List of publications of AIIMS, New Delhi for the month of December, 2017 [Source: www.pubmed.com].

1: Agarwal M, Singh A, Guru V, Seth R. Juvenile Myelomonocytic Leukemia: Profile and Outcome. Indian J Pediatr. 2017 Dec;84(12):963-964. doi: 10.1007/s12098-017-2415-0. Epub 2017 Jul 29. PubMed PMID: 28755173.

2: Agarwal R, Sharma M, Saxena R, Sharma P. Surgical outcome of superior rectus transposition in esotropic Duane syndrome and abducens nerve palsy. J AAPOS. 2018 Feb;22(1):12-16.e1. doi: 10.1016/j.jaapos.2017.10.004. Epub 2017 Dec 1. PubMed PMID: 29199032.

PURPOSE: To evaluate surgical outcome of superior rectus transposition (SRT) in esotropic Duane syndrome (DS) and abducens nerve palsy.
METHODS: Retrospective medical record analysis of all patients with esotropic DS and abducens nerve palsy treated with SRT at our center with minimum follow-up of 6 months. Primary outcome measures were esotropia in primary position and abduction limitation. Secondary outcome measures included head turn, stereopsis, and cyclovertical deviations.
RESULTS: A total of 20 eyes of 19 patients were included: 9 with DS and 10 with traumatic abducens nerve palsy. One patient had bilateral esotropic DS. Mean age of DS patients was 12.5 ± 10.1 years; of abducens nerve palsy patients, 25.4 ± 11.3 years. Medial rectus recession (MRc) of 3.5 mm was additionally performed in 5 DS eyes. An adjustable MRc 5.6 ± 2.2 mm with or without augmentation suture was performed in all abducens nerve palsy patients. In DS patients, esotropia improved from 27.5Δ ± 5.4Δ to 3.6Δ ± 6.4Δ ($P < 0.001$), abduction limitation reduced from -3.8 to -1.8 ($P < 0.001$), and head posture improved from 20° to 4° ($P < 0.001$) at 6 months. In abducens nerve palsy patients, esotropia improved from 51.5Δ ± 18.8Δ to 6.1Δ ± 10.7Δ ($P < 0.001$), abduction limitation reduced from -3.8 to -2, and head posture improved from 25° to 8° ($P < 0.001$). Stereopsis improved in 4 patients ($P = 0.12$). No patient had vertical deviation or torsional diplopia.
CONCLUSIONS: In our patient cohort with esotropic DS or abducens nerve palsy, SRT reduced esotropia and improved abduction. Because of a long-term exotropic drift, initial undercorrection in the immediate postoperative period may prevent eventual overcorrection.

DOI: 10.1016/j.jaapos.2017.10.004
PMID: 29199032

3: Agarwal R, Chawla B, Asif MI, Pujari A. Bilateral ocular surface squamous neoplasia with bilateral periocular basal cell carcinoma in a case of xeroderma pigmentosum. BMJ Case Rep. 2017 Dec 2;2017. pii: bcr-2017-220882. doi: 10.1136/bcr-2017-220882. PubMed PMID: 29197837.

Xeroderma pigmentosum (XP) is an autosomal recessive disorder associated with multiple oculocutaneous manifestations.We discuss a unique case of XP having bilateral ocular surface squamous neoplasia (OSSN) and periocular basal cell carcinoma. In the right eye, a large OSSN mass involving the ocular surface extensively along with intraocular invasion was noted, whereas in the left eye, the tumour mass was involving the limbus, and extending up to three clock hours. Because of extensive disease in the right eye, orbital exenteration was performed, and for the left eye, a wide excision of the mass with triple freeze thaw cryo application to the margins followed by amniotic membrane grafting was done. Basal cell carcinoma was noted around the medial canthus on both sides. The right-sided basal cell carcinoma was treated by wide excision followed by a forehead rotation flap and the left-sided lesion was managed with topical 5% imiquimod cream.

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PMID: 29197837 [Indexed for MEDLINE]

Conflict of interest statement: Competing interests: None declared.

4: Aggarwal A, Srivastava DN, Jana M, Sharma R, Gamanagatti S, Kumar A, Kumar V, Malhotra R, Goyal V, Garg K. Comparison of Different Sequences of Magnetic Resonance Imaging and Ultrasonography with Nerve Conduction Studies in Peripheral Neuropathies. World Neurosurg. 2017 Dec;108:185-200. doi: 10.1016/j.wneu.2017.08.054. Epub 2017 Aug 24. PubMed PMID: 28842238.

BACKGROUND: Peripheral neuropathies refer to a group of disorders in which there is damage to the nerves of the peripheral nervous system. Electrophysiologic studies are the main stay for the diagnosis of peripheral neuropathies. However, direct visualization of the nerves is possible with exact localization of site of disease with high-resolution ultrasonography (USG) and 3-Tesla magnetic resonance imaging (MRI) scanner, and newer magnetic resonance (MR) sequences.
METHODS: We performed a cross-sectional study including 55 patients and 64 nerves with upper limb peripheral neuropathies. All patients included underwent high-resolution focused USG of the nerves and MR neurography. A nerve conduction velocity study was performed for reference.
RESULTS: The diagnostic confidence of the turbo spin echo T2-weighted (T2W) MR sequence was seen to be highest, with a sensitivity of 95.31%, whereas it was 81.25% for USG. Continuity of the nerve in patients with traumatic neuropathy was seen in 65.7% and 62.86% (22/35) nerves on MRI and USG, respectively. T1-weighted and T2W MR sequences were seen to be equally effective in establishing the continuity of the nerve. Increase in the caliber/thickening was seen in 77% of cases on MRI and 73.8% of cases on USG. Neuroma formation was seen equally on both MR and USG in 60.66%. We consistently found low fractional anisotropy (FA) values at the site of disease.
CONCLUSIONS: USG is a sensitive technique to diagnose peripheral neuropathies and it should be used as a screening modality for focused MR to be performed later. Turbo spin echo T2W fast spin has the highest sensitivity to identify nerve disease and is comparable with nerve conduction studies. Among the newer sequences, diffusion tensor imaging should be performed to increase diagnostic confidence.

DOI: 10.1016/j.wneu.2017.08.054
PMID: 28842238 [Indexed for MEDLINE]

5: Aggarwal H, Khan L, Chaudhary O, Kumar S, Makhdoomi MA, Singh R, Sharma K, Mishra N, Lodha R, Srinivas M, Das BK, Kabra SK, Luthra K. Alterations in B Cell Compartment Correlate with Poor Neutralization Response and Disease Progression in HIV-1 Infected Children. Front Immunol. 2017 Dec 1;8:1697. doi: 10.3389/fimmu.2017.01697. eCollection 2017. PubMed PMID: 29250072; PubMed Central PMCID: PMC5717014.

Several B cell defects are reported in HIV-1 infected individuals including variation in B cell subsets, polyclonal B cell activation and exhaustion, with broadly neutralizing antibodies elicited in less than 10-20% of the infected population. HIV-1 disease progression is faster in children than adults. B Lymphocyte Stimulator (BLyS), expressed on dendritic cells (DCs), is a key regulator of B cell homeostasis. Understanding how DCs influence B cell phenotype and functionality (viral neutralization), thereby HIV-1 disease outcome in infected children, is important to develop interventional strategies for restoration of B cell function. In this study, a total of 38 vertically transmitted HIV-1 infected antiretroviral therapy (ART) naïve children and 25 seronegative controls were recruited. Based on the CD4 counts and years post-infection, infected children were categorized as long-term non-progressors

(LTNPs) (n=20) and progressors (n=18). Eight of these progressors were followed up at 6-12 months post-ART. Percentages (%) of DCs, B cell subsets, and expression of BLyS on DCs were analyzed by flow-cytometry. Plasma levels of B cell growth factors were measured by ELISA and viral neutralization activity was determined using TZM-bl assay. Lower (%) of myeloid DCs (mDCs), plasmacytoid DCs, and high expression of BLyS on mDCs were observed in HIV-1 infected progressors than seronegative controls. Progressors showed lower % of naive B cells, resting memory B cells and higher % of mature activated, tissue-like memory B cells as compared to seronegative controls. Higher plasma levels of IL-4, IL-6, IL-10, and IgA were observed in progressors vs. seronegative controls. Plasma levels of IgG were high in progressors and in LTNPs than seronegative controls, suggesting persistence of hypergammaglobulinemia at all stages of disease. High plasma levels of BLyS in progressors positively correlated with poor viral neutralizing activity. Interestingly on follow up, treatment naïve progressors, post-ART showed increase in resting memory B cells along with reduction in plasma BLyS levels that correlated with improvement in viral neutralization. This is the first study to demonstrate that reduction in plasma BLyS levels correlates with restoration of B cell function, in terms of viral neutralization in HIV-1-infected children.

DOI: 10.3389/fimmu.2017.01697
PMCID: PMC5717014
PMID: 29250072

6: Aggarwal P, Gupta A, Garg A. Multivariate brain network graph identification in functional MRI. Med Image Anal. 2017 Dec;42:228-240. doi: 10.1016/j.media.2017.08.007. Epub 2017 Aug 30. PubMed PMID: 28866433.

Motivated by recent interest in identification of functional brain networks, we develop a new multivariate approach for functional brain network identification and name it as Multivariate Vector Regression-based Connectivity (MVRC). The proposed MVRC method regresses time series of all regions to those of other regions simultaneously and estimates pairwise association between two regions with consideration of influence of other regions and builds the adjacency matrix. Next, modularity method is applied on the adjacency matrix to detect communities or functional brain networks. We compare the proposed MVRC method with existing methods ranging from simple Pearson correlation to advanced Multivariate Adaptive Sparse Representation (ASR) methods. Experimental results on simulated and real fMRI dataset demonstrate that MVRC is able to extract functional brain networks that are consistent with the literature. Also, the proposed MVRC method is 650-750 times faster compared to the existing ASR method on 90 node network.

DOI: 10.1016/j.media.2017.08.007
PMID: 28866433 [Indexed for MEDLINE]

7: Aggarwal S, Sharma SC, N Das S. Dynamics of regulatory T cells (T(regs)) in patients with oral squamous cell carcinoma. J Surg Oncol. 2017 Dec;116(8):1103-1113. doi: 10.1002/jso.24782. Epub 2017 Aug 22. PubMed PMID: 28833201.

BACKGROUND AND OBJECTIVES: The immune dysfunction in oral squamous cell carcinoma (OSCC) patients is one of the major factors for growth and dissemination of tumor affecting disease-free survival.
METHODS: The phenotypic and functional characteristics of Regulatory T (Treg) CD4+ CD25+ FoxP3+ subsets in OSCC patients were assessed by multicolor flow cytometry and its effector component (TGF-β) by Western blot and qRT-PCR.
RESULTS: An increased ($P<0.05$) prevalence of Treg phenotypes (CD4+ CD25+ , CD4+ FoxP3+ , CD8+ FoxP3+ , CD4+ CD25+ FoxP3+) was observed in the peripheral circulation of OSCC patients that positively correlated with clinicopathological features. The increased frequency of CD4+ CD8+ CD25+ FoxP3+ , a unique T cell

subset, CTLA-4+ , GITR+ , NrP1+ , HLA-DR+ , CD127+ , Tbet+ , TGF-β+ , and granzyme B+ (GzmB) Tregs also showed a significantly higher prevalence in OSCC patients. Functionally, CD4+ FoxP3+ Tregs showed skewed expression of IL-2, IL-10, and IL-35 in patients as compared with the normal controls. Further, enhanced expression of CCR5 and CCR7 on Tregs with up regulation of their ligands (CCL5, CCL19, and CCL21) in tumor cells indicates efficient recruitment and trafficking of Tregs to the tumor site.
CONCLUSION: It seems reasonable to assume that modulation of functional dynamics of selective Treg subsets may be useful in developing immunotherapeutic strategy for OSCC patients.

DOI: 10.1002/jso.24782
PMID: 28833201 [Indexed for MEDLINE]

8: Agrawal M, Borkar SA, Mahapatra AK. Letter to the Editor Regarding "Efficacy of Early Surgery for Neurological Improvement in Spinal Cord Injury without Radiographic Evidence of Trauma in the Elderly". World Neurosurg. 2017 Dec;108:962. doi: 10.1016/j.wneu.2017.07.137. PubMed PMID: 29179410.

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34: Gangadaran P, Li XJ, Lee HW, Oh JM, Kalimuthu S, Rajendran RL, Son SH, Baek SH, Singh TD, Zhu L, Jeong SY, Lee SW, Lee J, Ahn BC. A new bioluminescent reporter system to study the biodistribution of systematically injected tumor-derived bioluminescent extracellular vesicles in mice. Oncotarget. 2017 Nov 18;8(66):109894-109914. doi: 10.18632/oncotarget.22493. eCollection 2017 Dec 15. PubMed PMID: 29299117; PubMed Central PMCID: PMC5746352.

In vivo biodistribution and fate of extracellular vesicles (EVs) are still largely unknown and require reliable in vivo tracking techniques. In this study, in vivo bioluminescence imaging (BLI) using Renilla luciferase (Rluc) was developed and applied to monitoring of EVs derived from thyroid cancer (CAL-62 cells) and breast cancer (MDA-MB-231) in nude mice after intravenous administration and was compared with a dye-based labeling method for EV derived from CAL-62 cells. The EVs were successfully labeled with Rluc and visualized by BLI in mice. In vivo distribution of the EVs, as measured by BLI, was consistent with the results of ex vivo organ analysis. EV-CAL-62/Rluc showed strong signals at lung followed by liver, spleen & kidney ($P < 0.05$). EV-MDA-MB-231/Rluc showed strong signals at liver followed by lung, spleen & kidney ($P < 0.05$). EV-CAL-62/Rluc and EV-MDA-MB-231/Rluc stayed in animal till day 9 and 3, respectively; showed a differential distribution. Spontaneous EV-CAL-62/Rluc shown distributed mostly to lung followed by liver, spleen & kidney. The new BLI system used to show spontaneous distribution of EV-CAL-62/Rluc in subcutaneous CAL-62/Rluc bearing mice. Dye (DiR)-labeled EV-CAL-62/Rluc showed a different distribution in vivo & ex vivo compared to EV-CAL-62/Rluc. Fluorescent signals were predominately detected in the liver ($P < 0.05$) and spleen ($P < 0.05$) regions. The bioluminescent EVs developed in this study may be used for monitoring of EVs in vivo. This novel reporter-imaging approach to visualization of EVs in real time is expected to pave the way for monitoring of EVs in EV-based treatments.

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Conflict of interest statement: CONFLICTS OF INTEREST The authors declare that no competing interests exist.

35: Garg B, Batra S, Dixit V. Solitary anterior osteochondroma of cervical spine: An unusual cause of dysphagia and review of literature. J Clin Orthop Trauma. 2018 Jun;9(Suppl 2):S5-S7. doi: 10.1016/j.jcot.2017.12.010. Epub 2017 Dec 29.

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Subacute sclerosing panencephalitis (SSPE) is a slowly progressive degenerative disorder caused by measles virus. It is characterised by typical clinical and electrophysiological features in the form of slow myoclonic jerks, with progressive cognitive impairment, visual symptoms, and periodic complexes on EEG, with raised titres of anti-measles antibodies in CSF and serum. Atypical presentations of SSPE have been reported including brainstem involvement, ADEM-like presentation, acute encephalitis, and cerebellar ataxia. Presentation with predominant extrapyramidal features is uncommon. We describe a case of SSPE presenting with extensive rigidity with highly elevated CPK values, mimicking neuroleptic malignant syndrome (NMS) which was most probably due to central dopaminergic blockade induced by the disease process. To our knowledge, this is the first case of SSPE presenting with a NMS-like syndrome.

DOI: 10.1007/s13365-017-0602-4
PMID: 29243130

37: Garg H, Aggarwal S, Misra MC, Priyadarshini P, Swami A, Kashyap L, Jaiswal R. Mid to long term outcomes of Laparoscopic Sleeve Gastrectomy in Indian population: 3-7 year results - A retrospective cohort study. Int J Surg. 2017 Dec;48:201-209. doi: 10.1016/j.ijsu.2017.10.076. Epub 2017 Nov 6. PubMed PMID: 29122706.

INTRODUCTION: Few studies have addressed the mid to long term impact of Laparoscopic Sleeve Gastrectomy (LSG) on weight loss and obesity associated co-morbidities, particularly in Indian population. The aim of this study is to assess the efficacy of LSG in morbid obesity over 3-7 years follow up.
MATERIALS AND METHODS: Data of all patients who underwent LSG between January 2008 and March 2015 and completed their at least 1 year follow up till March 2016 was retrospectively reviewed using a prospectively collected database.
RESULTS: 424 patients undergoing primary LSG were included. The mean age (±2SD) was 39.8 ± 22.5 years and the mean Body Mass Index (BMI) (±2SD) was 46.67 ± 15.8 kg/m2. 124 patients (29.2%) were super-obese (BMI >50 kg/m2). The percentage follow-up at 1 year, 3 years, 5 years and 7 years was 78.3%, 66.7%, 42.3% and 38.4% respectively. The mean percentage Excess weight Loss (%EWL) (±2SD) at 1year, 3years, 5years, and 7years was 71.8 (±50.5%), 64.95% (±41.8%), 61.7% (±46.2%) and 57.15% (±50.2%) respectively. The preoperative BMI significantly correlated with %EWL at 5 year (r2 = 0.107, p = 0.018). The overall complication rate was 5.8%. Early complications included staple line leak (1.2%), bleeding (1.2%), deep venous thrombosis (0.4%) and 30-day mortality (0.21%). Late complications included stricture formation (0.21%) and new onset Gastro-esophageal Reflux Disease (GERD) (2.8%).At 5 years, 83.3% of diabetic patients showed remission while rest showed improvement in glycemic control with decrease in dosage. 69.3% patients showed improvement in hypertension, 100% patients showed improvement in Obstructive Sleep Apnea Syndrome, 75% patients showed improvement in hypothyroidism after surgery. GERD resolved in 62.8% patients while worsened in 11.4% patients.
CONCLUSIONS: LSG has durable weight loss at 5 year with %EWL of 61% and significant resolution of obesity associated co-morbidities.

DOI: 10.1016/j.ijsu.2017.10.076
PMID: 29122706 [Indexed for MEDLINE]

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It is well-established that immunocompromised people are at increased risk of HPV-related disease compared with those who are immunocompetent. Prophylactic HPV sub-unit vaccines are safe and immunogenic in immunocompromised people and it is strongly recommended that vaccination occur according to national guidelines. When delivered to immunocompromised populations, HPV vaccines should be given as a 3-dose regimen.

DOI: 10.1016/j.pvr.2017.06.002
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PMID: 29179867

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We evaluated the in-vitro effect of potassium on CD4+ T cells and the role of urinary potassium as a potential biomarker of disease activity in patients with ulcerative colitis (UC). This prospective observational cohort study included healthy controls (n=18) and UC patients [n=30, median age: 40 (IQR: 28-46) years, 17 males)] with active disease(assessed by Mayo score) from September 2015-May 2016. Twenty-four hours urinary potassium along with fecal calprotectin (FCP) were estimated in UC patients (at baseline and follow-up after 3-6 months) and controls. In healthy volunteers, we also assessed the effect of potassium on CD4+ T cells differentiated in the presence of Th17 polarizing condition. UC patients had significantly higher FCP (368.2±443.04 vs 12.44±27.51, $p<0.001$) and significantly lower urinary potassium (26.6±16.9 vs 46.89±35.91, $p=0.01$) levels than controls. At follow-up, a significant increase in urinary potassium among patients who had clinical response [n=22, 21.4 (14.4-39.7) to 36.5 (20.5-61.6), $p=0.04$] and remission [n=12, 18.7 (9.1-34.3) to 36.5 (23.4-70.5), $p=0.05$] was accompanied with a parallel decline in FCP. On in-vitro analysis, potassium under Th17 polarizing conditions significantly inhibited IL-17 and interferon-[Formula: see text] expression while favoring the induction of FoxP3+ T cells. Therefore, urinary potassium levels are inversely associated with disease activity in UC with in-vitro data supporting an immune-tolerant role of potassium.

