant papers were identified of which 23 had suitable data. For the primary outcome, 14 papers had relevant data. On POD1, 227/2341 patients (9.7%) patients randomised to aprepitant had a vomiting episode compared with 496/2267 (21.9%) controls. On POD2, the rate of vomiting among patients receiving aprepitant was 6.8% compared with 12.8% for controls. The OR for vomiting compared with controls was 0.48 (95% CI 0.34 to 0.67) on POD1 and 0.54 (95% CI 0.40 to 0.72) on POD2. Aprepitant also demonstrated a better profile with a lower need for rescue antiemetic and a higher complete response. Efficacy for vomiting prevention was demonstrated for 40 mg, 80 mg and 125 mg without major adverse effects. For vomiting comparison there was significant unexplainable heterogeneity (67.9% and 71.5% for POD1 and POD2, respectively). We conclude that (1) aprepitant reduces the incidence of vomiting on both POD1 and POD2, but there is an unexplained heterogeneity which lowers the strength of the evidence; (2) complete freedom from PONV on POD1 is highest for aprepitant with minimum need for rescue; and (3) oral aprepitant (80 mg) provides an effective and safe sustained antivomiting effect.

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130: Singh PM, Arora S, Borle A, Varma P, Trikha A, Goudra BG. Evaluation of Etomidate for Seizure Duration in Electroconvulsive Therapy: A Systematic Review and Meta-analysis. *J ECT*. 2015 Dec;31(4):213-25. doi: 10.1097/YCT.0000000000000212. PubMed PMID: 25634566.

: The optimum induction agent for anesthesia for electroconvulsive therapy (ECT) has been long debated. Ideal agent should be short acting with minimal suppression of seizure potentials. Recent studies have suggested longer seizure duration with etomidate in comparison to propofol, thiopental, and methohexital. The aim of the present meta-analysis was to pool data available from studies comparing systematically the efficacy of etomidate against other induction agents in terms of seizure duration (both electroencephalography (EEG) and motor). **METHODS:** We searched the PubMed, Embase, and Cochrane registry for trials evaluating etomidate against methohexital, propofol, or thiopental for duration of EEG or motor seizure in patients undergoing ECT. Specific adverse effects reported were also identified.

RESULTS: Seventeen trials were identified involving 704, 84, 2491, and 258 setting of ECT using etomidate, methohexital, thiopental, and propofol, respectively. In the etomidate group, pooled EEG seizure duration was longer by 2.23 seconds (95% confidence interval [CI], -3.62 to 8.01; P = 0.456) than methohexital, longer by 17.65 seconds (95% CI, 9.72-25.57; P < 0.001) than propofol, and longer by 11.81 seconds (95% CI, 4.26-19.35; P = 0.003) than thiopental. Pooled motor seizure duration was longer in etomidate group by 1.45 seconds (95% CI, -4.79 to 7.69; P = 0.649) than methohexital, longer by 11.13 seconds (95% CI, 6.64-15.62; P < 0.001) than propofol, and longer by 3.60 seconds (95% CI, 2.15-5.06; P < 0.001) than thiopental. Myoclonus (6 trials) and painful injection (4 trials) were commonest adverse effects with etomidate.

CONCLUSIONS: Etomidate is clearly better in terms of seizure duration potential (both motor and EEG) than propofol and thiopental. Superiority/inferiority over methohexital could not be demonstrated with the presently available literature.

131: Singhal R, Annarapu GK, Pandey A, Chawla S, Ojha A, Gupta A, Cruz MA, Seth T, Guchhait P. Hemoglobin interaction with GPIIb/IIIa induces platelet activation and apoptosis: a novel mechanism associated with intravascular hemolysis. *Haematologica*. 2015 Dec;100(12):1526-33. doi: 10.3324/haematol.2015.132183. Epub 2015 Sep 4. PubMed PMID: 26341739; PubMed Central PMCID: PMC4666328.