DOI: 10.1038/s41598-017-18046-x
PMCID: PMC5741718
PMID: 29273710

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A 3-month-old child was presented with haemoptysis with respiratory distress. Imaging was suggestive of a cavitary lesion in the lung with surrounding consolidation. Diagnosis of a primary lung pathology like congenital pulmonary airway malformation was considered. Based on clinical suspicion and prior experience, a Tc-99m pertechnetate radionuclide study was performed, which clinched the diagnosis of foregut duplication cyst. Intraoperative findings confirmed the presence of a neuroenteric cyst. The child remains asymptomatic on follow-up awaiting neurosurgical intervention for the intraspinal component of the cyst.

DOI: 10.1136/bcr-2017-222537
PMID: 29197847 [Indexed for MEDLINE]

Conflict of interest statement: Competing interests: None declared.

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Pancreatic injury is an uncommon and frequently missed injury in abdominal trauma patients. However, missed pancreatic injury is associated with significant morbidity and mortality. This study was conducted to know the burden of pancreatic injury and its outcome in our setup. A retrospective analysis of 53 patients with pancreatic injury from January 2008 through March 2012 at the Jai Prakash Narayan Apex Trauma Center (JPNATC), All India Institute of Medical Sciences (AIIMS), New Delhi. Pancreatic injuries were present in 1.18 % of all trauma admissions. Blunt trauma to the abdomen (n = 49, 92.45 %) due to road traffic injury (n = 38, 71.70 %) was the most common mechanism of injury. Isolated pancreatic injury was present in eight (15.09 %) patients. Grade III pancreatic injury (n = 25, 47 %) was the most common. Of these patients, 18.86 % were managed nonoperatively and 81.13 % were managed operatively. Among the operatively managed patients (n = 43), 74.4 % were operated due to pancreatic injury and 25.5 % were operated due to associated injuries. Distal pancreatectomy with or without spleen preservation (n = 25) was the most common operative procedure done. Three out of five patients of Whipple operation for pancreatic injury died. Pancreatic injury was associated with complications in 43.40 % and death in 20 % (n = 11). Pancreatic injury is rare, but delay in diagnosis of pancreatic injury has been associated with higher morbidity and mortality. Low-grade pancreatic injury with intact main pancreatic duct (MPD) could be successfully managed nonoperatively, whereas in high-grade pancreatic injury, an operative intervention is invariably necessary. Distal pancreatectomy with spleen preservation is a desirable goal whenever possible for distal transaction of the pancreas. Whipple resection should be reserved only for hemodynamically stable patients with complex pancreaticoduodenal injury and is associated with high mortality.

DOI: 10.1007/s12262-016-1515-9
PMCID: PMC5711710 [Available on 2018-12-01]
PMID: 29217902

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Disseminated Histoplasmosis in India: Literature Review and Retrospective Analysis of Published and Unpublished Cases at a Tertiary Care Hospital in North India. Mycopathologia. 2017 Dec;182(11-12):1077-1093. doi: 10.1007/s11046-017-0191-z. Epub 2017 Oct 27. Review. PubMed PMID: 29080114.

PURPOSE: Published literature lacks systematic studies on disseminated histoplasmosis in India, and previous reviews on its epidemiology in India were conducted two decades back. Thus, we review the Indian studies published in this century to understand the recent epidemiology of histoplasmosis in India and do a retrospective analysis of all cases diagnosed at our institute.
METHODS: A literature of review search was done in Pubmed/Medline and Scopus. Studies published during January 2001-December 2015 were considered along with retrospective analysis of cases presented to us. A distinction was made in the clinical presentation of immunocompetent and immunocompromised cases.
RESULTS: Ninety-five included studies described 204 cases, and 10 cases from our retrospective analysis were included. The mean age at presentation was 45.1 ± 15.4 years [range 3-83, median 45, interquartile range 37-55], and male-to-female ratio was 6:1. Most cases were reported from northern and northeastern states of India along the rivers Ganges, Yamuna and Brahmaputra and in people associated with agricultural activity. About 33% of cases were immunocompromised, out of which immunosuppression due to HIV was seen in 72% cases. The mean age of presentation was significantly lower in immunocompromised cases (37.9 vs. 49.2 years; $p < 0.00001$, Mann-Whitney test), and mortality was also higher (10 vs. 27.5%, $p = 0.01$, Fisher's exact test). Adrenal involvement was in significantly higher proportion of immunocompetent patients compared to immunocompromised population.
CONCLUSIONS: Disseminated histoplasmosis is being increasingly recognized in India. There is a need to undertake well-designed, analytical studies utilizing appropriate diagnostic modalities to understand the epidemiology of this neglected disease in proper perspective.

DOI: 10.1007/s11046-017-0191-z
PMID: 29080114 [Indexed for MEDLINE]

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The ability to use indirect cyanmethemoglobin method using 20 µl of dried blood spots (DBSs) on filter paper for the analysis of haemoglobin (Hb) levels could be an important diagnostic tool for areas that have limited access to laboratory facilities. We assessed the validity of a method for Hb estimation in which a single drop of whole blood was directly taken on the filter paper. We collected 124 DBSs containing 20 µl of blood (filter paper A) and single drop of whole blood (filter paper B) from subjects living in Nainital, Uttrakhand. Estimation of Hb was done by indirect cyanmethemoglobin method in both the filter papers. A correction factor for predicting value of Hb from DBSs of single drop of whole blood was established. The Bland-Altman plot suggested that the difference in Hb values obtained by the single drop of blood and 20 µl of DBSs was within the 1.5 SD limits, suggesting high validity of the correction factor. The estimation of Hb using single drop of whole blood on filter paper after applying the correction factor provides results similar to indirect cyanmethemoglobin method using 20 µl of blood. Hence, single drop of whole blood on filter paper can be used as an alternate method for estimation of Hb in large scale community surveys.

DOI: 10.1007/s12288-016-0766-8
PMCID: PMC5640525 [Available on 2018-12-01]
PMID: 29075070

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Asparagine synthetase deficiency is a rare inborn error of metabolism caused by a defect in ASNS, a gene encoding asparagine synthetase. It manifests with a severe neurological phenotype manifesting as severe developmental delay, congenital microcephaly, spasticity and refractory seizures. To date, nineteen patients from twelve unrelated families have been identified. Majority of the mutations are missense and nonsense mutations in homozygous or compound heterozygous state. We add another case from India which harbored a novel homozygous missense variation in exon 11 and compare the current case with previously reported cases.

DOI: 10.1007/s11011-017-0073-6
PMID: 28776279 [Indexed for MEDLINE]

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The recently proposed molecular genetic criteria promise improved risk-prediction in B-cell acute lymphoblastic leukemia (B-ALL). This study assesses their utility in BCR-ABL1 negative pediatric B-ALL, particularly with respect to end-induction minimal residual disease (MRD). The DNA was analyzed for copy number alterations in CDKN2A/B, PAX5, IKZF1, and other genes. Seventy-six cases with median age 7 years (2 months-18 years) included MRD-positive (24; 32%), and MRD negative-standard (20; 26%), intermediate (20; 26%), & high risk (12;16%) cases. The risk classification was based on age, initial total leukocyte count, central nervous system involvement, cytogenetics, day 8 prednisolone response and MRD status after induction chemotherapy. The genetic profile based on Moorman's criteria identified two subgroups with different event free survival (EFS) (0.77 vs. 0.38; p=.045) and overall survival (OS) (0.90 vs. 0.30; p=.037) in the MRD-negative intermediate-risk group. The genetic profile also separated two subgroups with different EFS (0.75 vs. 0.41; p=.036) in the MRD-positive group, however the OS was not different (0.75 vs. 0.57; p=.293).

DOI: 10.1080/10428194.2017.1408087
PMID: 29199525

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A 34-year-old Indian man presented to an orthopaedician with gradually progressive hypoesthesia affecting his right lower limb and an ipsilateral common peroneal nerve swelling around the knee. The nerve swelling was diagnosed as a peripheral nerve sheath tumour based on MRI findings and was excised, only to be revealed as leprous nerve abscess on histopathology later. The patient developed right foot drop as a result of common peroneal nerve biopsy. This case presents several learning points in the diagnosis of pure neural leprosy.

DOI: 10.1136/bcr-2017-221023
PMID: 29212869 [Indexed for MEDLINE]

Conflict of interest statement: Competing interests: None declared.

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Present study outlines a comprehensive view of published information about the underlying mechanisms operational for progression of chronic hepatitis C virus (HCV) infection to development of hepatocellular carcinoma (HCC). These reports are based on the results of animal experiments and human based studies. Although, the exact delineated mechanism is not yet established, there are evidences available to emphasize the involvement of HCV induced chronic inflammation, oxidative stress, insulin resistance, endoplasmic reticulum stress, hepato steatosis and liver fibrosis in the progression of HCV chronic disease to HCC. Persistent infection with replicating HCV not only initiates several liver alterations but also creates an environment for development of liver cancer. Various studies have reported that HCV acts both directly as well as indirectly in promoting this process. Whereas HCV related proteins, like HCV core, E1, E2, NS3 and NS5A, modulate signal pathways dysregulating cell cycle and cell metabolism, the chronic infection produces similar changes in an indirect way. HCV is an RNA virus and does not integrate with host genome and therefore, HCV induced hepatocarcinogenesis pursues a totally different mechanism causing imbalance between suppressors and proto-oncogenes and genomic integrity. However, the exact mechanism of HCC inducement still needs a full understanding of various steps involved in this process.

DOI: 10.4254/wjh.v9.i36.1305
PMCID: PMC5756719
PMID: 29359013

Conflict of interest statement: Conflict-of-interest statement: The authors declare here that there is no conflict of interest related to this study among them.

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BACKGROUND: Estimates of influenza-associated mortality are important for

national and international decision making on public health priorities. Previous estimates of 250 000-500 000 annual influenza deaths are outdated. We updated the estimated number of global annual influenza-associated respiratory deaths using country-specific influenza-associated excess respiratory mortality estimates from 1999-2015.
METHODS: We estimated country-specific influenza-associated respiratory excess mortality rates (EMR) for 33 countries using time series log-linear regression models with vital death records and influenza surveillance data. To extrapolate estimates to countries without data, we divided countries into three analytic divisions for three age groups (<65 years, 65-74 years, and ≥75 years) using WHO Global Health Estimate (GHE) respiratory infection mortality rates. We calculated mortality rate ratios (MRR) to account for differences in risk of influenza death across countries by comparing GHE respiratory infection mortality rates from countries without EMR estimates with those with estimates. To calculate death estimates for individual countries within each age-specific analytic division, we multiplied randomly selected mean annual EMRs by the country's MRR and population. Global 95% credible interval (CrI) estimates were obtained from the posterior distribution of the sum of country-specific estimates to represent the range of possible influenza-associated deaths in a season or year. We calculated influenza-associated deaths for children younger than 5 years for 92 countries with high rates of mortality due to respiratory infection using the same methods.
FINDINGS: EMR-contributing countries represented 57% of the global population. The estimated mean annual influenza-associated respiratory EMR ranged from 0·1 to 6·4 per 100 000 individuals for people younger than 65 years, 2·9 to 44·0 per 100 000 individuals for people aged between 65 and 74 years, and 17·9 to 223·5 per 100 000 for people older than 75 years. We estimated that 291 243-645 832 seasonal influenza-associated respiratory deaths (4·0-8·8 per 100 000 individuals) occur annually. The highest mortality rates were estimated in sub-Saharan Africa (2·8-16·5 per 100 000 individuals), southeast Asia (3·5-9·2 per 100 000 individuals), and among people aged 75 years or older (51·3-99·4 per 100 000 individuals). For 92 countries, we estimated that among children younger than 5 years, 9243-105 690 influenza-associated respiratory deaths occur annually.
INTERPRETATION: These global influenza-associated respiratory mortality estimates are higher than previously reported, suggesting that previous estimates might have underestimated disease burden. The contribution of non-respiratory causes of death to global influenza-associated mortality should be investigated.
FUNDING: None.

DOI: 10.1016/S0140-6736(17)33293-2
PMCID: PMC5935243 [Available on 2019-03-31]
PMID: 29248255

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INTRODUCTION: Cue-induced craving is known to be associated with a higher risk of relapse, wherein drug-specific cues become conditioned stimuli, eliciting conditioned responses. Cue-reactivity paradigm are important tools to study psychological responses and functional neuroimaging changes. However, till date, there has been no specific study or a validated paradigm for inhalant cue-induced craving research. The study aimed to develop and validate visual cue stimulus for

inhalant cue-associated craving.
METHOD: The first step (picture selection) involved screening and careful selection of 30 cue- and 30 neutral-pictures based on their relevance for naturalistic settings. In the second step (time optimization), a random selection of ten cue-pictures each was presented for 4s, 6s, and 8s to seven adolescent male inhalant users, and pre-post craving response was compared using a Visual Analogue Scale(VAS) for each of the picture and time. In the third step (validation), craving response for each of 30 cue- and 30 neutral-pictures were analysed among 20 adolescent inhalant users.
RESULTS: Findings revealed a significant difference in before and after craving response for the cue-pictures, but not neutral-pictures. Using ROC-curve, pictures were arranged in order of craving intensity. Finally, 20 best cue- and 20 neutral-pictures were used for the development of a 480s visual cue paradigm.
CONCLUSION: This is the first study to systematically develop an inhalant cue picture paradigm which can be used as a tool to examine cue induced craving in neurobiological studies. Further research, including its further validation in larger study and diverse samples, is required.

DOI: 10.1016/j.ajp.2017.10.004
PMID: 29126097 [Indexed for MEDLINE]

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Trauma to the naso-orbito-ethmoid region invariably results in detachment of medial canthal tendon. The shape of medial canthus is of important esthetic and functional concern. Accurate reposition of the medial canthus is important to achieve normal form and function. The various available techniques advocate open approach leaving an obvious scar in the esthetically prominent region. This technique intends to address these fractures through a closed approach with the possibility to make finer adjustments as and when required. We report the experience of treating 4 naso-orbito-ethmoid fractures with a new innovative technique with predictable results.

DOI: 10.1016/j.jormas.2017.12.004
PMID: 29246757

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Traditional examination has inherent deficiencies. Objective Structured Clinical Examination (OSCE) is considered as a method of assessment that may overcome many such deficits. OSCE is being increasingly used worldwide in various medical specialities for formative and summative assessment. Although it is being used in various disciplines in our country as well, its use in the stream of general surgery is scarce. We report our experience of assessment of undergraduate students appearing in their pre-professional examination in the subject of general surgery by conducting OSCE. In our experience, OSCE was considered a

better assessment tool as compared to the traditional method of examination by both faculty and students and is acceptable to students and faculty alike. Conducting OSCE is feasible for assessment of students of general surgery.

DOI: 10.1007/s12262-016-1521-y
PMCID: PMC5711713 [Available on 2018-12-01]
PMID: 29217905

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The etiology of ITP remains unknown but its pathogenesis consists of loss of tolerance to platelet antigens. There is a complex dysregulation of the immune system involving both the B cells and the T cells. Splenectomy is the standard second line option in steroid refractory chronic ITP patients. However, costs of surgery and reluctance for surgery in severely thrombocytopenic patients on part of surgeons are major obstacles in resource limited settings. Rituximab has been used in both the standard doses of 375 mg/m2 and low doses of 100 mg/m2 with similar results. We studied the utility of low dose Rituximab (@100 mg/m2 weekly × 4 doses) in resource limited settings. Overall response, complete response (CR) and partial response (PR) rates were 47.6% (10/21), 33.3% (7/21) and 14.3% (3/21) respectively. Median time to response in patients achieving CR was 75 days (range 45-185 days) while in patients achieving PR it was 105 days (range 45-165 days). However, there was no significant difference between males and females achieving CR or PR. We also observed that patients who had earlier responded to any form of treatment were more likely to respond to Rituximab treatment. The cumulative relapse free survival (RFS) at 13 months was 78%. By giving lower dose, six times less than conventional dosing dose, we have been able to demonstrate cost effectiveness in our study population. We were able to administer all the doses in day care without any major adverse events leading to further cost savings on in-patient care.

DOI: 10.1007/s12288-016-0764-x
PMCID: PMC5640523 [Available on 2018-12-01]
PMID: 29075071

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BACKGROUND: The tuberculum sellae is a relatively common location for meningiomas. We assessed our experience with the use of transcranial resection, which, although criticized for its more invasive nature compared with endonasal approaches, may be the ideal approach in selected patients with tuberculum sellae meningiomas (TSMs).
METHODS: We retrospectively reviewed the charts of patients with TSMs treated by frontotemporal or bifrontal open cranial resection. Clinical, radiographic, and surgical variables were analyzed.
RESULTS: Forty-nine patients with a TSM treated by frontotemporal or bifrontal open cranial resection were identified. The mean patient age was 53.2 ± 14.0 years, and the mean duration of follow-up was 42.3 ± 45.4 months. The mean tumor volume was 12.4 ± 18.0 cm3. Optic canal invasion was seen in 46.9% of the patients, and 91.8% presented with visual deficits. Gross total resection (GTR) was achieved in 42 patients (85.7%), and near-total resection was performed in 7 patients (14.3%). Postoperatively, visual outcomes improved in 17 patients

(34.7%), remained stable in 22 (44.9%), were intact in 6 (12.2%), and worsened in 1 (2.0%). Good outcome (Glasgow Outcome Scale [GOS] ≥4) was achieved by 46 of 49 patients (93%) at discharge and by 39 of 41 patients (95.1%) at 6 months. A total of 16 manageable and self-limiting complications occurred in 16 patients. CONCLUSIONS: In most patients undergoing a frontotemporal approach, a GTR/Simpson grade I resection with manageable and self-limiting surgical complications, a good 6-month GOS in most patients, and improved to stable vision were seen at follow-up. Various treatment approaches can be considered for TSM resection, but the ability to decompress the optic canal and achieve a GTR makes the frontotemporal approach attractive in many cases.

DOI: 10.1016/j.wneu.2017.09.090
PMID: 28951179 [Indexed for MEDLINE]

62: Katiyar V, Sharma R, Gurjar HK. Impact of post craniectomy cranioplasty on cerebral perfusion and clinical outcome. J Clin Neurosci. 2018 Mar;49:87-88. doi: 10.1016/j.jocn.2017.08.052. Epub 2017 Dec 11. PubMed PMID: 29241634.

63: Kaur M, Shaikh F, Falera R, Titiyal JS. Optimizing outcomes with toric intraocular lenses. Indian J Ophthalmol. 2017 Dec;65(12):1301-1313. doi: 10.4103/ijo.IJO_810_17. Review. PubMed PMID: 29208810; PubMed Central PMCID: PMC5742958.

Toric intraocular lenses (IOLs) are the procedure of choice to correct corneal astigmatism of 1 D or more in cases undergoing cataract surgery. Comprehensive literature search was performed in MEDLINE using "toric intraocular lenses," "astigmatism," and "cataract surgery" as keywords. The outcomes after toric IOL implantation are influenced by numerous factors, right from the preoperative case selection and investigations to accurate intraoperative alignment and postoperative care. Enhanced accuracy of keratometry estimation may be achieved by taking multiple measurements and employing at least two separate devices based on different principles. The importance of posterior corneal curvature is increasingly being recognized in various studies, and newer investigative modalities that account for both the anterior and posterior corneal power are becoming the standard of care. An ideal IOL power calculation formula should take into account the surgically induced astigmatism, the posterior corneal curvature as well as the effective lens position. Conventional manual marking has given way to image-guided systems and intraoperative aberrometry, which provide a mark-less IOL alignment and also aid in planning the incisions, capsulorhexis size, and optimal IOL centration. Postoperative toric IOL misalignment is the major factor responsible for suboptimal visual outcomes after toric IOL implantation. Realignment of the toric IOL is needed in 0.65%-3.3% cases, with more than 10° of rotation from the target axis. Newer toric IOLs have enhanced rotational stability and provide precise visual outcomes with minimal higher order aberrations.

DOI: 10.4103/ijo.IJO_810_17
PMCID: PMC5742958
PMID: 29208810 [Indexed for MEDLINE]

64: Khanna K, Bajpai M, Gupta A, Goel P. 'Mutiny on the crown': two cases of rare cephalic malformations. BMJ Case Rep. 2017 Dec 15;2017. pii: bcr-2017-222107. doi: 10.1136/bcr-2017-222107. PubMed PMID: 29248882.

The presentation and management of two bizarre congenital cephalic curiosities at the two extremes of the clinical spectrum are discussed herewith. Case 1: presented to us as a neonate with a scalp swelling mirror-imaging her head and face. The journey from clinics to wards and to the operation theatre and to her home is introspected. Case 2: presented to us as dicephalous dibrachius dipus

parapagus conjoined twins. The detailed work-up of individual organ systems, the multidisciplinary approach to management and the final outcome are discussed. This is an unsolved mystery for the anatomists, paediatric surgeons, radiologists and the medical fraternity at large.

DOI: 10.1136/bcr-2017-222107
PMID: 29248882 [Indexed for MEDLINE]

Conflict of interest statement: Competing interests: None declared.

65: Kriplani A, Goyal M, Kachhawa G, Mahey R, Kulshrestha V. Etiology and management of primary amenorrhoea: A study of 102 cases at tertiary centre. Taiwan J Obstet Gynecol. 2017 Dec;56(6):761-764. doi: 10.1016/j.tjog.2017.10.010. PubMed PMID: 29241916.

OBJECTIVE: To determine the prevalence of etiologic causes of primary amenorrhea in Indian population.
MATERIALS AND METHODS: A retrospective study was performed using 102 complete medical records of women with primary amenorrhea who attended the Gynaecologic Endocrinology Clinic, Department of Obstetrics and Gynaecology, AIIMS, New Delhi from September 2012 to September 2015. Cases were analysed according to clinical profile, development of secondary sexual characteristics, physical examination, pelvic and rectal examination, X-ray of chest and lumbo-sacral spine, hormone profile, pelvic USG, MRI, and cytogenetic study including karyotype.
RESULTS: The three most common causes of primary amenorrhea were Mullerian anomalies (47%), gonadal dysgenesis (20.5%), and hypogonadotropic hypogonadism (14.7%) in the present study. There were 3 cases of Turner syndrome (45,XO), 5 cases of Swyer's syndrome (46,XY) and 2 cases of Androgen insensitivity syndrome (46,XY). One case had pituitary macroadenoma and eight cases (7.8%) were of genital tuberculosis.
CONCLUSIONS: The present study has currently been the largest case series of primary amenorrhea from North India. Mullerian anomaly is the most prevalent etiological factor leading to amenorrhoea followed by gonadal dysgenesis in our study. Racial, genetic and environmental factors could play role in the cause of primary amenorrhea.

DOI: 10.1016/j.tjog.2017.10.010
PMID: 29241916

66: Kumar A, Dandekar JU, Bhat PJ. Fermentative metabolism impedes p53-dependent apoptosis in a Crabtree-positive but not in Crabtree-negative yeast. J Biosci. 2017 Dec;42(4):585-601. PubMed PMID: 29229877.

Tumour cells distinguish from normal cells by fermenting glucose to lactate in presence of sufficient oxygen and functional mitochondria (Warburg effect). Crabtree effect was invoked to explain the biochemical basis of Warburg effect by suggesting that excess glucose suppresses mitochondrial respiration. It is known that the Warburg effect and Crabtree effect are displayed by Saccharomyces cerevisiae, during growth on abundant glucose. Beyond this similarity, it was also demonstrated that expression of human pro-apoptotic proteins in S. cerevisiae such as Bax and p53 caused apoptosis. Here, we demonstrate that p53 expression in S. cerevisiae (Crabtree-positive yeast) causes increase in ROS levels and apoptosis when cells are growing on non-fermentable carbon sources but not on fermentable carbon sources, a feature similar to tumour cells. In contrast, in Kluyveromyces lactis (Crabtree-negative yeast) p53 causes increase

in ROS levels and apoptosis regardless of the carbon source. Interestingly, the increased ROS levels and apoptosis are correlated to increased oxygen uptake in both S. cerevisiae and K. lactis. Based on these results, we suggest that at least in yeast, fermentation per se does not prevent the escape from apoptosis. Rather, the Crabtree effect plays a crucial role in determining whether the cells should undergo apoptosis or not.

PMID: 29229877 [Indexed for MEDLINE]

67: Kumar A, Kishan V, Jacob TG, Kant K, Faiq MA. Evidence of continuity of mesentery from duodenum to rectum from human cadaveric dissection - a video vignette. Colorectal Dis. 2017 Dec;19(12):1119-1120. doi: 10.1111/codi.13917. PubMed PMID: 29027339.

68: Kumar P, Nag TC, Jha KA, Dey SK, Kathpalia P, Maurya M, Gupta CL, Bhatia J, Roy TS, Wadhwa S. Experimental oral iron administration: Histological investigations and expressions of iron handling proteins in rat retina with aging. Toxicology. 2017 Dec 1;392:22-31. doi: 10.1016/j.tox.2017.10.005. Epub 2017 Oct 6. PubMed PMID: 28993186.

Iron is implicated in age-related macular degeneration (AMD). The aim of this study was to see if long-term, experimental iron administration with aging modifies retinal and choroidal structures and expressions of iron handling proteins, to understand some aspects of iron homeostasis. Male Wistar rats were fed with ferrous sulphate heptahydrate (500mg/kg body weight/week, oral; elemental iron availability: 20%) from 2 months of age onward until they were 19.5 month-old. At 8, 14 and 20 months of age, they were sacrificed and serum and retinal iron levels were detected by HPLC. Oxidative stress was analyzed by TBARS method. The retinas were examined for cell death (TUNEL), histology (electron microscopy) and the expressions of transferrin, transferrin receptor-1 [TFR-1], H- and L-ferritin. In control animals, at any age, there was no difference in the serum and retinal iron levels, but the latter increased significantly in 14- and 20 month-old iron-fed rats, indicating that retinal iron accumulation proceeds with progression of aging (>14 months). The serum and retinal TBARS levels increased significantly with progression of aging in experimental but not in control rats. There was significant damage to choriocapillaris, accumulation of phagosomes in retinal pigment epithelium and increased incidence of TUNEL+ cells in outer nuclear layer and vacuolation in inner nuclear layer (INL) of 20 month-aged experimental rats, compared to those in age-matched controls. Vacuolations in INL could indicate a long-term effect of iron accumulation in the inner retina. These events paralleled the increased expression of ferritins and transferrin and a decrease in the expression of TFR-1 in iron-fed rats with aging, thereby maintaining iron homeostasis in the retina. As some of these changes mimic with those happening in eyes with AMD, this model can be utilized to understand iron-induced pathophysiological changes in AMD.

DOI: 10.1016/j.tox.2017.10.005
PMID: 28993186 [Indexed for MEDLINE]

69: Kumar R, Arora R, Agarwal A, Gupta YK. Protective effect of Terminalia chebula against seizures, seizure-induced cognitive impairment and oxidative stress in experimental models of seizures in rats. J Ethnopharmacol. 2018 Apr 6;215:124-131. doi: 10.1016/j.jep.2017.12.008. Epub 2017 Dec 14. PubMed PMID: 29248452.

ETHNOPHARMACOLOGICAL RELEVANCE: Teminalia chebula (TC) has been traditionally used in the Ayurvedic system of medicine primarily for gastrointestinal disorders. Its fruit extract has also been used to treat epilepsy and other CNS

disorders.
AIM OF THE STUDY: To evaluate the effect of hydroalcoholic fruit extract of Terminalia chebula (HETC) on experimental models of seizures, seizure-induced cognitive impairment and oxidative stress in rats.
MATERIALS AND METHODS: In vitro antioxidant activity of HETC was evaluated by using ABTS, NO and DPPH radical scavenging assay. For in-vivo study, seizures were induced in Wistar rats (200-225g) by pentylenetetrazole (PTZ) and maximal-electroshock. (MES). The anticonvulsant effect of the HETC (250, 500, and 1000mg/kg, orally) was evaluated in seizure models. The therapeutic and sub-therapeutic dose of valproate and phenytoin were also assayed. The potential effect of co-administration of HETC (500mg/kg) with sub-therapeutic dose of valproate and phenytoin were also evaluated in PTZ and MES seizures model respectively. Effect on cognition was assessed using elevated plus maze (EPM) and passive avoidance test (PA). The in- vivo oxidative stress parameters (malondialdehyde and glutathione) were assessed in the cerebral cortex and hippocampus part of rat brain.
RESULTS: The IC50 value of HETC in in vitro antioxidant assays i.e. ABTS, DPPH and NO radical scavenging assay was found to be 2.27µg/ml, 6.04µg/ml and 4.37µg/ml respectively. In experimental study, PTZ and MES treated groups exhibited 100% seizures with increased oxidative stress ($p < 0.001$) and cognitive deficits ($p < 0.01$) as compared to control group. HETC at highest dose (1000mg/kg) showed 83.33% (5/6) protection in MES induced seizures while 66.66% (4/6) protection in PTZ induced seizures. However, HETC (1000mg/kg) and co-administration of sub-therapeutic dose of HETC with valproate and phenytoin showed complete protection. In addition, it also attenuated the seizure induced oxidative stress and cognitive impairment as indicated by significant ($p < 0.01$) improvement in the transfer latencies in EPM and PA as compared to PTZ and MES treated group.
CONCLUSIONS: The findings suggest that HETC exhibited significant anticonvulsant activity and also potentiated the subtherapeutic dose of phenytoin and valproate indicate its usefulness as an adjuvant to antiepileptic drugs with an advantage of preventing cognitive impairment and oxidative stress.

DOI: 10.1016/j.jep.2017.12.008
PMID: 29248452

70: Kumar RV, Bhasker S. A peek into epidemiology, screening, management of breast cancer in developing countries: Experience from two regional cancer centers in India. Breast J. 2018 May;24(3):422-423. doi: 10.1111/tbj.12965. Epub 2017 Dec 5. PubMed PMID: 29205685.

71: Kumar S, Ramanujam B, Chandra PS, Dash D, Mehta S, Anubha S, Appukutan R, Rana MK, Tripathi M. Randomized controlled study comparing the efficacy of rapid and slow withdrawal of antiepileptic drugs during long-term video-EEG monitoring. Epilepsia. 2018 Feb;59(2):460-467. doi: 10.1111/epi.13966. Epub 2017 Dec 7. PubMed PMID: 29218705.

OBJECTIVE: Antiepileptic drugs (AEDs) are routinely withdrawn during long-term video-electroencephalography (EEG) monitoring (LTM), to record sufficient number of seizures. The efficacy of rapid and slow AED taper has never been compared in a randomized control trial (RCT), which was the objective of this study.
METHODS: In this open-label RCT, patients aged 2-80 years with drug-resistant epilepsy (DRE) were randomly assigned (1:1) to rapid and slow AED taper groups. Outcome assessor was blinded to the allocation arms. Daily AED dose reduction was 30% to 50% and 15% to <30% in the rapid and slow taper groups, respectively. The primary outcome was difference in mean duration of LTM between the rapid and slow AED taper groups. Secondary outcomes included diagnostic yield, secondary generalized tonic-clonic seizure (GTCS), 4- and 24- hour seizure clusters, status epilepticus, and need for midazolam rescue treatment. The study was registered

with Clinical Trial Registry-India (CTRI/2016/08/007207).
RESULTS: One hundred forty patients were randomly assigned to rapid (n = 70) or slow taper groups (n = 70), between June 13, 2016 and February 20, 2017. The difference in mean LTM duration between the rapid and slow taper groups was -1.8 days (95% confidence interval [CI] -2.9 to -0.8, P = .0006). Of the secondary outcome measures, time to first seizure (2.9 ± 1.7 and 4.6 ± 3.0 days in the rapid and slow taper groups respectively, P = .0002) and occurrence of 4-hour seizure clusters (11.9% and 2.9% in the rapid and slow taper groups, respectively, P = .04) were statistically significant. None of the other safety variables were different between the 2 groups. LTM diagnostic yield was 95.7% and 97.1%, in rapid and slow taper groups respectively (P = .46).
SIGNIFICANCE: Rapid AED tapering has the advantage of significantly reducing LTM duration over slow tapering, without any serious adverse events.

DOI: 10.1111/epi.13966
PMID: 29218705

72: Kumar S, Singh MB, Shukla G, Vishnubhatla S, Srivastava MVP, Goyal V, Prasad K, Patterson V. Effective clinical classification of chronic epilepsy into focal and generalized: A cross sectional study. Seizure. 2017 Dec;53:81-85. doi: 10.1016/j.seizure.2017.11.002. Epub 2017 Nov 9. PubMed PMID: 29149669.

PURPOSE: Investigations such as EEG and brain imaging are often difficult to obtain in primary care settings of resource-limited regions impacting millions of epilepsy patients. We wanted to test the hypothesis that classification of chronic epilepsy into focal and generalized based on clinical history and examination alone would be comparable to making such a classification with additional inputs from EEG and brain imaging.
METHODS: Two investigators independently classified consecutive chronic epilepsy patients into focal, generalized and unclassified epilepsy. Investigator 1 made this determination using clinical history and examination alone whereas Investigator II additionally used EEG and brain imaging too. We calculated inter observer agreement between the two investigators and also looked at the predictors of focal and generalized epilepsy.
RESULTS: Five hundred and twelve patients were recruited. Inter observer agreement between the two investigators in making the focal versus generalized classification was 96.8%, kappa 0.91 ($p<0.0001$). When EEG and neuroimaging findings were added to clinical information, there was a change in classification in 3.2% patients. Several predictors of focal and generalized epilepsy were identified.
CONCLUSIONS: Classification of chronic epilepsy into focal and generalized can be done reliably in most patients using clinical information alone. Investigating chronic epilepsy patients with EEG and brain imaging may not be necessary in every patient. The results of our study are especially significant for epilepsy patients living in resource-limited regions where such investigations may not always be available.

DOI: 10.1016/j.seizure.2017.11.002
PMID: 29149669

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74: Kumar V. Choroidal osteoma and pattern dystrophy of retinal pigment epithelium. Int Ophthalmol. 2017 Dec 19. doi: 10.1007/s10792-017-0806-x. [Epub ahead of print] PubMed PMID: 29260499.

PURPOSE: To describe co-occurrence of choroidal osteoma in a patient with pattern dystrophy of retinal pigment epithelium.
METHODS: Clinical case report RESULTS: A young female presented with decreased vision in the right eye due to decalcification of choroidal osteoma. Multimodal imaging including fundus autofluorescence, fluorescein angiography and optical coherence tomography showed features of pattern dystrophy of retinal pigment epithelium that simulates the Stargardt disease.
CONCLUSIONS: This co-occurrence of choroidal osteoma and pattern dystrophy is likely to be incidental. Multimodal imaging may help in differentiating pattern dystrophy of retinal pigment epithelium that simulates Stargardt disease from Stargardt disease.

DOI: 10.1007/s10792-017-0806-x
PMID: 29260499

75: Kumar V, Tomar A. Optical coherence tomography angiography imaging of Purtscher retinopathy. Can J Ophthalmol. 2017 Dec;52(6):e201-e203. doi: 10.1016/j.jcjo.2017.03.015. Epub 2017 Jun 23. PubMed PMID: 29217040.

76: Kumawat D, Ramananda K, Sahay P, Kumar A. Posterior capsular rupture and spontaneous posterior dislocation of lens following electrical injury. BMJ Case Rep. 2017 Dec 13;2017. pii: bcr-2017-222765. doi: 10.1136/bcr-2017-222765. PubMed PMID: 29237667.

Lenticular changes are often seen following electrical injury. We report an unusual case of electrical injury with late spontaneous posterior dislocation of lens nucleus with intact anterior capsule with ruptured posterior capsule in the right eye and anterior subcapsular cataract in the left eye. The right eye was managed with pars plana vitrectomy with cortical matter removal with multipiece intraocular lens insertion in ciliary sulcus. This report adds posterior capsular rupture and posterior dislocation of lens to the usual ocular complications of electrical injury.

DOI: 10.1136/bcr-2017-222765
PMID: 29237667 [Indexed for MEDLINE]

Conflict of interest statement: Competing interests: None declared.

77: Kuppili PP, Gupta R, Pattanayak RD, Khandelwal SK. Delusional denial of pregnancy: Unique presentation of Cotard's syndrome in a patient with schizophrenia. Asian J Psychiatr. 2017 Dec;30:26-27. doi: 10.1016/j.ajp.2017.07.005. Epub 2017 Jul 8. PubMed PMID: 28710951.

78: Kuppili PP, Manohar H, Pattanayak RD, Sagar R, Bharadwaj B, Kandasamy P. ADHD research in India: A narrative review. Asian J Psychiatr. 2017 Dec;30:11-25. doi: 10.1016/j.ajp.2017.07.022. Epub 2017 Jul 5. Review. PubMed PMID: 28709018.

INTRODUCTION: Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder with no clear etiopathogenesis. Owing to unique socio cultural milieu of India, it is worthwhile reviewing research on ADHD from India and comparing findings with global research. Thereby, we attempted to provide a comprehensive overview of research on ADHD from India.
METHODS: A boolean search of articles published in English from September 1966 to January 2017 on electronic search engines Google Scholar, PubMed, IndMED, MedIND, using the search terms "ADHD", "Attention Deficit and Hyperactivity Disorder", "Hyperactivity" ,"Child psychiatry", "Hyperkinetic disorder", "Attention Deficit Disorder", "India"was carried out and peer - reviewed studies conducted among

human subjects in India were included for review. Case reports, animal studies, previous reviews were excluded from the current review.
RESULTS: Results of 73 studies found eligible for the review were organized into broad themes such as epidemiology, etiology, course and follow up, clinical profile and comorbidity, assessment /biomarkers, intervention/treatment parameters, pathways to care and knowledge and attitude towards ADHD.
DISCUSSION: There was a gap noted in research from India in the domains of biomarkers, course and follow up and non-pharmacological intervention. The prevalence of ADHD as well as comorbidity of Bipolar Disorder was comparatively lower compared to western studies. The studies found unique to India include comparing the effect of allopathic intervention with Ayurvedic intervention, yoga as a non pharmacological intervention. There is a need for studies from India on biomarkers, studies with prospective research design, larger sample size and with matched controls.

DOI: 10.1016/j.ajp.2017.07.022
PMID: 28709018 [Indexed for MEDLINE]

79: Lavania S, Anthwal D, Bhalla M, Singh N, Haldar S, Tyagi JS. Direct detection of Mycobacterium tuberculosis rifampin resistance in bio-safe stained sputum smears. PLoS One. 2017 Dec 7;12(12):e0189149. doi: 10.1371/journal.pone.0189149. eCollection 2017. PubMed PMID: 29216262; PubMed Central PMCID: PMC5720740.

Direct smear microscopy of sputum forms the mainstay of TB diagnosis in resource-limited settings. Stained sputum smear slides can serve as a ready-made resource to transport sputum for molecular drug susceptibility testing. However, bio-safety is a major concern during transport of sputum/stained slides and for laboratory workers engaged in processing Mycobacterium tuberculosis infected sputum specimens. In this study, a bio-safe USP (Universal Sample Processing) concentration-based sputum processing method (Bio-safe method) was assessed on 87 M. tuberculosis culture positive sputum samples. Samples were processed for Ziehl-Neelsen (ZN) smear, liquid culture and DNA isolation. DNA isolated directly from sputum was subjected to an IS6110 PCR assay. Both sputum DNA and DNA extracted from bio-safe ZN concentrated smear slides were subjected to rpoB PCR and simultaneously assessed by DNA sequencing for determining rifampin (RIF) resistance. All sputum samples were rendered sterile by Bio-safe method. Bio-safe smears exhibited a 5% increment in positivity over direct smear with a 14% increment in smear grade status. All samples were positive for IS6110 and rpoB PCR. Thirty four percent samples were RIF resistant by rpoB PCR product sequencing. A 100% concordance (κ value = 1) was obtained between sequencing results derived from bio-safe smear slides and bio-safe sputum. This study demonstrates that Bio-safe method can address safety issues associated with sputum processing, provide an efficient alternative to sample transport in the form of bio-safe stained concentrated smear slides and can also provide information on drug (RIF) resistance by direct DNA sequencing.