Intravascular hemolysis increases the risk of hypercoagulation and thrombosis in hemolytic disorders. Our study shows a novel mechanism by which extracellular hemoglobin directly affects platelet activation. The binding of Hb to glycoproteinIIb/IIIa activates platelets. Lower concentrations of Hb (0.37-3 µM) significantly increase the phosphorylation of signaling adapter proteins, such as Lyn, PI3K, AKT, and ERK, and promote platelet aggregation in vitro. Higher concentrations of Hb (3-6 µM) activate the pro-apoptotic proteins Bak, Bax, cytochrome c, caspase-9 and caspase-3, and increase platelet clot formation. Increased plasma Hb activates platelets and promotes their apoptosis, and plays a crucial role in the pathogenesis of aggregation and development of the procoagulant state in hemolytic disorders. Furthermore, we show that in patients with paroxysmal nocturnal hemoglobinuria, a chronic hemolytic disease characterized by recurrent events of intravascular thrombosis and thromboembolism, it is the elevated plasma Hb or platelet surface bound Hb that positively correlates with platelet activation.

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132: Sinha B, Chowdhury R, Sankar MJ, Martines J, Taneja S, Mazumder S, Rollins N, Bahl R, Bhandari N. Interventions to improve breastfeeding outcomes: a systematic review and meta-analysis. *Acta Paediatr Suppl*. 2015 Dec;104(467):114-34. doi: 10.1111/apa.13127. Review. PubMed PMID: 26183031.

AIM: To provide comprehensive evidence of the effect of interventions on early initiation, exclusive, continued and any breastfeeding rates when delivered in five settings: (i) Health systems and services (ii) Home and family environment (iii) Community environment (iv) Work environment (v) Policy environment or a combination of any of above.

METHODS: Of 23977 titles identified through a systematic literature search in PUBMED, Cochrane and CABI, 195 articles relevant to our objective, were included. We reported the pooled relative risk and corresponding 95% confidence intervals as our outcome estimate. In cases of high heterogeneity, we explored its causes by subgroup analysis and meta-regression and applied random effects model.

RESULTS: Intervention delivery in combination of settings seemed to have higher improvements in breastfeeding rates. Greatest improvements in early initiation of breastfeeding, exclusive breastfeeding and continued breastfeeding rates, were seen when counselling or education were provided concurrently in home and community, health systems and community, health systems and home settings, respectively. Baby friendly hospital support at health system was the most effective intervention to improve rates of any breastfeeding.

CONCLUSION: To promote breastfeeding, interventions should be delivered in a combination of settings by involving health systems, home and family and the community environment concurrently.

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133: Soni S, Chopra A, Bakhshi S, Vishwanath A, Verma D, Rai S, Kumar R. Prognostic impact of CD56 in pediatric AML. *Int J Lab Hematol*. 2015 Dec;37(6):e157-9. doi: 10.1111/ijlh.12402. Epub 2015 Jul 6. PubMed PMID: 26147745.

134: Sood R, Raut R, Tyagi P, Pareek PK, Barman TK, Singhal S, Shirumalla RK, Kanoje V, Subbarayan R, Rajerethinam R, Sharma N, Kanaujia A, Shukla G, Gupta YK, Katiyar CK, Bhatnagar PK, Upadhyay DJ, Swaminathan S, Khanna N. *Cissampelos pareira* Linn: Natural Source of Potent Antiviral Activity against All Four Dengue Virus Serotypes. *PLoS Negl Trop Dis*. 2015 Dec 28;9(12):e0004255. doi: 10.1371/journal.pntd.0004255. eCollection 2015 Dec. PubMed PMID: 26709822; PubMed Central PMCID: PMC4692392.

BACKGROUND: Dengue, a mosquito-borne viral disease, poses a significant global public health risk. In tropical countries such as India where periodic dengue outbreaks can be correlated to the high prevalence of the mosquito vector, circulation of all four dengue viruses (DENVs) and the high population density, a drug for dengue is being increasingly recognized as an unmet public health need. **METHODOLOGY/PRINCIPAL FINDINGS:** Using the knowledge of traditional Indian medicine, Ayurveda, we developed a systematic bioassay-guided screening approach to explore the indigenous herbal bio-resource to identify plants with pan-DENV inhibitory activity. Our results show that the alcoholic extract of *Cissampelos pariera* Linn (Cipa extract) was a potent inhibitor of all four DENVs in cell-based assays, assessed in terms of viral NS1 antigen secretion using ELISA, as well as viral replication, based on plaque assays. Virus yield reduction assays showed that Cipa extract could decrease viral titers by an order of magnitude. The extract conferred statistically significant protection against DENV infection using the AG129 mouse model. A preliminary evaluation of the clinical relevance of Cipa extract showed that it had no adverse effects on platelet counts and RBC viability. In addition to inherent antipyretic activity in Wistar rats, it possessed the ability to down-regulate the production of TNF- α , a cytokine implicated in severe dengue disease. Importantly, it showed no evidence of toxicity in Wistar rats, when administered at doses as high as 2g/Kg body weight for up to 1 week.