DOI: 10.1371/journal.pone.0189149
PMCID: PMC5720740
PMID: 29216262 [Indexed for MEDLINE]

80: Learoyd AE, Woodhouse L, Shaw L, Sprigg N, Bereczki D, Berge E, Caso V, Christensen H, Collins R, Czlonkowska A, El Etribi A, Farr TD, Gommans J, Laska AC, Ntaios G, Ozturk S, Pocock SJ, Prasad K, Wardlaw JM, Fone KC, Bath PM, Trueman RC; ENOS Trial investigators. Infections Up to 76Â Days After Stroke Increase Disability and Death. Transl Stroke Res. 2017 Dec;8(6):541-548. doi: 10.1007/s12975-017-0553-3. Epub 2017 Jul 27. PubMed PMID: 28752410; PubMed Central PMCID: PMC5818141.

Early infection after stroke is associated with a poor outcome. We aimed to determine whether delayed infections (up to 76 days post-stroke) are associated

with poor outcome at 90 days. Data came from the international Efficacy of Nitric Oxide Stroke (ENOS, ISRCTN99414122) trial. Post hoc data on infections were obtained from serious adverse events reports between 1 and 76 days following stroke in this large cohort of patients. Regression models accounting for baseline covariates were used to analyse fatalities and functional outcomes (modified Rankin Scale (mRS), Barthel Index, Euro-Qol-5D) at 90 days, in patients with infection compared to those without infection. Of 4011 patients, 242 (6.0%) developed one or more serious infections. Infections were associated with an increased risk of death ($p < 0.001$) and an increased likelihood of dependency (measured by mRS) compared to those of all other patients ($p < 0.001$). This remained when only surviving patients were analysed, indicating that the worsening of functional outcome is not due to mortality ($p < 0.001$). In addition, the timing of the infection after stroke did not alter its detrimental association with fatality ($p = 0.14$) or functional outcome ($p = 0.47$). In conclusion, severe post-stroke infections, whether occurring early or late after stroke, are associated with an increased risk of death and poorer functional outcome, independent of differences in baseline characteristics or treatment. Not only are strategies needed for reducing the risk of infection immediately after stroke, but also during the first 3 months following a stroke. This study is registered: ISRCTN registry, number ISRCTN99414122, ClinicalTrials.gov Identifier, NCT00989716.

DOI: 10.1007/s12975-017-0553-3
PMCID: PMC5818141
PMID: 28752410 [Indexed for MEDLINE]

81: M N, Pandey RK, Sharma A, Darlong V, Punj J, Sinha R, Singh PM, Hamshi N, Garg R, Chandralekha C, Srivastava A. Pectoral nerve blocks to improve analgesia after breast cancer surgery: A prospective, randomized and controlled trial. J Clin Anesth. 2018 Mar;45:12-17. doi: 10.1016/j.jclinane.2017.11.027. Epub 2017 Dec 11. PubMed PMID: 29241077.

STUDY OBJECTIVE: To evaluate the analgesic efficacy of ultrasound guided combined pectoral nerve blocks I and II in patients scheduled for surgery for breast cancer.
DESIGN: Prospective, randomized, control trial.
SETTING: Operating rooms in a tertiary care hospital of Northern India.
PATIENTS: Sixty American Society of Anesthesiologists status I to II adult women, aged 18-70years were enrolled in this study.
INTERVENTIONS: Patients were randomized into two groups (30 patients in each group), PECS (P) group and control (C) group. In group P, patients received both general anesthesia and ultrasound guided combined pectoral nerve blocks (PECS I and II). In group C, patients received only general anesthesia.
MEASUREMENTS: We noted pain intensity at rest and during abduction of the ipsilateral upper limb, incidence of postoperative nausea and vomiting; patient's satisfaction with postoperative analgesia and maximal painless abduction at different time intervals in both groups.
MAIN RESULTS: There was significant decrease in the total amount of fentanyl requirement in the in P group {(140.66±31.80μg) and (438±71.74μg)} in comparison to C group {(218.33±23.93μg) and (609±53.00μg)} during intraoperative and post-operative period upto 24h respectively. The time to first analgesic requirement was also more in P group (44.33±17.65min) in comparison to C group (10.36±4.97min) during post-operative period. There was less limitation of shoulder movement (pain free mobilization) on the operative site at 4h and 5h after surgery in P group in comparison to C group. However there was no difference in the incidence of post-operative nausea and vomiting (22 out of 30 patients in group P and 20 out of 30 patients in group C) but patients in group P had a better satisfaction score with postoperative analgesia than C group having a p value of <0.001(Score 1; 5 VS 20; Score 2; 12 VS 9; Score 3; 13 VS 1).
CONCLUSIONS: Ultrasound guided combined pectoral nerve blocks are an effective modality of analgesia for patients undergoing breast surgeries during perioperative period.

CLINICAL TRIAL REGISTRATION: CTRI/2015/12/006457.

DOI: 10.1016/j.jclinane.2017.11.027
PMID: 29241077

82: Maharshi V, Banerjee I, Nagar P, Rehan HS. Tracheo-Esophageal Fistula (TEF) in a Newborn Following Maternal Antenatal Exposure to Olanzapine. Drug Saf Case Rep. 2017 Dec;4(1):2. doi: 10.1007/s40800-016-0044-6. PubMed PMID: 28063029; PubMed Central PMCID: PMC5218954.

There is a dearth of evidence on the safety of the use of antipsychotics during pregnancy. Olanzapine, a pregnancy category C drug, has no unequivocal evidence of harm to the fetus. Against this backdrop, we report the first case of a tracheo-esophageal fistula (TEF) in a newborn following maternal antenatal exposure to olanzapine. A 29-year-old woman with acute psychotic disorder had been treated with olanzapine for the last 7 years. Her first pregnancy, while taking olanzapine, resulted in a miscarriage at 4 months' gestation, following which she discontinued olanzapine. She reconceived after a few months and delivered a full-term normal child. However, due to the recurrence of psychiatric illness after her second pregnancy, she was prescribed olanzapine again, which was continued throughout her third pregnancy. The outcome of the third pregnancy was a full-term female baby with a TEF. The baby was managed surgically and discharged with satisfactory vital signs. Unfortunately, however, the baby did not survive beyond 11 months of age. Causality between antenatal maternal olanzapine exposure and TEF in the newborn was determined to be 'probable' (score +5) as per the Naranjo causality assessment scale. Greater knowledge of this potential teratogenicity caused by olanzapine is needed to reduce morbidity and mortality in newborns.

DOI: 10.1007/s40800-016-0044-6
PMCID: PMC5218954
PMID: 28063029

Conflict of interest statement: Dr. Vikas Maharshi, Dr. Indranil Banerjee, Dr. Pravesh Nagar, and Dr. H. S. Rehan declare that they have no conflicts of interest. Funding No financial support was received for the preparation of this manuscript. Informed consent Written informed consent was obtained from the infant’s father for publication of this case report.

83: Mallick S, Benson R, Melgandi W, Rath GK. Effect of Surgery, Adjuvant Therapy, and Other Prognostic Factors on Choroid Plexus Carcinoma: A Systematic Review and Individual Patient Data Analysis. Int J Radiat Oncol Biol Phys. 2017 Dec 1;99(5):1199-1206. doi: 10.1016/j.ijrobp.2017.08.012. Epub 2017 Aug 18. Review. PubMed PMID: 28939225.

PURPOSE: The optimal treatment of patients with choroid plexus carcinoma (CPC) is unclear. We conducted a systematic review and meta-analysis of individual patient information to determine the effect of surgery, adjuvant therapy, and other prognostic factors for CPC.
METHODS AND MATERIALS: A comprehensive search of the PubMed and Google Scholar databases was performed using the following MeSH terms to find all possible reports on CPC: choroid plexus tumor; choroid plexus carcinoma; choroid plexus carcinoma AND treatment; and choroid plexus carcinoma AND survival. We performed an individual patient data analysis to assess the strength of the potential associations between different variables and the outcomes for patients with CPC.
RESULTS: Data from 284 patients were retrieved from 89 studies. The median patient age was 2 years, with 26% patients diagnosed in the first year of their life. Of these 284 patients, 52.8% had undergone gross total resection (GTR) or near total resection. The median follow-up period for the entire cohort was 10.8 months. The median progression-free survival (PFS) was 13 months (95%

confidence interval 8.14-17.8). PFS was better for patients >aged 5 years and those who had undergone GTR. The median overall survival (OS) was 29 months (95% confidence interval 16.3-41.7). OS was better for patients aged >5 years, those who had undergone GTR, those who had received adjuvant treatment, and those with a parenchymal tumor site.
CONCLUSIONS: CPC is an aggressive tumor, with a median PFS of 13 months and median OS of 29 months. All patients should undergo maximal safe resection, because GTR is associated with improved survival. The use of adjuvant radiation and chemotherapy were also associated with improved outcomes.

DOI: 10.1016/j.ijrobp.2017.08.012
PMID: 28939225 [Indexed for MEDLINE]

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PURPOSE: In this study non-calcified plaque composition is evaluated by Dual Energy CT (DECT). Energy Dispersive X-ray Spectroscopy (EDS) has been used to study the Plaque composition. An attempt has been made to explain the DECT results with EDS analysis.
METHODS: Thirty-two ex-vivo human cadaver coronary artery samples were scanned by DECT and data was evaluated to calculate their effective atomic number and electron density (Zeff & ρe) by inversion method. Result of DECT was compared with pathology to assess their differentiating capability. The EDS study was used to explain DECT outcome.
RESULTS: DECT study was able to differentiate vulnerable plaque from stable with 87% accuracy (area under the curve (AUC):0.85 [95% confidence interval {CI}:0.73-0.98}] and Kappa Coefficient (KC):0.75 with respect to pathology. EDS revealed significant compositional difference in vulnerable and stable plaque at $p < .05$. The weight percentage of higher atomic number elements like F, Na, Mg, S, Si, P, Cl, K and Ca was found to be slightly more in vulnerable plaques as compared to a stable plaque. EDS also revealed a significantly increased weight percentage of nitrogen in stable plaques.
CONCLUSIONS: The EDS results were able to explain the outcomes of DECT study. This study conclusively explains the physics of DECT as a tool to assess the nature of non-calcified plaques as vulnerable and stable. The method proposed in this study allows for differentiation between vulnerable and stable plaque using DECT.

DOI: 10.1016/j.ejmp.2017.12.006
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Paroxysmal nocturnal hemoglobinuria (PNH) is an acquired clonal hematopoietic stem cell disorder with its protean clinical manifestations. This is due to partial or complete absence of 'glycophosphatidyl-inositol-anchor proteins' (GPI-AP). The main aim of this review is to highlight various diagnostic modalities available, basic principle of each test and recent advances in the diagnosis of PNH. Recently among various tests available, the flow cytometry has

become 'the gold standard' for PNH testing. In order to overcome the difficulties encountered by the testing and research laboratories throughout the world, International Clinical Cytometry Society has come up with guidelines regarding the indications for testing, protocol for sample collection, processing, panel of antibodies as well as gating strategies to be used, how to interpret the test and reporting format to be used. It is essential to test at least two GPI-linked markers on at least two different lineages particularly on red cells and granulocytes/monocytes. The fluorescent aerolysin combined with other monoclonal antibodies in multicolour flow cytometry offered an improved assay not only for diagnosis but also for monitoring of PNH clones. It is equally important to diagnose this rare entity with high index of suspicion.

DOI: 10.1007/s12288-017-0868-y
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(1)aRegional Center of Nuclear Medicine, Department of Translational Research and Advanced Technologies in Medicine and Surgery, University of Pisa, Pisa, Italy bDepartment of Radiology, Taunton and Somerset NHS Foundation Trust, Musgrove Park Hospital, Taunton, UK cNuclear Medicine and Diagnostic Imaging Section, Division of Human Health, Department of Nuclear Sciences and Applications, International Atomic Energy Agency, Vienna, Austria dDepartments of Essential Medicines and Health Products and Public Health Social and Environmental Determinants of Health, World Health Organization, Geneva, Switzerland eNational Center for Radiation Research and Technology, Egyptian Atomic Energy Authority, Cairo, Egypt fDepartment of Obstetrics and Gynaecology, All India Institute of Medical Sciences, New Delhi, India.

DOI: 10.1097/MNM.0000000000000752
PMCID: PMC5704652
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DOI: 10.1097/MNM.0000000000000751
PMCID: PMC5704651
PMID: 28922336

89: Misra V, Vashist P, Singh SS, Malhotra S, Gupta V, Dwivedi SN, Gupta SK. Awareness and eye health-seeking practices for cataract among urban slum population of Delhi: The North India eye disease awareness study. Indian J Ophthalmol. 2017 Dec;65(12):1483-1488. doi: 10.4103/ijo.IJO_585_16. PubMed PMID: 29208840; PubMed Central PMCID: PMC5742988.

PURPOSE: The objective of the study was to assess the awareness and health-seeking practices related to cataract in urban slums of Delhi.
METHODS: This study design was a population-based cross-sectional study. Participants aged 18-60 years were recruited from randomly selected five slums of South Delhi. They were interviewed using a semi-structured interview schedule on awareness and eye health-seeking practices related to cataract. The practices were recorded if the respondents themselves or any other member of the family was diagnosed with cataract in previous 2 years.
RESULTS: A total of 1552 respondents participated in the study, of which, 89.9% had heard of cataract but only (42%) were aware of any symptom of cataract. The common symptoms of cataract reported by the participants were white opacity in eyes (25.9%) and loss of vision (20.6%). Surgery as a treatment of cataract was known to only 559 (40.1%) participants. Awareness about surgery as treatment of cataract was significantly higher among people aged 45-60 years (adjusted odds ratio = 2.89, 95% confidence interval = 2.11-3.97) and in educated people (adjusted OR = 3.69 95% CI = 2.37-5.73). Out of 84 respondents who had been diagnosed with cataract, the health-seeking practices were observed by 70 (83.3%) participants. Among them, 51 (72.9%) had undergone surgery and another 19 (27.1%) had been advised to wait for surgery. Most of the operated patients 48 (94.1%) attended the postoperative follow-up.
CONCLUSION: The study findings suggest the majority of participants have heard of cataract, but there is low awareness of its symptoms and treatment, and good eye health-seeking practices observed for cataract in urban slum population. Gaps in awareness observed can be filled up by implementing proper eye health education programs.

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BACKGROUND: The prevalence of type 2 diabetes is increasing in epidemic proportions in low- and middle-income countries. There is an urgent need for novel methods to tackle the increasing incidence of diabetes. The ubiquity of mobile phone use and access to Internet makes mobile health (mHealth) technology a viable tool to prevent and manage diabetes.
OBJECTIVE: The objective of this randomized controlled trial is to implement and evaluate the feasibility, cost-effectiveness, and sustainability of a reality television-based lifestyle intervention program. This intervention program is

delivered via a mobile phone app (mDiab) to approximately 1500 Android smartphone users who are adults at a high risk for type 2 diabetes from three cities in India, namely, Chennai, Bengaluru, and New Delhi.
METHODS: The mDiab intervention would be delivered via a mobile phone app along with weekly coach calls for 12 weeks. Each participant will go through a maintenance phase of 6 to 8 months post intervention. Overall, there would be 3 testing time points in the study: baseline, post intervention, and the end of follow-up. The app will enable individuals to track their weight, physical activity, and diet alongside weekly video lessons on type 2 diabetes prevention.
RESULTS: The study outcomes are weight loss (primary measure of effectiveness); improvement in cardiometabolic risk factors (ie, waist circumference, blood pressure, glucose, insulin, and lipids); and improvement in physical activity, quality of life, and dietary habits. Sustainability will be assessed through focus group discussions.
CONCLUSIONS: If successful, mDiab can be used as a model for translational and implementation research in the use of mHealth technology for diabetes prevention and may be further expanded for the prevention of other noncommunicable diseases such as hypertension and cardiovascular diseases.
TRIAL REGISTRATION: Clinical Trials Registry of India CTRI/2015/07/006011 http://ctri.nic.in/Clinicaltrials/pdf_generate.php? trialid=11841 (Archived by WebCite at http://www.webcitation.org/6urCS5kMB).

DOI: 10.2196/resprot.8644
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Chirally pure molecules or enantiomers are non-superimposable mirror images of each other with a chiral center (such as carbon, sulphur, nitrogen or phosphorous atom). An equimolar mixture of enantiomers forms a racemate. Chirally pure molecules (single enantiomers) are important in the field of drug discovery as the drug targets such as enzymes and receptors are enantioselective in nature. Clinical studies have demonstrated that chirally pure drugs exhibit different pharmacokinetic and metabolic profiles, reduced adverse events, improved safety profiles and similar therapeutic activity at lowered drug dosage as compared with the racemate in many therapeutic areas. However, since there is a low level of awareness on the advantages of chirally pure molecules among clinicians, pharmacists and patients in India, the Association of Physicians of India (API) developed this position statement to increase awareness on the concept of chirality and the associated advantages of using chirally pure drugs in certain therapeutic areas to maximize patient outcomes. This includes the clinical evidence associated with single enantiomers such as S-metoprolol, S-amlodipine, esomeprazole, escitalopram, levobupivacaine, cisatracurium, S-etodolac, dexketoprofen, levofloxacin in terms of efficacy and safety as compared with their racemates. In addition, the API also provides some tactical recommendations for clinicians, pharmacists, patients, regulatory body and pharmaceutical companies to increase awareness on chirally pure drugs and puts forth the need for expedited availability of chirally pure drugs in the Indian market.

PMID: 29327523

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The retina is prone to be damaged by oxidative stress (OS), owing to its constant exposure to light, high rate of oxygen consumption and high membrane lipid content. Lipid peroxidation in aging human retina has been shown by biochemical means. However, information on the cellular sites of OS and antioxidant responses in aging human retina remains limited. Here, we show distribution of immunoreactivity (IR) to a marker of lipid peroxidation (4-hydroxy 2-nonenal [HNE] and antioxidant enzymes involved in counteracting lipid peroxidation (glutathione S-transferase-π1 and glutarexoxin-1) in donor human retinas at different ages (35-91 years; N = 24). Initially, HNE-IR was present in few macular cone outer segments (COS, sixth decade). With aging, IR appeared in many COS and peaked at ninth decade (14 vs 62 per 3850 μm2 area between 6 and 9 decade; $p < 0.001$) in the parafovea then seen elsewhere (perifoveal, mid-peripheral and nasal). IR was seen in the parafovea of all retinas, whereas it was present in 8/24 of perifoveal and 6/24 of mid-peripheral retinas, indicating that the parafovea is susceptible to undergo lipid peroxidation. Foveolar COS were immunonegative until 81 years, which developed IR later (>83 years). IR to glutathione S-transferase-π1 was moderate until eight decade and then showed a decrease in photoreceptor cells between ninth and tenth decade, while glutaredoxin-1 maintained a steady expression with aging. Damaged COS were present in aged retinas, and inner segments and photoreceptor nuclei also showed some degree of alterations. Although there was increased lipid peroxidation with aging, cone death was minimal in those retinas. The two antioxidant enzymes studied here, may play a role in protecting photoreceptors against OS with advanced aging.

DOI: 10.1016/j.exer.2017.09.014
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Three-dimensional multicellular human bone marrow mesenchymal stem cells (hBM-MSCs) are showing a great promise in the repair of bone tissue due to its osteogenic differentiation potential, mimicking in vivo microenvironment and immunomodulatory property. In the present study, the potential of hBM-MSC microtissues (MTs) in combination with a biocomposite material to form vascularized bone-like tissue at an ectopic site in an immunocompromised mouse was evaluated. The scaffold was fabricated using gelatin, carboxymethyl cellulose, polyvinyl alcohol and nano-hydroxyapatite (GCnHP) by the freeze-drying method. The physico-chemico-biological characteristics were compared with control scaffold devoid of polyvinyl alcohol (GCnH). The scaffolds (GCnH and GCnHP) were highly porous and had interconnected pores. GCnHP showed higher mechanical strength, higher water adsorption and a lower rate of collagenase-mediated degradation in comparison to GCnH. The scaffolds also supported growth and proliferation of hBM-MSCs MTs and subsequent differentiation into osteoblast-like cells. The differentiated cells showed matrix mineralization and high expression

of runX2, alkaline phosphatase, collagen type 1 and osteocalcin genes. A high expression of VEGF was also observed suggesting the potential of hBM-MSC MTs to induce angiogenesis. H&E and Masson's trichrome staining of the 4-weeks in vivo implanted scaffold revealed the presence of newly synthesized collagen and infiltration of host vasculature. IHC assessment showed expression of osteocalcin and osterix. These results demonstrate the efficacy of the combination of hBM-MSC MTs and biocomposite material as a promising approach for in vivo non-load bearing bone tissue repair for future clinical and various regenerative medicine applications.

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PMID: 29031226

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Background & objectives: The existing antileishmanial drugs for complete cure of visceral leishmaniasis (kala-azar) are limited. The available drugs are either toxic or less effective leading to disease relapse or conversion to post-kala-azar dermal leishmaniasis. Several herbal extracts have been shown to have antileishmanial activity, but a herbal drug may not always be safe. In the present study, the extract of Cedrus deodara leaves has been standardized and tested for immunomodulatory antileishmanial activities.
Methods: The extracts of C. deodara leaves with different solvents such as benzene, chloroform, ethyl acetate and methanol were made by soxhlation process. Solvents were removed under reduced pressure and temperature using rotary evaporator. The antileishmanial bioassay test was performed with in vitro maintained parasites. Immunomodulatory activity of different extracts was tested by flow cytometry. Standardization of the effective fraction was performed with Linalool as a marker compound through reverse-phase high-performance liquid chromatography.
Results: The extract with the use of benzene solvent showed strong antileishmanial activities within a dose 25-200 µg/ml culture with non-significant haemolytic activities and significant immunomodulant activities against the host cells. Linalool was found to be 1.29 per cent in the effective extract of C. deodara.
Interpretation & conclusions: The antileishmanial activity of C. deodara, as assessed by bioassay testing on.
Leishmania donovani: parasites and immunomodulatory effect of benzene extract of leaves on host cells indicated that it might be a potential new safe therapeutic target to cure the visceral leishmaniasis.

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PMCID: PMC5926351
PMID: 29664038

Conflict of interest statement: None

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BACKGROUND: No estimates of influenza-associated mortality exist for India.
OBJECTIVE: To evaluate national mortality and viral surveillance data from India for assessing their appropriateness in estimating influenza-associated mortality

using varied analytic approaches.
METHODS: We reviewed influenza virus surveillance data from a national influenza surveillance network. We also reviewed national mortality data from Civil Registration System (CRS), Medical Certification of Cause of Death (MCCD) and the Sample Registration System (SRS). We compared and scored the different sources of mortality data using specific criteria, including the process of cause of death assignment, sample size, proportion of ill-defined deaths, representativeness and availability of time series data. Each of these 5 parameters was scored on a scale from 1 to 5. To evaluate how to generate an influenza-associated mortality estimate for India, we also reviewed 4 methodologic approaches to assess the appropriateness of their assumptions and requirements for these data sets.
RESULTS: The influenza virus surveillance data included year-round sample testing for influenza virus and was found to be suitable for influenza mortality estimation modelling. Based on scoring for the 5 mortality data criteria, the SRS data had the highest score with 20 of 25 possible score, whereas MCCD and CRS scored 16 and 12, respectively. The SRS which used verbal autopsy survey methods was determined to be nationally representative and thus adequate for estimating influenza-associated mortality. Evaluation of the modelling methods demonstrated that Poisson regression, risk difference and mortality multiplier methods could be applied to the Indian setting.
CONCLUSION: Despite significant challenges, it is possible to estimate influenza-associated mortality in India.

DOI: 10.1111/irv.12493
PMCID: PMC5818338
PMID: 29197173

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OBJECTIVES: The purpose of the study was to test the intra and interobserver reliability of manual volumetric segmentation of pharyngeal and sinonasal airway subregions.
STUDY DESIGN: Cone beam computed tomography data of 15 patients were collected from an orthodontic clinical database. Two experienced orthodontists independently performed manual segmentation of the airway subregions. Four performance measures were considered to test intra and interobserver reliability of manual segmentation: (1) volume correlation, (2) mean slice correlation, (3) percentage of volume difference, and (4) percentage of nonoverlapping voxels.
RESULTS: Intra and interobserver reliability was observed to be greater than 0.96 for the entire pharyngeal and sinonasal airway sinus subregions by both observers using the volume correlation method. Mean slice correlation was found to be greater than 0.84, showing the existence of nonoverlapping voxels. Therefore, the percentage of nonoverlapping voxels was used as a reliability measure and was found to be less than 20% for both intra and interobserver markings.
CONCLUSIONS: The mean slice correlation and percentage of nonoverlapping voxels were the most reliable performance measures of segmentation correctness. Volume correlation and the percentage of volume difference were observed to be the most reliable performance measures for volume correctness.

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PMID: 29169513 [Indexed for MEDLINE]

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outpatients with bipolar disorder. Psychiatry Res. 2017 Dec;258:158-165. doi: 10.1016/j.psychres.2017.09.087. Epub 2017 Oct 3. PubMed PMID: 29028582.

Patients with many psychiatric disorders have considerable internalized stigma. The current study intended to examine the level and impact of internalized stigma in patients with bipolar affective disorder (BPAD). 60 patients with BPAD, 33 patients with schizophrenia and 30 patients with anxiety disorders were compared on Internalized Stigma of Mental Illness scale and The Stigma Scale. The patients with BPAD were assessed using Rosenberg Self-Esteem Scale (RSES), Participation scale (PS) and World Health Organization Quality Of Life - Brief Version - Hindi (WHOQOL-bref). Significant differences were found in all domains of self-stigma measures among the three groups. Using appropriate covariates, it was found that the differences were significant and independent of the effect of the covariates. In patients of BPAD, stigma and its domains were significantly correlated with the measures on monthly income, education, socio-occupational functioning, RSES, PS and WHOQOL-bref. Patients with BPAD experience substantial stigma, which was intermediate between that experienced by patients with schizophrenia (higher) and that experienced by patients with anxiety disorder (lower). Internalized stigma has significant impact on self-esteem, socio-occupational participation and functioning, and quality of life in patients with BPAD. Small sample size, sample of convenience, and cross-sectional design, limit the generalizability of the results.

DOI: 10.1016/j.psychres.2017.09.087
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Background: Double-J (DJ) stent is an integral part of urologic practice. DJ stents can have numerous complications such as persistent irritative symptoms, encrustations, and up and down migrations within the pelvicaliceal system (PCS), but displacement outside the urinary tract is rare. We are presenting a unique case of DJ stent lying outside the PCS for more than a decade. Case Presentation: A 46-year-old female presented with left flank pain and dysuria. She had undergone percutaneous nephrolithotomy in the left side 11 years ago. Imaging studies revealed a forgotten DJ stent with proximal part lying in the PCS with dense encrustations and the distal coil in the retroperitoneum at the level of the contralateral sacroiliac joint with the shaft crossing the midline at fourth lumbar vertebral level. The malpositioned forgotten stent was removed intact using the multimodal endourologic technique. During follow-up, the patient had prompt relief of symptoms and a preserved renal unit. Conclusion: To the best of our knowledge, this is the first report of malpositioned and forgotten DJ stent for more than a decade with lower end lying near the opposite lower ureter managed effectively by an endourologic method.

DOI: 10.1089/cren.2017.0126
PMCID: PMC5734148
PMID: 29279873

Conflict of interest statement: No competing financial interests exist.

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BACKGROUND: The type of opioid used influences the severity and complications experienced. Natural opiates (opium and poppy husk) use is a socio-culturally accepted phenomenon reported in India. However, studies on their profile, quality of life, and addiction severity are limited.
OBJECTIVES: The objective of this cross-sectional, observational study was to assess the socio-demographic profile, clinical profile, addiction severity, and quality of life of treatment-seeking natural opiate users.
METHOD: Hundred subjects aged 18-65 years using opium or poppy husk seeking outpatient treatment at a tertiary addiction treatment center in India were interviewed to collect information on their socio-demography, natural opiate, and other substance use. Additionally, their addiction severity and quality of life were assessed using Addiction Severity Index-Lite and WHO Quality of Life-Bref instrument, respectively.
RESULTS: All subjects were male with a mean age of 44.6 (±11.0) years. Majority (97%) used poppy husk daily orally. Curiosity/experimentation (63%) was the most common reason for starting opiate use. The past month rates of tobacco, alcohol, cannabis, and sedative-hypnotics use was 58%, 33%, 3%, and 12%, respectively. Only 4% injected any opioid. Inability to afford opiates (72%) was the most common reason for seeking treatment. Rates of medical, familial, social, psychological, and legal complications were low, while the WHOQOL-BREF scores fell between 40 and 50 across various domains. Conclusions/Importance: Natural opiate users may constitute distinct subgroup of opioid users with fewer/no complications despite long duration of uninterrupted use. These findings would be important in planning management strategies for people dependent on natural opiates.

DOI: 10.1080/10826084.2017.1400564
PMID: 29220602

105: Patel A, Sharma MC, Bakhshi S. Demographic Challenges of Pediatric NHL: A Report on 280 Patients. Indian J Pediatr. 2018 Aug;85(8):697-698. doi: 10.1007/s12098-017-2563-2. Epub 2017 Dec 14. PubMed PMID: 29238937.

106: Patra BN, Khandelwal SK, Chadda RK, Lakshmy R, Abraham RA. A controlled study of plasma fatty acids in Indian patients with depressive episode. Asian J Psychiatr. 2018 Jan;31:152-156. doi: 10.1016/j.ajp.2017.12.006. Epub 2017 Dec 8. PubMed PMID: 29229218.

AIM: To study the plasma omega 3 and omega 6 fatty acid levels in patients with depressive episode and in matched healthy controls.
METHOD: Thirty patients with first episode depression and thirty healthy matched control subjects were recruited from a tertiary care hospital setting. We measured plasma omega-3 and omega-6 fatty acid levels of the study and the control group.
RESULT: There were no significant differences in plasma omega 3 fatty acid levels between study group and control group. The plasma omega 6 fatty acid levels of study group were significantly less than that of control group.
CONCLUSIONS: The present study is an initial attempt to investigate the link between fatty acids and depression in a clinical setting in India. This comparative study with normal controls did not etiologically link these polyunsaturated fatty acids in this sample of depressive disorder.

DOI: 10.1016/j.ajp.2017.12.006
PMID: 29229218

107: Patra S, Gupta V, Kumar R, Verma KK. Clinical and radiological improvement in idiopathic calcinosis cutis with topical 25% sodium metabisulfite. Int J Dermatol. 2017 Dec;56(12):1464-1465. doi: 10.1111/ijd.13789. Epub 2017 Oct 26. PubMed PMID: 29076152.

108: Patterson V, Samant S, Singh MB, Jain P, Agavane V, Jain Y. Diagnosis of epileptic seizures by community health workers using a mobile app: A comparison with physicians and a neurologist. Seizure. 2018 Feb;55:4-8. doi: 10.1016/j.seizure.2017.12.006. Epub 2017 Dec 26. PubMed PMID: 29291457.

PURPOSE: The World Health Organisation (WHO) strategy for non-physician health workers (NPHWs) to diagnose and manage people with untreated epilepsy depends on them having access to suitable tools. We have devised and validated an app on a tablet computer to diagnose epileptic episodes and now examine how its use by NPHWs compares with diagnosis by local physicians and a neurologist.
METHODS: Fifteen NPHWs at Jan Swasthya Sahyog (JSS) a hospital with community outreach in Chhattisgarh, India were trained in the use of an epilepsy diagnosis app on a tablet computer. They were asked to determine the app scores on patients in their communities with possible epilepsy and then refer them first to their local JSS doctors and then to a visiting neurologist. With the neurologist's opinion as the "gold standard", the misdiagnosis rate from the NPHWs was compared with that of the local physicians.
RESULTS: There were 96 patients evaluated completely. The NPHWs misdiagnosed eight and the physicians seven. There were more uncertain diagnoses by the NPHWs. In the 22 patients who presented for the first time during the study, the NPHWs misdiagnosed three and the physicians five.
CONCLUSIONS: NPHWs using an app achieved similar misdiagnosis rates to local physicians. Both these rates were well within the range of misdiagnosis in the published literature. These results suggest that task-shifting epilepsy diagnosis and management from physicians to NPHWs, who are enabled with appropriate technology, can be an effective and safe way of reducing the epilepsy treatment gap.

DOI: 10.1016/j.seizure.2017.12.006
PMID: 29291457 [Indexed for MEDLINE]

109: Paul SB, Das P, Mahanta M, Sreenivas V, Kedia S, Kalra N, Kaur H, Vijayvargiya M, Ghosh S, Gamanagatti SR, Shalimar, Gupta SD, Acharya SK. Assessment of liver fibrosis in chronic hepatitis: comparison of shear wave elastography and transient elastography. Abdom Radiol (NY). 2017 Dec;42(12):2864-2873. doi: 10.1007/s00261-017-1213-5. PubMed PMID: 28643136.

PURPOSE: To evaluate the diagnostic accuracy of shear wave elastography (SWE) and transient elastography (TE) in the evaluation of liver fibrosis in chronic hepatitis B (CHB) and C (CHC) patients taking liver biopsy as gold standard.
METHODS: Ethics committee approved this prospective cross-sectional study. Between October 2012 and December 2014, consecutive CHB/CHC patients fulfilling the inclusion criteria were included-age more than 18 years, informed written consent, willing and suitable for liver biopsy. SWE, TE, and biopsy were performed the same day. Liver stiffness measurement (LSM) cut-offs for various stages of fibrosis were generated for SWE and TE. AUC, sensitivity, specificity, and positive/negative predictive values were estimated individually or in combination.
RESULTS: CH patients (n = 240, CHB 172, CHC 68), 176 males, 64 females, mean age

32.6 ± 11.6 years were enrolled. Mean LSM of patients with no histological fibrosis (F0) was 5.0 ± 0.7 and 5.1+1.4 kPa on SWE and TE, respectively. For differentiating F2 and F3-4 fibrosis on SWE, at 7.0 kPa cut-off, the sensitivity was 81.3% and specificity 77.6%. For TE, at 8.3 kPa cut-off, sensitivity was 81.8% and specificity 83.1%. For F3 vs. F4, SWE sensitivity was 83.3% and specificity 90.7%. At 14.8 kPa cut-off, TE showed similar sensitivity (83.3%) but specificity increased to 96.5%. Significant correlation between SWE and TE was observed ($r = 0.33$, $p < 0.001$). On combining SWE and TE, a drop in sensitivity with increased specificity for all stages of liver fibrosis occured.
CONCLUSION: SWE is an accurate technique for evaluating liver fibrosis. SWE compares favorably with TE especially for predicting advanced fibrosis/cirrhosis. Combining SWE and TE further improves specificity.

DOI: 10.1007/s00261-017-1213-5
PMID: 28643136 [Indexed for MEDLINE]

110: Purakayastha DR, Rai SK, Broor S, Krishnan A. Cost of Treatment of Febrile Acute Respiratory Infection (FARI) Among Under-Five Children Attending Health Facilities of Ballabgarh, Haryana. Indian J Pediatr. 2017 Dec;84(12):902-907. doi: 10.1007/s12098-017-2420-3. Epub 2017 Aug 23. PubMed PMID: 28831731.

OBJECTIVE: To estimate the expenditure incurred towards treatment of an episode of respiratory infection among under-fives in outpatient and inpatient departments of primary and secondary level health facilities.
METHODS: During March 2011 - September 2012, under-five children presenting with febrile acute respiratory infection (FARI) in the outpatient (OPD) and inpatient (IPD) departments of public and private health facilities of Ballabgarh, Haryana were enrolled in the study. Children who were free from co-morbidities and whose contact number or proper address were available, were enrolled and followed up over telephone or by house visits till recovery. Information was collected on expenditure incurred towards treatment of FARI. Work loss of each day was valued as per capita national income per day. Cost of service in public facilities were supplemented by WHO-CHOICE estimates. The cost of respiratory episode in different settings are expressed in median and inter quartile range (IQR).
RESULTS: One hundred fourteen children from OPD and 75 from IPD were enrolled and followed up till recovery. Among eligible children 40% and 20% in OPD and IPD were excluded respectively as they could not provide address or contact number. The median costs of an episode treated in OPD and IPD were INR 447(IQR: INR 294-669) and INR 7506.06 (IQR: INR 3765-10,406) respectively.
CONCLUSIONS: Respiratory infections are responsible for substantial economic burden, especially with huge proportion of out-of-pocket expenditure. Total cost of a respiratory episode that required hospitalization was 1.5 times the per capita monthly income of an Indian.

DOI: 10.1007/s12098-017-2420-3
PMID: 28831731

111: Rai AK, Singh A, Saxena A, Seth T, Raina V, Mitra DK. Exonal switch down-regulates the expression of CD5 on blasts of acute T cell leukaemia. Clin Exp Immunol. 2017 Dec;190(3):340-350. doi: 10.1111/cei.13019. Epub 2017 Sep 5. PubMed PMID: 28752543; PubMed Central PMCID: PMC5680060.

To date, CD5 expression and its role in acute T cell lymphoblastic leukaemia (T-ALL) have not been studied closely. We observed a significant reduction in surface expression of CD5 (sCD5) on leukaemic T cells compared to autologous non-leukaemic T cells. In this study, we have shown the molecular mechanism regulating the expression and function of CD5 on leukaemic T cells. A total of 250 patients suffering from leukaemia and lymphoma were immunophenotyped. Final diagnosis was based on their clinical presentation, morphological data and flow cytometry-based immunophenotyping. Thirty-nine patients were found to be of ALL-T origin. Amplification of early region of E1A and E1B transcripts of CD5 was correlated with the levels of surface and intracellular expression of CD5

protein. Functional studies were performed to show the effect of CD5 blocking on interleukin IL-2 production and survival of leukaemic and non-leukaemic cells. Lack of expression of sCD5 on T-ALL blasts was correlated closely with predominant transcription of exon E1B and significant loss of exon E1A of the CD5 gene, which is associated with surface expression of CD5 on lymphocytes. High expression of E1B also correlates with increased expression of cytoplasmic CD5 (cCD5) among leukaemic T cells. Interestingly, we observed a significant increase in the production of IL-2 by non-leukaemic T cells upon CD5 blocking, leading possibly to their increased survival at 48 h. Our study provides understanding of the regulation of CD5 expression on leukaemic T cells, and may help in understanding the molecular mechanism of CD5 down-regulation.

DOI: 10.1111/cei.13019
PMCID: PMC5680060 [Available on 2018-12-01]
PMID: 28752543 [Indexed for MEDLINE]

112: Rajendran A, Dhoble P, Sundaresan P, Saravanan V, Vashist P, Nitsch D, Smeeth L, Chakravarthy U, Ravindran RD, Fletcher AE. Genetic risk factors for late age-related macular degeneration in India. Br J Ophthalmol. 2017 Dec 19. pii: bjophthalmol-2017-311384. doi: 10.1136/bjophthalmol-2017-311384. [Epub ahead of print] PubMed PMID: 29259020.