CONCLUSIONS/SIGNIFICANCE: Our findings above, taken in the context of the human safety of Cipa, based on its use in Indian traditional medicine, warrant further work to explore Cipa as a source for the development of an inexpensive herbal formulation for dengue therapy. This may be of practical relevance to a dengue-endemic resource-poor country such as India.

135: Stephen D, Vatsa M, Lodha R, Kabra SK. A Randomized Controlled Trial of 2 Inhalation Methods When Using a Pressurized Metered Dose Inhaler With Valved Holding Chamber. *Respir Care*. 2015 Dec;60(12):1743-8. doi: 10.4187/respcare.03213. Epub 2015 Jun 16. PubMed PMID: 26081179.

BACKGROUND: Information on the comparative efficacy of single deep breathing versus tidal breathing for inhaled asthma medications is limited, although such information can be of much use for the treatment of patients suffering from asthma. The objective of the present study was to compare the relative difference in improvement in peak expiratory flow (PEF) with single maximal inhalation with breath-holding versus 5 tidal breaths during inhalation of salbutamol from a pressurized metered dose inhaler (pMDI) with valved holding chamber (VHC) in children 5-15 y of age with asthma.

METHODS: The randomized controlled trial was carried out on children with asthma between 5 and 15 y of age using a pMDI with a VHC either by a single deep breath with breath-hold or 5 tidal breaths. The experimental group received 200 μ g of salbutamol from the pMDI with VHC with a single maximal inhalation and breath-hold technique, whereas the control group received 200 μ g of salbutamol from pMDI with VHC using the 5 tidal breaths technique. The outcome variable, PEF, was reassessed 30 min after salbutamol use.

RESULTS: Eighty-two subjects (mean age 8.79 ± 2.5 y, 65 boys and 17 girls) were analyzed. There was significant improvement in the PEF, from baseline (pre-intervention) to post-intervention within the single maximal inhalation with breath-hold group and tidal breathing group independently ($P < .001$). The mean difference in improvement in PEF between the single maximal inhalation with a breath-hold and 5 tidal breaths group was 30.0 ± 18.16 and 28.29 ± 13.94 L/min,

respectively, and was not statistically significant ($P = .88$).

CONCLUSIONS: Single maximal inhalation with a breath-hold technique is not superior to tidal breathing for improvement in PEF following salbutamol inhalation. Either method may be used in children between 5 and 15 y of age. (India's Clinical Trials Registry CTRI/2013/04/003559.).

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136: Talwar P, Sinha J, Grover S, Agarwal R, Kushwaha S, Srivastava MV, Kukreti R. Meta-analysis of apolipoprotein E levels in the cerebrospinal fluid of patients with Alzheimer's disease. *J Neurol Sci.* 2016 Jan 15;360:179-87. doi: 10.1016/j.jns.2015.12.004. Epub 2015 Dec 3. PubMed PMID: 26723997.

The possible association between Apolipoprotein E (ApoE) levels in the cerebrospinal fluid (CSF) and Alzheimer's disease (AD) has been studied extensively. However, previous findings have been inconsistent. We conducted a meta-analysis of observational studies, seeking to provide insights into ApoE's potential as a biomarker for AD. A systematic literature search of PubMed (MEDLINE), EMBASE, and Web of Science was performed to retrieve relevant studies evaluating ApoE levels in CSF from AD subjects and controls. The association between ApoE levels in the CSF and AD was estimated by the weighted mean difference (WMD) and 95% confidence interval (CI) using a random-effect model. We identified 24 studies that included 1064 AD cases and 1338 non-demented controls. Although the pooled WMD did not indicate a significant association between AD and ApoE levels (-0.30mg/l; 95% CI: -0.69 to 0.09; $P=0.13$), sub-group analysis controlling for patient sample size ($n \geq 43$) revealed significantly lower ApoE levels (WMD: -0.66mg/l; 95% CI: -1.02 to -0.31; $P=0.0002$) among patients with AD than in controls. Publication bias was absent and sensitivity analysis did not result in any significant change in the pooled estimates, indicating highly stable results. The present meta-analysis indicates the potential of CSF ApoE levels as a predictor of AD association.