BACKGROUND/AIMS: There are limited data from India on genetic variants influencing late age-related macular degeneration (AMD). We have previously reported associations from a population-based study in India (the India age-related eye disease study (INDEYE)) of early AMD and single nucleotide polymorphisms (SNPs) in ARMS2/HTRA1 and no association with CFH, C2 or CFB. Late AMD cases were too few for meaningful analyses. We aimed to investigate SNPs for late AMD through case enrichment and extend the loci for early AMD.
METHODS: Fundus images of late AMD hospital cases were independently graded by the modified Wisconsin AMD grading scheme. In total 510 cases with late AMD (14 geographic atrophy and 496 neovascular AMD (nvAMD)), 1876 with early AMD and 1176 with no signs of AMD underwent genotyping for selected SNPs. We investigated genotype and per-allele additive associations (OR and 95% CIs) with nvAMD or early AMD. Bonferroni adjusted P values are presented.
RESULTS: We found associations with nvAMD for CFHY402H variant (rs1061170) (OR=1.99, 95% CI 1.67 to 2.37, P=10-6), ARMS2 (rs10490924) (OR=2.94, 95% CI 2.45 to 3.52, P=10-9), C2 (rs547154) (OR=0.67, 95% CI 0.53 to 0.85, P=0.01), ABCA1 (rs1883025) (OR=0.77, 95% CI 0.65 to 0.92, P=0.04) and an SNP near VEGFA (rs4711751) (OR=0.64, 95% CI 0.54 to 0.77, P=10-3). We found no associations of TLR3 (rs3775291), CFD (rs3826945), FRK (rs1999930) or LIPC (rs10468017) or APOE ε4 alleles with nvAMD or early AMD, nor between early AMD and rs1883025 or rs4711751.
CONCLUSIONS: The major genetic determinants of nvAMD risk in India are similar to those in other ancestries, while findings for early AMD suggest potential differences in the pathophysiology of AMD development.

DOI: 10.1136/bjophthalmol-2017-311384
PMID: 29259020

Conflict of interest statement: Competing interests: None declared.

113: Ramchandani R, Chumber S. Familial Occurrence of Thyroglossal Duct Cyst. Indian J Surg. 2017 Dec;79(6):566-568. doi: 10.1007/s12262-017-1648-5. Epub 2017 May 25. PubMed PMID: 29217911; PubMed Central PMCID: PMC5711719.

Thyroglossal duct cysts are one of the commonest benign midline neck swellings. These are the remnants of the embryologic duct that fails to regress by the 10th week of fetal development. Generally, these are sporadic, slowly enlarging midline neck lumps, with half of them presenting before the age of 30. However, despite their relative frequency, reports of familial inheritance are rare. A review of literature reveals a total of 25 patients from 8 families showing a familial inheritance pattern worldwide. We describe here a 9th family with 5 affected patients taking the total number of cases to 30. Also, this is the 1st such reported case of familial inheritance of thyroglossal cyst from the Asian continent.

DOI: 10.1007/s12262-017-1648-5
PMCID: PMC5711719 [Available on 2018-12-01]
PMID: 29217911

114: Rao J, Ashraf S, Tan W, van der Ven AT, Gee HY, Braun DA, FehÃ©r K, George SP, Esmaeilniakooshkghazi A, Choi WI, Jobst-Schwan T, Schneider R, Schmidt JM, Widmeier E, Warejko JK, Hermle T, Schapiro D, Lovric S, Shril S, Daga A, Nayir A, Shenoy M, Tse Y, Bald M, Helmchen U, Mir S, Berdeli A, Kari JA, El Desoky S, Soliman NA, Bagga A, Mane S, Jairajpuri MA, Lifton RP, Khurana S, Martins JC, Hildebrandt F. Advillin acts upstream of phospholipase C Ïµ1 in steroid-resistant nephrotic syndrome. J Clin Invest. 2017 Dec 1;127(12):4257-4269. doi: 10.1172/JCI94138. Epub 2017 Oct 23. PubMed PMID: 29058690; PubMed Central PMCID: PMC5707164.

Steroid-resistant nephrotic syndrome (SRNS) is a frequent cause of chronic kidney disease. Here, we identified recessive mutations in the gene encoding the actin-binding protein advillin (AVIL) in 3 unrelated families with SRNS. While all AVIL mutations resulted in a marked loss of its actin-bundling ability, truncation of AVIL also disrupted colocalization with F-actin, thereby leading to impaired actin binding and severing. Additionally, AVIL colocalized and interacted with the phospholipase enzyme PLCE1 and with the ARP2/3 actin-modulating complex. Knockdown of AVIL in human podocytes reduced actin stress fibers at the cell periphery, prevented recruitment of PLCE1 to the ARP3-rich lamellipodia, blocked EGF-induced generation of diacylglycerol (DAG) by PLCE1, and attenuated the podocyte migration rate (PMR). These effects were reversed by overexpression of WT AVIL but not by overexpression of any of the 3 patient-derived AVIL mutants. The PMR was increased by overexpression of WT Avil or PLCE1, or by EGF stimulation; however, this increased PMR was ameliorated by inhibition of the ARP2/3 complex, indicating that ARP-dependent lamellipodia formation occurs downstream of AVIL and PLCE1 function. Together, these results delineate a comprehensive pathogenic axis of SRNS that integrates loss of AVIL function with alterations in the action of PLCE1, an established SRNS protein.

DOI: 10.1172/JCI94138
PMCID: PMC5707164
PMID: 29058690

115: Rath S, Yadav L, Tewari A, Chantler T, Woodward M, Kotwal P, Jain A, Dey A, Garg B, Malhotra R, Goel A, Farooque K, Sharma V, Webster P, Norton R. Management of older adults with hip fractures in India: a mixed methods study of current practice, barriers and facilitators, with recommendations to improve care pathways. Arch Osteoporos. 2017 Dec;12(1):55. doi: 10.1007/s11657-017-0344-1. Epub 2017 Jun 2. PubMed PMID: 28577286; PubMed Central PMCID: PMC5486685.

Evidence-based management can reduce deaths and suffering of older adults with hip fractures. This study investigates the evidence-practice gaps in hip fracture care in three major hospitals in Delhi, potential barriers and facilitators to improving care, and consequently, identifies contextually appropriate interventions for implementing best practice for management of older adults with hip fractures in India.PURPOSE: Hip fracture in older adults is a significant public health issue in India. The current study sought to document current

practices, identify barriers and facilitators to adopting best practice guidelines and recommend improvements in the management of older adults with hip fractures in Delhi, India.
METHODS: This mixed methods observational study collected data from healthcare providers, patients, carers and medical records from three major public tertiary care hospitals in Delhi, India. All patients aged ≥50 years with an X-ray confirmed hip fracture that were admitted to these hospitals over a 10-week period were recruited. Patients' data were collected at admission, discharge and 30 days post-injury. Eleven key informant interviews and four focus group discussions were conducted with healthcare providers. Descriptive data for key quantitative variables were computed. The qualitative data were analysed and interpreted using a behaviour change wheel framework.
RESULTS: A total of 136 patients, 74 (54%) men and 62 women, with hip fracture were identified in the three participating hospitals during the recruitment period and only 85 (63%) were admitted for treatment with a mean age of 66.5 years (SD 11.9). Of these, 30% received surgery within 48 h of hospital admission, 95% received surgery within 39 days of hospital admission and two (3%) had died by 30 days of injury. According to the healthcare providers, inadequate resources and overcrowding prevent adequate caring of the hip fracture patients. They unanimously felt the need for protocol-based management of hip fracture in India.
CONCLUSION: The development and implementation of national guidelines and standardized protocols of care for older people with hip fractures in India has the potential to improve both care and patient-related outcomes.

DOI: 10.1007/s11657-017-0344-1
PMCID: PMC5486685
PMID: 28577286 [Indexed for MEDLINE]

116: Roy M, Kaushal S, Jain D, Seth A, Iyer VK, Mathur SR. An institutional experience with The Paris System: A paradigm shift from ambiguous terminology to more objective criteria for reporting urine cytology. Cytopathology. 2017 Dec;28(6):509-515. doi: 10.1111/cyt.12448. Epub 2017 Aug 22. PubMed PMID: 28833848.

BACKGROUND: Urine cytology is a highly specific modality for diagnosing high-grade urothelial carcinoma (HGUC), but plagued by low sensitivity and wide inter-observer variability mainly ascribed to the lack of an established template of reporting. The Paris System (TPS) working group proposed such a template at the 2013 International Congress of Cytology, replete with objective criteria for categorising specimens into one of the seven categories: non-diagnostic, negative for HGUC, atypical urothelial cells, suspicious for HGUC, HGUC, low-grade urothelial neoplasm and others (including non-malignant entities). This study was undertaken to determine the impact of TPS criteria in the morphological interpretation of urine samples.
METHODS: A total of 255 voided urine specimens from 97 patients who had follow-up biopsies were re-assessed according to TPS criteria and correlated with the final histological diagnosis.
RESULTS: Sixty-three patients were diagnosed with HGUC, and 34 had low-grade papillary UC on biopsy. Earlier samples from 40 (41.2%) patients were categorised as merely "atypical" wheereas the "positive for malignancy" category was assigned to 33 (34%) patients. After re-evaluation of the same cases using TPS criteria, cytological features in 44 (69.8%) out of 63 HGUC patients were correctly recognised as HGUC and samples from additional seven patients were re-categorised as suspicious for HGUC (total 81%). The sensitivity of the HGUC category in predicting HGUC was 69.8% which rose to 81% when HGUC was grouped with suspicious for HGUC category.
CONCLUSION: The criteria outlined by TPS facilitated the standardisation of urine cytology reporting and significantly increased the sensitivity of diagnosing HGUC.

DOI: 10.1111/cyt.12448
PMID: 28833848

117: Sahu M, Kumar A, Nischal N, Bharath BG, Manchanda S, Wig N. Splenic Abscess Caused by Salmonella Typhi and Co-Infection with Leptospira. J Assoc Physicians India. 2017 Dec;65(12):95-97. PubMed PMID: 29327530.

Splenic abscesses caused by Salmonella typhi are a very rare complication of typhoid fever in this era of use of specific antibiotics. Co-infection with Leptospira in such a patient is even rarer. Clinical diagnosis of splenic abscess caused by Salmonella is difficult owing to its rarity, being insidious in onset and having nonspecific clinical presentation. Splenic abscesses are potentially fatal complication of typhoid fever. In most of these patients, hemoglobinopathies or some other underlying immunocompromised state is usually present. We report a case of splenic abscess, caused by Salmonella typhi, and co-infection with Leptospira in a previously healthy young male.

PMID: 29327530

118: Saluja G, Joshi HK, Takkar B, Venkatesh P. Ultrawide field imaging with navigable magnifier for diagnosis of diffuse unilateral subacute neuroretinitis. BMJ Case Rep. 2017 Dec 20;2017. pii: bcr-2017-223353. doi: 10.1136/bcr-2017-223353. PubMed PMID: 29269373.

119: Sankar J, Das RR. Asthma - A Disease of How We Breathe: Role of Breathing Exercises and Pranayam. Indian J Pediatr. 2017 Dec 16. doi: 10.1007/s12098-017-2519-6. [Epub ahead of print] PubMed PMID: 29247426.

To describe the role of breathing exercises or yoga and/or pranayama in the management of childhood asthma. We conducted an updated literature search and retrieved relevant literature on the role of breathing exercises or yoga and/or pranayama in the management of childhood asthma. We found that the breathing exercises or yoga and/or pranayama are generally multi-component packaged interventions, and are described as follows: Papworth technique, Buteyko technique, Yoga and/or Pranayam. These techniques primarily modify the pattern of breathing to reduce hyperventilation resulting in normalisation of CO2 level, reduction of bronchospasm and resulting breathlessness. In addition they also change the behaviour, decrease anxiety, improve immunological parameters, and improve endurance of the respiratory muscles that may ultimately help asthmatic children. We found 10 clinical trials conducted in children with asthma of varying severity, and found to benefit children with chronic (mild and moderate) and uncontrolled asthma, but not acute severe asthma. Breathing exercises or yoga and/or pranayama may benefit children with chronic (mild and moderate) and uncontrolled asthma, but not acute severe asthma. Before these techniques can be incorporated into the standard care of asthmatic children, important outcomes like quality of life, medication use, and patient reported outcomes need to be evaluated in future clinical trials.

DOI: 10.1007/s12098-017-2519-6
PMID: 29247426

120: Saxena A, Desai A, Narvencar K, Ramakrishnan S, Thangjam RS, Kulkarni S, Jacques' E Costa AK, Mani K, Dias A, Sukharamwala R. Echocardiographic prevalence of rheumatic heart disease in Indian school children using World Heart Federation criteria - A multi site extension of RHEUMATIC study (the e-RHEUMATIC study). Int J Cardiol. 2017 Dec 15;249:438-442. doi: 10.1016/j.ijcard.2017.09.184. Epub 2017 Sep 24. PubMed PMID: 28966041.

OBJECTIVES: Rheumatic heart disease (RHD) continues to be major public health

burden in developing world. Echocardiographic screening in school children has shown that subclinical RHD cases are several times more than clinical cases. Recent reports have used World Heart Federation (WHF) criteria. Objective of present study was to determine RHD prevalence using WHF criteria in Indian children.
METHODS: Children (5-15years) from randomly selected schools across four sites were included. After focused clinical evaluation, echocardiography was performed using WHF criteria in all children. Images/loops of abnormal cases were analyzed independently by an additional experienced cardiologist. Children with murmur and confirmatory echocardiography were categorized 'clinical RHD'; those with abnormal echocardiography alone were labeled 'subclinical RHD'.
RESULTS: Among 16,294 children included, mean age was 10.8 ± 2.9years; 55.1% were males; 11,405 (70%) were from rural areas and 3978 (24.4%) were from government schools. We detected RHD by echocardiography in 125 children [prevalence: 7.7/1000 (95% CI 6.3, 9.0)]. Borderline RHD was present in 93 children (5.7/1000, 95% CI 4.6, 6.9), definite RHD in 32 (2/1000, 95% CI 1.2, 2.6), and clinical RHD in six [0.36/1000, 95% CI: 0.1-0.7]. On univariate analysis, older age, female gender, and higher waist circumference were associated while on multivariate analysis, older age (OR 1.18, 95% CI: 1.09, 1.26) and female gender (OR 1.61, 95% CI: 1.13, 2.3) were associated with RHD.
CONCLUSION: RHD prevalence varies in different parts of India. Echocardiographic prevalence is several times higher than clinical and underscores importance of echocardiographic screening in community.

DOI: 10.1016/j.ijcard.2017.09.184
PMID: 28966041 [Indexed for MEDLINE]

121: Saxena R, Vashist P, Tandon R, Pandey RM, Bhardawaj A, Gupta V, Menon V. Incidence and progression of myopia and associated factors in urban school children in Delhi: The North India Myopia Study (NIM Study). PLoS One. 2017 Dec 18;12(12):e0189774. doi: 10.1371/journal.pone.0189774. eCollection 2017. PubMed PMID: 29253002; PubMed Central PMCID: PMC5734754.

AIM: To evaluate the incidence and progression of myopia and factors associated with progression of myopia in school going children in Delhi.
METHODS: Prospective longitudinal study of 10,000 school children aged 5 to 15 years screened after an interval of 1 year to identify new myopes (Spherical Equivalent≤ -0.5D) and progression of myopia in previously diagnosed myopic children. Association between risk factors and progression was analyzed using adjusted odds ratio.
RESULTS: Of the 9,616 children re-screened (97.3% coverage), annual incidence of myopia was 3.4%with mean dioptric change of -1.09 ± 0.55. There was a significant higher incidence of myopia in younger children compared to older children (P = 0.012) and among girls compared to boys (P = 0.002). Progression was observed in 49.2%children with mean dioptric change of -0.27 ± 0.42 diopters. The demographic and behavioral risk factors were analyzed for children with progression (n = 629) and adjusted odds ratio values were estimated. Hours of reading-writing/week (p<0.001), use of computers/ video games (P<0.001) and watching television (P = 0.048) were significant risk factors for progression of myopia. Outdoor activities / time spent outdoors> 2 hours in a day were protective with an inverse association with progression of myopia (P< 0.001).
CONCLUSION: Myopia is an important health issue in India and is associated with long hours of reading and screen time with use of computers and video games. An annual eye vision screening should be conducted, and outdoor activities be promoted to prevent the increase of myopia among school children.

DOI: 10.1371/journal.pone.0189774
PMCID: PMC5734754
PMID: 29253002 [Indexed for MEDLINE]

122: Shah S, Lodha R. Respiratory Muscle Weakness, a Major Contributor to Pediatric Extubation Failure: Does Low Serum Phosphorus Contribute to Muscle Weakness? Crit Care Med. 2017 Dec;45(12):e1303-e1304. doi: 10.1097/CCM.0000000000002709. PubMed PMID: 29149005.

123: Shalimar, Kedia S, Sharma H, Vasudevan S, Sonika U, Upadhyaya AD, Acharya SK. Predictors of infection in viral-hepatitis related acute liver failure. Scand J Gastroenterol. 2017 Dec;52(12):1413-1419. doi: 10.1080/00365521.2017.1374449. Epub 2017 Sep 6. PubMed PMID: 28875762.

OBJECTIVE: Infections are common and associated with complications and mortality in acute liver failure (ALF). The temporal relationship between ammonia and infection in ALF patients is unclear. We aimed to evaluate the predictors of infection and its relationship with arterial ammonia levels.
MATERIALS AND METHODS: Consecutive ALF patients hospitalized between January 2004 and December 2015, without signs of infection at/within 48 h of admission, were included. Occurrence of infection after 48 h was documented and ammonia levels were estimated for five consecutive days. Multivariate logistic regression analysis was used to assess factors associated with development of infection. Generalized estimating equations (GEE) were used to evaluate five-day time trend of ammonia in patients with and without infection.
RESULTS: Of 540 consecutive patients, 120 were infected at admission/within 48 h and were excluded. Of the rest 420 patients, 144 (34.3%) developed infection after 48 h and 276 (65.7%) remained non-infected. Infected patients had higher mortality than non-infected patients (61.8% vs 40.0%, p < .001). On multivariate analysis, presence of cerebral edema(HR 2.049; 95%CI, 1.30-3.23), ammonia level on day 3 of admission (HR 1.006; 95%CI, 1.003-1.008), and model for end stage liver disease (MELD) score (HR 1.051; 95%CI, 1.026-1.078) were associated with development of infection. GEE showed group difference in serial ammonia values between infected and non-infected patients indicating lack of ammonia decline in infected patients.
CONCLUSIONS: Cerebral edema, elevated ammonia on day 3, and higher MELD score predict the development of infection in ALF. Ammonia persists at high levels in infected patients, and elevated ammonia on day 3 is associated with complications and death.

DOI: 10.1080/00365521.2017.1374449
PMID: 28875762 [Indexed for MEDLINE]

124: Shambanduram SS, Devarajan Sebastian LJ, Jain N, Garg A, Gaikwad SB. Management of a rare case of posterior condylar canal dural arteriovenous fistula presenting with subarachnoid haemorrhage: A case report and review of literature. Interv Neuroradiol. 2018 Apr;24(2):206-209. doi: 10.1177/1591019917743703. Epub 2017 Dec 3. PubMed PMID: 29199500; PubMed Central PMCID: PMC5847008.

Posterior condylar canal dural arteriovenous fistula (PCC dAVF) is a rare entity with only three cases having been reported so far in the English literature. We describe the clinical presentation, imaging, and endovascular management of an elderly man with left PCC dAVF presenting with subarachnoid haemorrhage (SAH). Endovascular management of such cases requires thorough understanding of the vascular anatomy around the craniovertebral junction (CVJ) and variable bridging vein draining patterns. The fistula in our case was fed by the posterior meningeal branch of the left vertebral artery and was draining through a dilated and tortuous medullary bridging vein into the antero-lateral pontomedullary venous system. Transarterial glue embolisation was performed with complete exclusion of the fistula and venous pouches. The patient developed intractable hiccough and left-sided facial pain on the second post-procedural day, and MRI showed focal diffusion restriction in the left dorso-lateral medulla. He recovered completely after a short course of steroids.

DOI: 10.1177/1591019917743703
PMCID: PMC5847008 [Available on 2019-04-01]

PMID: 29199500

125: Sharma HP, Halder N, Singh SB, Velpandian T. Involvement of nucleoside transporters in the transcorneal permeation of topically instilled substrates in rabbits in-vivo. Eur J Pharm Sci. 2018 Mar 1;114:364-371. doi: 10.1016/j.ejps.2017.12.027. Epub 2017 Dec 30. PubMed PMID: 29292018.