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137: Talwar S, Agarwal P, Choudhary SK, Airan B. Functionally Univentricular Heart With Right Atrial Isomerism and Mixed Total Anomalous Pulmonary Venous Drainage. *World J Pediatr Congenit Heart Surg.* 2015 Dec 23. pii: 2150135115590457. [Epub ahead of print] PubMed PMID: 26701620.

Patients with right atrial isomerism and total anomalous pulmonary venous connection (TAPVC) in a functionally univentricular heart are a challenging subset with a high mortality rate. We present the case of a patient with univentricular heart who had right atrial isomerism and associated mixed TAPVC (supracardiac, cardiac, and infracardiac). The anatomy was delineated precisely, and the patient underwent first-stage univentricular palliation consisting of TAPVC repair and bilateral bidirectional superior cavopulmonary anastomosis.

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138: Tejwani PL, Nerkar H, Dhar A, Kataria K, Hari S, Thulkar S, Chumber S, Kumar S, Srivastava A. Regression of Fibroadenomas with Centchroman: a Randomized Controlled Trial. *Indian J Surg.* 2015 Dec;77(Suppl 2):484-9. doi: 10.1007/s12262-013-0886-4. Epub 2013 Feb 21. PubMed PMID: 26730050; PubMed Central PMCID: PMC4692841.

Fibroadenoma is a common cause of breast lump in young girls. Nearly 10-15 % of lesions regress spontaneously over the period of 6 to 60 months. The aim of study was to investigate the role of Centchroman in regression of fibroadenoma in comparison to natural observation and to study the association of hormonal receptors with degree of regression. The study was carried out at the outpatient clinic of Department of Surgery, All India Institute of Medical Sciences, New

Delhi, from November 2004 to November 2007. Patients aged ≤ 30 years with fibroadenoma were included. Patients with fibroadenoma equal to or larger than 5 cm and with polycystic ovarian disease were excluded. Patients were randomized in two groups. Patients in active therapy arm were prescribed Centchroman 30 mg daily for 12 weeks, and another group was observed without any intervention (control group). Patients were followed at weeks 4, 8, 12, and 24 to assess response to therapy. Twenty-two (31.88 %) fibroadenomas in Centchroman arm disappeared completely as compared to four (7.69 %) in control arm over a period of 6 months. There was a decrease in the volume of fibroadenoma in ten (19.23 %) patients in control arm and 36 (52.17 %) patients in Centchroman arm. Centchroman therapy allowed 31 % fibroadenoma to regress completely with scanty menses or amenorrhea as the only side effect.

139: Tewari N, Singh N, Singh S, Agarwal N, Gupta NK. Corpus alienum on hard palate - An unusual "misdiagnosis" of foreign body: A case report. *Int J Pediatr Otorhinolaryngol.* 2015 Dec;79(12):2463-5. doi: 10.1016/j.ijporl.2015.10.020. Epub 2015 Nov 3. PubMed PMID: 26545792.

Corpus alienum or foreign body on hard palate is a rare presentation and often associated with a scare secondary to misdiagnosis. The potential dangers of respiratory obstruction, mucosal tear, nasopharyngeal inflammation and gastro-intestinal bleeding make these non-invasive foreign bodies, life threatening. A case report of a three year old girl with a 2.5cm \times 2cm plastic sticker lodged on hard palate for four months and misdiagnosed as salivary gland tumor has been reported along with a literature review.

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140: Tiwari V, Khan SA, Kumar A, Poudel R, Kumar VS. Functional improvement after hip arthroscopy in cases of active paediatric hip joint tuberculosis: a retrospective comparative study vis-À-vis conservative management. *J Child Orthop.* 2015 Dec;9(6):495-503. doi: 10.1007/s11832-015-0705-5. Epub 2015 Nov 16. PubMed PMID: 26573054; PubMed Central PMCID: PMC4661146.

PURPOSE: Tuberculosis of the hip joint is a significant cause of preventable disability, especially in children. The aim of our study was to evaluate the functional results of hip arthroscopy done in a cohort of patients with hip joint tuberculosis and to compare them with the outcome of conservatively managed cases.

METHODS: This was a retrospective cohort study in which we evaluated the records of 22 hip arthroscopies performed in known cases of tuberculosis of the hip joint in children less than 12 years of age. A note of the demographic and clinical parameters like age, duration of symptoms, stage of the disease, time period of follow-up, any complications during surgery, and pre- and post-operative modified Harris hip score (MHHS) was made in all cases. We compared the results with an age-matched cohort of 44 children with hip joint tuberculosis who were treated non-operatively with anti-tuberculosis therapy and traction in the same tertiary care institute.

RESULTS: The arthroscopic findings in our series included synovitis, chondral erosions of the femoral head and/or acetabulum, pannus formation over the femoral head and/or acetabulum, and labral tears. The various arthroscopic procedures which were done included joint lavage, synovectomy, labral debridement and cheilectomy. The mean follow-up was 45 months, with the minimum being 36 months. There was a statistically significant change in the mean MHHS after hip arthroscopic procedures ($p < 0.001$); the difference in the mean post- and pre-operative MHHS was independent of age, stage or duration of follow-up. There was a statistically significant difference ($p < 0.05$) between the magnitude of improvement in MHHS after hip arthroscopy and that after conservative management.

CONCLUSIONS: Arthroscopy of the hip joint in children in cases of tuberculosis can serve as an emerging therapeutic modality. It is an effective and safe minimally invasive procedure, and helps in improving the functional outcome in early disease.

141: Tiwari V, Ansari T, Mittal S, Sharma P, Nalwa A. Giant cell tumour of tendon sheath with simultaneous two tendon involvement of the foot treated with excision of the tumour and reconstruction of the flexor retinaculum using tibialis posterior tendon in a paediatric patient: A rare case report. *Foot Ankle Surg.* 2015 Dec;21(4):e60-3. doi: 10.1016/j.fas.2015.08.004. Epub 2015 Sep 25. PubMed PMID: 26564735.

Giant cell tumour of tendon sheath is a benign soft tissue tumour arising from the tendon sheath. The involvement of foot and ankle by such tumours is relatively rare. Children are not commonly afflicted by this condition. All such tumours are reported to arise either from a single tendon sheath or one joint. We report a case of giant cell tumour of tendon sheath in a 12-year-old child, arising simultaneously from the tendon sheaths of tibialis posterior and flexor digitorum longus tendons, as well as extending into the ankle joint. It was treated by complete excision of the mass along with the tendon sheaths with reconstruction of the flexor retinaculum. The location of the tumour, age of the patient, diffuse nature of the tumour and novel technique of reconstruction of the flexor retinaculum make this case extremely rare and the first to be reported in literature.

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142: Tripathy K, Ramesh P, Sharma YR. Headache and amaurosis fugax in an obese woman. *BMJ.* 2015 Dec 1;351:h6365. doi: 10.1136/bmj.h6365. PubMed PMID: 26627820.

143: Vibha D, Behari M, Goyal V, Shukla G, Bhatia R, Srivastava AK, Vivekanandhan S. Clinical profile of Monomelic Amyotrophy (MMA) and role of persistent viral infection. *J Neurol Sci.* 2015 Dec 15;359(1-2):4-7. doi: 10.1016/j.jns.2015.10.026. Epub 2015 Oct 18. PubMed PMID: 26671077.

OBJECTIVES: The objective of our study was to describe the clinical characteristics, electrophysiology, MRI features and conduct viral assays in patients with Monomelic Amyotrophy (MMA) and follow them up over one year.

METHODS: Consecutive patients with MMA who attended the Neurology services from April 2013 to March 2014 were included. Age and sex matched controls were taken for the purpose of viral assay analysis. The clinical evaluation was repeated at six months and one year.

RESULTS: 109 cases and 109 controls were included in the study. The patients were predominantly males (98.2%; n=107/109) and had involvement of upper limbs (83.5%; n=91/109). 26 (23.8%) patients with clinically unilateral involvement had bilateral neurogenic changes in the electromyography. Serological assays of Japanese E, West Nile Virus, and Poliovirus 1, 2 and 3, HIV 1 and 2 were negative in all the cases and controls.

CONCLUSIONS: Patients with MMA are predominantly young males with upper limb wasting and weakness. MRI of the cervical cord is normal in most of the patients (67.9%). The present study did not find any evidence of the association of viral infection in MMA.

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