The objective of the current study was to characterize and evaluate the functional importance of the Nucleoside Transporters (NTs) in the cornea of the rabbits. Reverse transcriptase polymerase chain reaction (RT-PCR) was used for the molecular characterization of the NTs. Their functionality was evaluated using two substrates, ribavirin and cytarabine. Dipyridamole was used as a blocker for the study. All the treatments were given topically. Molecular characterization of NTs revealed presence of ent1, ent2, ent3 and cnt3 in the cornea. The concentration vs time profile for cytarabine in Aqueous Humor (AH) exhibited a statistically significant ($p<0.05$) drop at 1h with blocker pretreatment. The mean AUC0-2 between the treatments was also differing in a significant ($p<0.05$) manner. The concentration vs time profile for ribavirin in AH also showed a significant ($p<0.05$) decrease in its concentration at 1h with blocker pretreatment. Dipyridamole was able to block ribavirin's entry with as low as 40nM concentration while complete blockade was achieved at 8mM and above. When cytarabine and ribavirin were co-administered, ribavirin at a concentration of 6.5mM significantly inhibited ($p<0.05$) the transcorneal permeation of cytarabine up to 80%. To conclude, this study showed the presence and functional importance of NTs in the transcorneal uptake of nucleoside substrates. This study further revealed the presence of concentration dependent competitive inhibition among substrates for their transcorneal permeation.

DOI: 10.1016/j.ejps.2017.12.027
PMID: 29292018

126: Sharma N, Singhal D, Nair SP, Sahay P, Sreeshankar SS, Maharana PK. Corneal edema after phacoemulsification. Indian J Ophthalmol. 2017 Dec;65(12):1381-1389. doi: 10.4103/ijo.IJO_871_17. Review. PubMed PMID: 29208818; PubMed Central PMCID: PMC5742966.

Phacoemulsification is the most commonly performed cataract surgery in this era. With all the recent advances in investigations and management of cataract through phacoemulsification, most of the patients are able to achieve excellent visual outcome. Corneal edema after phacoemulsification in the immediate postoperative period often leads to patient dissatisfaction and worsening of outcome. Delayed onset corneal edema often warrants endothelial keratoplasty. This review highlights the etiopathogenesis, risk factors, and management of corneal edema in the acute phase including descemet's membrane detachment (DMD) and toxic anterior segment syndrome. Various investigative modalities such as pachymetry, specular microscopy, anterior segment optical coherence tomography, and confocal microscopy have been discussed briefly.

DOI: 10.4103/ijo.IJO_871_17
PMCID: PMC5742966
PMID: 29208818 [Indexed for MEDLINE]

127: Sharma N, Singhal D, Maharana PK, Sinha R, Agarwal T, Upadhyay AD, Velpandian T, Satpathy G, Titiyal JS. Comparison of Oral Voriconazole Versus Oral Ketoconazole as an Adjunct to Topical Natamycin in Severe Fungal Keratitis: A Randomized Controlled Trial. Cornea. 2017 Dec;36(12):1521-1527. doi: 10.1097/ICO.0000000000001365. PubMed PMID: 28902012.

PURPOSE: To compare the efficacy of oral voriconazole (VCZ) with oral ketoconazole (KCZ) as an adjunct to topical natamycin in severe fungal keratitis.

METHODS: Fifty eyes of 50 patients with proven severe fungal keratitis, (>5 mm size, involving >4 mm central cornea and >50% stromal depth), smear, and/or culture positive were randomized to receive either oral VCZ (n = 25) or oral KCZ (n = 25) 200 mg twice a day. Both groups received topical natamycin along with oral medication. The primary outcome measure was best spectacle-corrected visual acuity (BSCVA) at 3 months of follow-up. Secondary outcomes were the percentage of healed cases and scar size.
RESULTS: The mean BSCVA after treatment was 1.3 ± 0.35 logarithm of minimum angle of resolution units in the VCZ group and 1.6 ± 0.39 logarithm of minimum angle of resolution units in the KCZ group [P = 0.004, 95% confidence interval (CI), -0.10 to 0.54]. The final mean scar size was smaller for oral VCZ than for oral KCZ (P = 0.04, 95% CI, -0.01 to 0.93 mm). The percentage of cases healed were 80% and 72% in VCZ and KCZ groups, respectively (P = 0.51, 95% CI, -0.15 to 0.31). The ratio of tear film to serum concentration of oral VCZ was better than oral KCZ at days 14 (P = 0.002) and 21 (P = 0.006).
CONCLUSIONS: Although the duration and percentage of healing was similar in both groups, oral VCZ attained a significantly better tear film concentration with a smaller scar size and better BSCVA compared with oral KCZ. Thus, oral VCZ may be preferred over oral KCZ in severe fungal keratitis.

DOI: 10.1097/ICO.0000000000001365
PMID: 28902012 [Indexed for MEDLINE]

128: Sharma P. The pursuit of stereopsis. J AAPOS. 2018 Feb;22(1):2.e1-2.e5. doi: 10.1016/j.jaapos.2017.10.009. Epub 2017 Dec 30. PubMed PMID: 29292047.

BACKGROUND: Pediatric ophthalmologists are increasingly expected to promote, preserve, and restore binocular vision.
METHODS: Clinical studies on restoring alignment and stereopsis in the management of amblyopia, esotropia, exotropia, and complex strabismus are reviewed from the perspective of the author's published work and personal experiences.
RESULTS: Treatment of amblyopia by means of optical rehabilitation, occlusion, or penalization has been reinforced by medical treatment and perceptual training with monocular or binocular video games. Studies indicate that early management of esotropia and alignment within 8Δ is required for regaining stereopsis. In the surgical management of intermittent exotropia, distance stereopsis by Frisby Davis Distance stereotest can predict better stereopsis, with patients having preoperative distance stereopsis of <70 arcsec less likely to improve after surgery. The surgeon's armamentarium for correcting alignment and restoring binocular vision include procedures such as adjustable, partial vertical rectus muscle transposition in cases of exotropic Duane syndrome and lateral rectus palsy, periosteal fixation of the globe or of the lateral rectus muscle, and medial transposition of the split lateral rectus muscle.
CONCLUSIONS: The goal for present-day strabismologists is not merely to correct strabismus but also to achieve alignment of eyes in time to ensure normal development of stereopsis in children and to restore alignment and stereopsis in adults.

DOI: 10.1016/j.jaapos.2017.10.009
PMID: 29292047

129: Sharma P, Sagar R. Unfolding the genetic pathways of dyslexia in Asian population: A review. Asian J Psychiatr. 2017 Dec;30:225-229. doi: 10.1016/j.ajp.2017.06.006. Epub 2017 Jun 7. Review. PubMed PMID: 28619243.

Dyslexia also known as specific reading disorder is a complex heritable disorder with unexpected difficulty in learning to read and spell despite adequate intelligence, education, environment, and normal senses. Over past decades, researchers have attempted to characterize dyslexia neurobiological and genetic

levels and unfold its pathophysiology. The genetic research on dyslexia has received attention in Asia from the last decade. Though limited by different constraints the studies from Asia have been able to gather significant evidence in this field. We present a review of studies of genetics in Asian population and suggest future directions.

DOI: 10.1016/j.ajp.2017.06.006
PMID: 28619243 [Indexed for MEDLINE]

130: Sharma S, Gupta DK. Surgical modifications, additions, and alternatives to Kasai hepato-portoenterostomy to improve the outcome in biliary atresia. Pediatr Surg Int. 2017 Dec;33(12):1275-1282. doi: 10.1007/s00383-017-4162-8. Epub 2017 Oct 4. Review. PubMed PMID: 28980051.

Kasai hepato-portoenterostomy (HPE) is the most widely used surgical technique to restore bile flow in biliary atresia (BA). We aimed to review literature on HPE substitutes and additions to Kasai especially in advanced BA (ABA). A PubMed search was done for surgical procedures apart from or along with Kasai HPE for BA. Additional procedures to prevent cholangitis were also reviewed. Procedures and outcome were analysed. Alternative procedures done by the authors have also been described briefly. Results have been compiled in this review article. In ABA, with portal hypertension and liver cirrhosis, Kasai HPE is associated with poor outcome, increased morbidity, and even mortality. Most require liver transplant (LT). Some alternatives to HPE include exploration at porta hepatis to assess the bile flow yet avoid the major surgery (HPE) as a bridge to LT. Conduit diversion may help to combat cholangitis resistant to steroid therapy. Stoma formation is not preferred in cases listed for LT due to high risk of bleeding. Hepatocyte infusion, stem cell therapy, and synthetic liver are the future options to meet the challenges in BA. Various alternative procedures may become handy in the future especially in ABA.

DOI: 10.1007/s00383-017-4162-8
PMID: 28980051 [Indexed for MEDLINE]

131: Shaw SC, Sankar MJ, Thukral A, Natarajan CK, Deorari AK, Paul VK, Agarwal R. Assisted Physical Exercise for Improving Bone Strength in Preterm Infants Less than 35 Weeks Gestation: A Randomized Controlled Trial. Indian Pediatr. 2018 Feb 15;55(2):115-120. Epub 2017 Dec 14. PubMed PMID: 29242413.

OBJECTIVE: To compare the efficacy of daily assisted physical exercise (starting from one week of postnatal age) on bone strength at 40 weeks of post menstrual age to no intervention in infants born between 27 and 34 weeks of gestation.
DESIGN: Open-label randomized controlled trial.
SETTING: Tertiary-care teaching hospital in northern India from 16 May, 2013 to 21 November, 2013.
PARTICIPANTS: 50 preterm neonates randomized to Exercise group (n=26) or Control group (n=24).
INTERVENTION: Neonates in Exercise group underwent one session of physical exercise daily from one week of age, which included range-of-motion exercises with gentle compression, flexion and extension of all the extremities with movements at each joint done five times, for a total of 10-15 min. Infants in Control group underwent routine care and were not subjected to any massage or exercise.
MAIN OUTCOME MEASURES: Primary: Bone speed of sound of left tibia measured by quantitative ultrasound at 40 weeks post menstrual age. Secondary: Anthropometry (weight length and head circumference) and biochemical parameters (calcium, phosphorus, alkaline phosphatase) at 40 weeks post menstrual age.
RESULTS: The tibial bone speed of sound was comparable between the two groups [2858 (142) m/s vs. 2791 (122) m/s; mean difference 67.6 m/s; 95% CI - 11 to 146

m/s; P=0.38]. There was no difference in anthropometry or biochemical parameters. CONCLUSIONS: Daily assisted physical exercise does not affect the bone strength, anthropometry or biochemical parameters in preterm (27 to 34 weeks) infants.

PMID: 29242413 [Indexed for MEDLINE]

132: ---

133: Sikary AK, Behera C. Homicidal methanol poisoning in filicide-suicide. Med Leg J. 2017 Dec;85(4):219-220. doi: 10.1177/0025817217701367. Epub 2017 Mar 21. PubMed PMID: 29210340.

Most methanol poisonings are accidental. We present a rare case of filicide-suicide, where a youth was killed by methanol poisoning and his parents then committed suicide by jumping in front of a running train. The father's suicide note explains the crime.

DOI: 10.1177/0025817217701367
PMID: 29210340

134: Singh A, Gupta N, Ganger A, Vashist P, Tandon R. Awareness Regarding Eye Donation in an Urban Slum Population: A Community-Based Survey. Exp Clin Transplant. 2017 Dec 18. doi: 10.6002/ect.2017.0077. [Epub ahead of print] PubMed PMID: 29251584.

OBJECTIVES: Our objective was to assess the awareness of eye donation in an urban slum population and willingness to donate eyes after death.
MATERIALS AND METHODS: A cross-sectional, population-based study was undertaken in 20 urban slum clusters of the Indian capital, New Delhi. A total of 2004 individuals aged 18 years and older were recruited. After written, informed consent was obtained, knowledge regarding eye donation was assessed through a predesigned close-ended questionnaire. The questionnaire was framed so as to understand the sociodemographic factors influencing the willingness to donate and the awareness of eye donation in this distinct population.
RESULTS: The mean age of the recruited individuals was 36.53 ± 13.68 years. Age did not have any significant effect on awareness regarding eye donation. We observed that 34.3% of the study population had no knowledge of eye donation and that 7.78% of the study population had excellent knowledge. Education seemed to be an important determining factor regarding knowledge of eye donation. Multivariable logistic regression demonstrated better awareness among the Hindu population (81.1%) and those belonging to a higher caste ($P < .05$). The younger age group (those 18-30 years old) showed significant willingness to donate their eyes versus older age groups ($P < .001$). In our study population, male participants ($P = .006$), those classified as literate ($P < .001$), and those classified as Hindu ($P < .001$) were more willing to pledge their eyes for donation.
CONCLUSIONS: Although there is substantial awareness about eye donation, willingness to pledge eyes was very low in the urban slum population. Additional efforts are needed to translate this awareness into actual eye donation in the urban poor population.

DOI: 10.6002/ect.2017.0077
PMID: 29251584

135: ---

136: ---

137: Singh P, Arora A, Strand TA, Sommerfelt H, Lodha R, Kabra SK, Aneja S, Natchu UCM, Chandra J, Rath B, Sharma VK, Kumari M, Saini S, Bhatnagar S, Wadhwa N. Predictors of death in infants with probable serious bacterial infection. Pediatr Res. 2018 Apr;83(4):784-790. doi: 10.1038/pr.2017.299. Epub 2017 Dec 20.

PubMed PMID: 29166376.

BackgroundBacterial infections account for a significant proportion of neonatal and infant mortality globally. We aimed to identify predictors of death in infants with probable serious bacterial infection (PSBI) defined as signs/symptoms of possible serious bacterial infection along with baseline C-reactive protein (CRP) ≥12 mg/l.MethodsWe did a secondary analysis using the data collected from 700 infants with PSBI who participated in a randomized controlled trial in India in which zinc or placebo was given in addition to the standard antibiotics. Logistic regression was used to estimate the associations between relevant variables and death within 21 days.ResultsThose infants who were fed cow's milk or formula before the illness episode had 3.7-fold (95% confidence interval (CI) 1.5-9.3) and 5.3-fold (95% CI 2.0-13.6) higher odds of death, respectively. Lethargy (odds ratio (OR) 2.4, 95% CI 1.1-5.4) and CRP (OR 1.9, 95% CI 1.1-3.3) were also independent predictors of death. In the model including only clinical features, female gender (OR 2.25, 95% CI 1.0-5.0), abdominal distention (3.7, 95% CI 1.1-12.3), and bulging fontanelle (5.8, 95% CI 1.1-30.5) were also independent predictors for death.ConclusionFormula or cow milk feeding prior to the illness, lethargy at the time of presentation, and high serum CRP levels predicted death in infants with PSBI.

DOI: 10.1038/pr.2017.299
PMID: 29166376

138: Singh R, Mukherjee A, Singla M, Das BK, Kabra SK, Lodha R. Immunological and Virological Responses to Highly Active Antiretroviral Therapy in HIV-1 Infected Children. Indian J Pediatr. 2017 Dec;84(12):893-896. doi: 10.1007/s12098-017-2441-y. Epub 2017 Sep 6. PubMed PMID: 28875475.

OBJECTIVE: To evaluate immunological and virological outcomes in human immunodeficiency virus (HIV) infected children at six months of highly active antiretroviral therapy (HAART).
METHODS: Records of HIV infected children <15-y-old were reviewed to identify those who were initiated highly active antiretroviral therapy between 2010 and 2014 and had CD4+ T cell percentage and HIV-1 viral load report at baseline visit and after 6 mo of initiation of the treatment.
RESULTS: Seventy-four HIV infected children [26% girls, median age IQR 36 (24-108) mo] were included in the study. At the end of six months of HAART, median increase of 11% (6-15%) in CD4+ T cell percentage from the baseline levels was observed; nineteen (26%) children showed an increase in CD4+ T cell percentage of 15% or more at 6 mo. Viral load was undetectable (<47 copies/ml) in 27 (36.4%) children; 21 (28.3%) children had 47- < 500 copies/ml; 16 (21.6%) children had 500- < 10,000 copies/ml and 10 (13.5%) children had ≥10,000 copies/ml. At six months, only 15 (20.2%) children exhibited positive immuno-virological response to HAART (≥ 15% increase in CD4% and <47 HIV-1 RNA copies/ml).
CONCLUSIONS: While HAART was effective in improving the immunological and virological parameters in the index cohort of children, virological responses were less robust.

DOI: 10.1007/s12098-017-2441-y
PMID: 28875475

139: Singh S, Sankar MM. Diagnostic algorithm for low-volume CSF samples in tuberculous meningitis. Lancet Infect Dis. 2017 Dec;17(12):1236-1237. doi: 10.1016/S1473-3099(17)30639-4. PubMed PMID: 29173879.

140: Singh S, Taneja N, Arava S, Bhari N. Nevus trichilemmocysticus. Int J Dermatol. 2017 Dec;56(12):1483-1486. doi: 10.1111/ijd.13786. Epub 2017 Oct 3. PubMed PMID: 28971476.

141: Singh S, Khandpur S, Arava S, Rath R, Ramam M, Singh M, Sharma VK, Kabra SK. Assessment of histopathological features of maculopapular viral exanthem and drug-induced exanthem. J Cutan Pathol. 2017 Dec;44(12):1038-1048. doi: 10.1111/cup.13047. Epub 2017 Oct 13. PubMed PMID: 28914958.

BACKGROUND: Viral infections and drug reactions are the commonest causes of exanthems in clinical practice. Clinically, their overlapping features may pose a diagnostic challenge. Hematologic, in vitro, and drug provocation tests are either unreliable or impractical.
METHODS: This was a descriptive, prospective study to assess and compare histopathological features of maculopapular viral and drug exanthem. Subjects fulfilling case definition of exanthems were included. Serum C-reactive protein (CRP) and absolute eosinophil count (AEC) were also studied.
RESULTS: Skin biopsy slides of 48 cases were evaluated and AEC and CRP were performed. Both median AEC and CRP were lower in viral exanthem compared with drug exanthem. On histopathological evaluation, features such as lymphocytic exocytosis, and dermal infiltrate of eosinophils, lymphocytes and histiocytes were seen in a significantly greater number of drug exanthems. Other findings such as focal spongiosis, acanthosis, keratinocyte necrosis, basal cell damage, papillary dermal edema and atypical lymphocytes in the dermis were also observed in higher though not statistically significant number of drug exanthem biopsies.
CONCLUSIONS: Certain histopathological features can help to differentiate between the two exanthems and this modality may be used in situations when there is clinical overlap and when drug rechallenge cannot be undertaken.

DOI: 10.1111/cup.13047
PMID: 28914958 [Indexed for MEDLINE]

142: Singh S, Saraya A, Das P, Sharma R. Increased expression of MARCH8, an E3 ubiquitin ligase, is associated with growth of esophageal tumor. Cancer Cell Int. 2017 Dec 4;17:116. doi: 10.1186/s12935-017-0490-y. eCollection 2017. PubMed PMID: 29213217; PubMed Central PMCID: PMC5715508.

Background: Herein, for the first time, we report aberrant expression of membrane-associated RING-CH8 (MARCH8) in human esophageal squamous cell carcinoma. MARCH8 is a member of the recently discovered MARCH family of really interesting new genes (RING) E3 ligases. Though initial studies primarily focused on its immunomodulatory role, the newly discovered targets of this E3 ligase point towards its possible role in other biological processes such as embryogenesis and inhibition of apoptosis. However, its relevance in cancers is yet to be elucidated.
Methods: We carried out quantitative real time PCR and immunohistochemistry to examine the levels of MARCH8 mRNA and protein in esophageal squamous cell carcinoma tissues. The role of MARCH8 in esophageal cancer cells was evaluated by cell proliferation, clonogenic and migration/invasion assays and flow cytometry with MARCH8 gene knockdown.
Results: Significantly increased expression of MARCH8 mRNA was found in esophageal squamous cell carcinoma as compared to distant matched non-malignant tissues ($p = 0.024$, AUC = 0.654). Immunohistochemical analysis revealed overexpression of MARCH8 protein in 86% of esophageal squamous cell carcinoma tissues ($p < 0.001$, AUC = 0.908). Interestingly, intense nuclear staining of MARCH8 protein was detected in cancer cells in addition to its cytoplasmic expression. Knockdown of MARCH8 resulted in decreased proliferation, migration, invasion and clonogenic potential of esophageal cancer cells. In addition to this, silencing of MARCH8 induced apoptosis in esophageal cancer cells which was measured by cell cycle distribution assay which showed increase in sub G0 and G2/M populations (cell death) and decrease in S-phase population. To further check the type of apoptosis induced by MARCH8 silencing, annexin assay was performed which showed significant increase in the number of cells in early apoptotic phase.

Conclusions: Overall, increased expression of MARCH8 gene in preneoplastic and neoplastic esophageal tissues and its knockdown effect on cancer cell properties demonstrated herein points towards the potential role of this protein in esophageal tumorigenesis.

DOI: 10.1186/s12935-017-0490-y
PMCID: PMC5715508
PMID: 29213217

143: Sinha A, Desiraju K, Aggarwal K, Kutum R, Roy S, Lodha R, Kabra SK, Ghosh B, Sethi T, Agrawal A. Exhaled breath condensate metabolome clusters for endotype discovery in asthma. J Transl Med. 2017 Dec 22;15(1):262. doi: 10.1186/s12967-017-1365-7. PubMed PMID: 29273025; PubMed Central PMCID: PMC5741898.

BACKGROUND: Asthma is a complex, heterogeneous disorder with similar presenting symptoms but with varying underlying pathologies. Exhaled breath condensate (EBC) is a relatively unexplored matrix which reflects the signatures of respiratory epithelium, but is difficult to normalize for dilution.
METHODS: Here we explored whether internally normalized global NMR spectrum patterns, combined with machine learning, could be useful for diagnostics or endotype discovery. Nuclear magnetic resonance (NMR) spectroscopy of EBC was performed in 89 asthmatic subjects from a prospective cohort and 20 healthy controls. A random forest classifier was built to differentiate between asthmatics and healthy controls. Clustering of the spectra was done using k-means to identify potential endotypes.
RESULTS: NMR spectra of the EBC could differentiate between asthmatics and healthy controls with 80% sensitivity and 75% specificity. Unsupervised clustering within the asthma group resulted in three clusters (n = 41,11, and 9). Cluster 1 patients had lower long-term exacerbation scores, when compared with other two clusters. Cluster 3 patients had lower blood eosinophils and higher neutrophils, when compared with other two clusters with a strong family history of asthma.
CONCLUSION: Asthma clusters derived from NMR spectra of EBC show important clinical and chemical differences, suggesting this as a useful tool in asthma endotype-discovery.

DOI: 10.1186/s12967-017-1365-7
PMCID: PMC5741898
PMID: 29273025

144: Sinha R, Chaniyara MH, Urkude J, Pujari A. Surgical removal of a giant iris stromal cyst: an intraoperative optical coherence tomography-guided approach. BMJ Case Rep. 2017 Dec 27;2017. pii: bcr-2017-220972. doi: 10.1136/bcr-2017-220972. PubMed PMID: 29282204.

An 11-year-old girl was brought with the chief complaint of progressive diminution of vision in her right eye for the past 3 months. There was no history of ocular trauma or any ocular surgery. Systemic and family history was insignificant. Visual acuity was 20/20 in her left eye and counting finger close to face with projection of rays being accurate in her right eye. Slit lamp examination of her right eye showed large cystic lesion filling almost entire anterior chamber. With the help of various imaging modalities like anterior segment optical coherence tomography (OCT) and ultrasound biomicroscopy diagnosis of iris stromal cyst was confirmed. Right eye surgical removal of the iris stromal cyst was done under real-time imaging of intraoperative OCT (iOCT). Best-corrected visual acuity at 6 months follow-up was 20/20 without any recurrence. iOCT-guided approach for complete removal of the iris cyst seems more promising.

expressly granted.

DOI: 10.1136/bcr-2017-220972
PMID: 29282204

Conflict of interest statement: Competing interests: None declared.

145: Sinha S, Gupta K, Tripathy S, Dhooria S, Ranjan S, Pandey RM. Nevirapine-versus Efavirenz-based antiretroviral therapy regimens in antiretroviral-naive patients with HIV and Tuberculosis infections in India: a multi-centre study. BMC Infect Dis. 2017 Dec 11;17(1):761. doi: 10.1186/s12879-017-2864-0. PubMed PMID: 29228918; PubMed Central PMCID: PMC5725946.

BACKGROUND: According to World Health Organization (WHO) guidelines, which have also been adopted by the National AIDS Control Organization (NACO), India, Efavirenz-based Anti-Retroviral Therapy (ART) is better in Human-Immunodeficiency-Virus (HIV)-infected patients who are also being treated with Rifampicin-based Anti-Tuberculous Therapy (ATT). However, Efavirenz is much more expensive. We hypothesize that Nevirapine is a cheaper alternative that possesses equal efficacy as Efavirenz in HIV-Tuberculosis (TB) co-infected patients.
METHODS: A parallel open-label randomized clinical trial was conducted at All India Institute of Medical Sciences (AIIMS), New Delhi and National AIDS Research Institute (NARI), Pune. Those who were ART-naïve and co-infected with TB were randomized to receive either Nevirapine (Group 1)- or Efavirenz (Group 2)-based ART along with Rifampicin-based ATT. ATT was begun first in ART-naïve patients according to the NACO guidelines, with a median of 27 days between ATT and ART in both groups. The primary endpoint was a composite unfavourable outcome (death and/or ART failure) at 96 weeks, and the secondary outcome was successful TB treatment at 48 weeks.
RESULTS: A total of 284 patients (mean age 36.7±8.1 years) were randomized in a 1:1 ratio to receive either Nevirapine (n=144)- or Efavirenz (n=140)-based ART after a median ATT-ART gap of 27 days. The median CD4 count was 105 cells/µl, with a median viral load of 820,200 copies/µl and no significant difference between the groups. Composite unfavourable outcomes were reported in 49 patients in the Nevirapine group and 51 patients in the Efavirenz group (35.3% vs. 36.9%; hazard ratio, 0.95, 95% confidence interval (CI), 0.63,1.43, adjusted). There was no difference in successful TB treatment outcome between the groups (71.5% vs. 65.6%, 95% CI -3.8,17.9, adjusted). The results were similar, showing no difference between the groups in the two centres of the study after adjusting for disease stage.
CONCLUSIONS: Composite unfavourable outcome in HIV-TB co-infected patients who were ART-naïve showed no statistically significant difference in the Nevirapine or Efavirenz groups.. Therefore, Nevirapine-based ART is a reasonable alternative to Efavirenz in resource-limited settings. However, multi-centric studies with larger sample sizes are required to confirm these findings.
TRIAL REGISTRATION: NCT01805258 (Retrospectively registered on March 6, 2013) Date of registration: March 2013.

DOI: 10.1186/s12879-017-2864-0
PMCID: PMC5725946
PMID: 29228918 [Indexed for MEDLINE]

146: Soni A, Jha SK. Smartphone based non-invasive salivary glucose biosensor. Anal Chim Acta. 2017 Dec 15;996:54-63. doi: 10.1016/j.aca.2017.10.003. Epub 2017 Oct 17. PubMed PMID: 29137708.

The present work deals with the development of a non-invasive optical glucose biosensor using saliva samples and a smartphone. The sensor was fabricated with a simple methodology by immobilization of Glucose oxidase enzyme along with a pH responsive dye on a filter paper based strip. The strip changes color upon reaction with glucose present in saliva and the color changes were detected using

a smartphone camera through RGB profiling. This standalone biosensor showed good sensitivity and low interference while operating within 20 s response time. We used various means for improvements such as the use of slope method instead of differential response; use of a responsive pH indicator and made numerous tweaks in the smartphone app. Calibration with spiked saliva samples with slopes for (R + G + B) pixels revealed an exponentially increasing calibration curve with a linear detection range of 50-540 mg/dL, sensitivity of 0.0012 pixels sec-1/mg dL-1 and LOD of 24.6 mg/dL. The biosensor was clinically validated on both healthy and diabetic subjects divided into several categories based on sex, age, diabetic status etc. and correlation between blood and salivary glucose has been established for better standardization of the sensor. Correlation of 0.44 was obtained between blood and salivary glucose in healthy individuals whereas it was 0.64 and 0.94 in case of prediabetic and diabetic patients respectively. The developed biosensor has the potential to be used for mass diagnosis of diabetes especially in such areas where people remain prohibited from routine analysis due to high healthcare cost. Apart from that, a smartphone would be the only device the user needs for this measurement, along with a disposable low cost test strip.

DOI: 10.1016/j.aca.2017.10.003
PMID: 29137708 [Indexed for MEDLINE]

147: Srivastava K, Chandra S, Narang R, Bhatia J, Saluja D. E-selectin gene in essential hypertension: a case-control study. Eur J Clin Invest. 2018 Jan;48(1). doi: 10.1111/eci.12868. Epub 2017 Dec 13. PubMed PMID: 29178542.

BACKGROUND: Hypertension is associated with endothelial cell dysfunction. E-selectin, an endothelial cell adhesion molecule, is specific for endothelial cell activation. Polymorphism in E-selectin gene has recently been identified among which Leu554Phe E-selectin gene polymorphism is least investigated in essential hypertension. This study reports the association of E-selectin gene Leu554Phe polymorphism and the expression of E-selectin gene in patients with essential hypertension.
MATERIALS AND METHODS: We analysed the Leu554Phe polymorphism and expression of E-selectin gene in 250 patients with essential hypertension and 250 normal healthy controls. Genotyping of Leu554Phe polymorphism was performed by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP), and the expression of E-selectin gene at mRNA and protein levels were carried out by real-time PCR and Western blot, respectively.
RESULTS: A significant association of E-selectin genotypes (CT + TT) with essential hypertension (P < .0001, Odds ratio = 2.2 [1.58-3.24] at 95% CI) was observed. The expression of mRNA for E-selectin gene in patients with essential hypertension was ~12-fold higher as compared to control. We observed an elevated level of E-selectin protein expression (up to 1.9 times) in patients as compared to controls.
CONCLUSIONS: A significant association of E-selectin (Leu554Phe) gene and increased expression of E-selectin gene at mRNA and protein levels in patients might be related to the genetic predisposition to develop essential hypertension.

DOI: 10.1111/eci.12868
PMID: 29178542

148: Subramanian K, Sarkar S, Kattimani S, Philip Rajkumar R, Penchilaiya V. Role of stressful life events and kindling in bipolar disorder: Converging evidence from a mania-predominant illness course. Psychiatry Res. 2017 Dec;258:434-437. doi: 10.1016/j.psychres.2017.08.073. Epub 2017 Aug 30. PubMed PMID: 28870645.

Stressful life events can precipitate relapses and recurrences in bipolar

disorder. Kindling in bipolar disorder has been linked to maladaptive psychological reactivity to minor stressful life events. Systematic studies on life events and kindling are rare in bipolar disorder with a manic predominant polarity. One hundred and forty-nine remitted patients with bipolar I disorder were recruited. The National Institute of Mental Health-Life Chart Methodology was used to depict the illness course retrospectively, and the Presumptive Stressful Life Events Scale-Lifetime version was used to record the stressful life events. The role of stressful life events and the probability of kindling were assessed using appropriate statistics. There was a mania-predominant course of bipolar disorder in the sample with 55.7% (n = 83) having only recurrent mania. Family conflict and altered sleep patterns were the commonly reported stressful life events. When controlled for the severity of the stressor, the stressful life events were often associated with the initial episodes rather than the latter ones. Kindling may occur in bipolar disorder with mania as the predominant polarity. However, retrospective recall bias and hospital-based sampling limit generalizability of such observations.

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PMID: 28870645 [Indexed for MEDLINE]

149: Suliankatchi RA, Sinha DN, Rath R, Aryal KK, Zaman MM, Gupta PC, Karki KB, Venugopal D. Smokeless tobacco use is 'replacing' the smoking epidemic in the South East Asia Region. Nicotine Tob Res. 2017 Dec 22. doi: 10.1093/ntr/ntx272. [Epub ahead of print] PubMed PMID: 29281083.

Background: The sustained anti-tobacco campaign initiated in response to the mounting evidence against tobacco smoking has driven tobacco companies and smokers to look for alternative choices, such as smokeless tobacco (SLT) products. If this strategy advances it could undermine several gains made by the campaign over the years. Our objective was to examine the trends in the prevalence of different tobacco types in three countries (Bangladesh, India and Nepal) of South-East Asia.
Methods: Data from national surveys was used to estimate the trends of weighted and age standardized prevalence (along with 95% CI) of different tobacco products. The share of each tobacco type was then calculated as a percentage of total tobacco use for each time point and country.
Results: In all the three countries, smoking prevalence declined (by 6% in Bangladesh, 3% in India and 7% in Nepal) but SLT use increased (by 3% in Bangladesh, 6% in India and 4% in Nepal) over the study period. SLT use increased irrespective of whether the total tobacco use increased or decreased. The share of SLT as a percentage of total tobacco use increased from 15% to 19% among Bangladeshi men, from 46% to 61% in India and from 29% to 41% in Nepal.
Conclusions: In South-East Asia, a clear shift in the product preference from smoking to SLT was noted. Misleading advertising by tobacco companies may be responsible for the increase in the SLT prevalence, which is as harmful as smoking. Countries should strengthen policies to restrict SLT usage and prevent the rise of its use.
Implications: It has been documented that the smoking prevalence has been declining in most countries of the South-East Asia region where effective anti-tobacco laws have been implemented. But due to a number of factors, the prevalence of smokeless tobacco has been increasing steadily, making the entire anti-tobacco movement less effective in terms of reducing the tobacco-attributable disease burden. In this context, this study has provided a detailed comparative analysis of the prevalence of smokeless tobacco use and smoking in three countries of the SEAR where such data was available. It can be clearly seen that the preference for smoking has shifted towards the smokeless tobacco in all the three study countries. This study recommends that tobacco control interventions should be aligned with the changing dynamics of the tobacco epidemic, and the need of the hour is placing restrictions of smokeless tobacco

use so as to drive forward the gains of the anti-tobacco movement.

DOI: 10.1093/ntr/ntx272
PMID: 29281083

150: Tajmul M, Parween F, Singh L, Mathur SR, Sharma JB, Kumar S, Sharma DN, Yadav S. Identification and validation of salivary proteomic signatures for non-invasive detection of ovarian cancer. Int J Biol Macromol. 2018 Mar;108:503-514. doi: 10.1016/j.ijbiomac.2017.12.014. Epub 2017 Dec 6. PubMed PMID: 29222021.

Ovarian cancer (OC) is one of the most lethal cancers among all gynecological malignancies. An effective and non-invasive screening approach is needed urgently to reduce high mortality rate. The purpose of this study was to identify the salivary protein signatures (SPS) for non-invasive detection of ovarian cancer. Differentially expressed SPS were identified by fluorescence-based 2D-DIGE coupled with MALDI/TOF-MS. The expression levels of three differential proteins (Lipocalin-2, indoleamine-2, 3-dioxygenase1 (IDO1) and S100A8) were validated using western blotting and ELISA. Immunohistochemistry and qRT-PCR were performed in an independent cohort of ovarian tumor tissues. 25 over expressed and 19 under expressed ($p<0.05$) proteins between healthy controls and cancer patients were identified. Lipocalin-2, IDO1 and S100A8 were selected for initial verification and successfully verified by immunoassay. Diagnostic potential of the candidate biomarkers was evaluated by ROC analysis. The selected biomarkers were further validated by immunohistochemistry in an independent cohort of ovarian tissues. The global expression of selected targets was also analyzed by microarray and validated using qRT-PCR to strengthen our hypothesis. Tumor secreted proteins identified by 'dual-omics' strategy, whose concentration are significantly high in ovarian cancer patients have obvious potential to be used as screening biomarker after large scale validation.

DOI: 10.1016/j.ijbiomac.2017.12.014
PMID: 29222021

151: Tripathi M, Tripathi M, Roy SG, Parida GK, Ihtisham K, Dash D, Damle N, Shamim SA, Bal C. Metabolic topography of autoimmune non-paraneoplastic encephalitis. Neuroradiology. 2018 Feb;60(2):189-198. doi: 10.1007/s00234-017-1956-2. Epub 2017 Dec 18. PubMed PMID: 29255919.

PURPOSE: F-18 fluorodeoxyglucose (FDG) positron emission tomography (PET) is emerging to be a useful tool in supporting the diagnosis of AIE. In this study, we describe the metabolic patterns on F-18 FDG PET imaging in AIE.
METHODS: Twenty-four antibody-positive patients (anti-NMDA-15, anti-VGKC/LGI1-6, and anti-GAD-3), 14 females and 10 males, with an age range of 2-83 years were included in this study. Each PET study was evaluated visually for the presence of hypometabolism or hypermetabolism and semiquantitatively using Cortex ID (GE) and Scenium (Siemens) by measuring regional Z-scores. These patterns were correlated with corresponding antibody positivity once available.
RESULTS: Visually, a pattern of hypometabolism, hypermetabolism, or both in various spatial distributions was appreciated in all 24 patients. On quantitative analysis using scenium parietal and occipital lobes showed significant hypometabolism with median Z-score of -3.8 (R) and -3.7 (L) and -2.2 (R) and -2.5 (L) respectively. Two-thirds (16/24) showed significant hypermetabolism involving the basal ganglia with median Z-score of 2.4 (R) and 3.0 (L). Similarly on Cortex ID, the median Z-score for hypometabolism in parietal and occipital lobes was -2.2 (R) and -2.4 (L) and -2.6 (R) and -2.4 (L) respectively, while subcortical

regions were not evaluated. MRI showed signal alterations in only 11 of these patients.
CONCLUSION: There is heterogeneity in metabolic topography of AIE which is characterized by hypometabolism most commonly involving the parietal and occipital cortices and hypermetabolism most commonly involving the basal ganglia. Scenium analysis using regional Z-scores can complement visual evaluation for demonstration of these metabolic patterns on FDG PET.

DOI: 10.1007/s00234-017-1956-2
PMID: 29255919 [Indexed for MEDLINE]

152: Tulsyan S, Das CJ, Tripathi M, Seth A, Kumar R, Bal C. Comparison of 68Ga-PSMA PET/CT and multiparametric MRI for staging of high-risk prostate cancer68Ga-PSMA PET and MRI in prostate cancer. Nucl Med Commun. 2017 Dec;38(12):1094-1102. doi: 10.1097/MNM.0000000000000749. PubMed PMID: 28957842.

INTRODUCTION: We carried out this study to compare Glu-NH-CO-NH-Lys-(Ahx) [Ga(HBED-CC)] [Ga prostate-specific membrane antigen-11 (PSMA-11)] PET with multiparametric MRI (mpMRI) for the staging of high-risk prostate cancer.
PATIENTS AND METHODS: This was a prospective study in which 36 patients with high-risk prostate cancer were included. The criteria for inclusion were biopsy-proven prostate cancer with a serum prostate specific antigen of at least 20 and/or Gleason's score of at least 8. Each patient then underwent both gallium-68 (Ga)-PSMA PET/computed tomography (CT) and mpMRI including diffusion-weighted whole-body imaging with background body signal suppression within an interval of 1 week and both modalities were compared for staging of primary disease, lymph node, and distant metastasis.
RESULTS: The median age of the 36 patients included was 65 years (range: 44-80 years) and the median prostate specific antigen was 94.3 ng/ml (range: 20-19005 ng/ml). Concordance for localization of primary on Ga-PSMA PET/CT and MRI was observed in 19/36 (52.7%) patients. Concurrence for T staging on Ga-PSMA and MRI was observed in 58.3% of patients. Ga-PSMA PET/CT detected higher numbers of patients with regional (29) and nonregional (15) lymph nodes in comparison with MRI (20 and 5, respectively). Concurrence for regional and nonregional lymph node staging was observed in 72.2% of patients. Additional sites of metastatic disease reported on Ga-PSMA PET/CT were to the skeleton in one patient, the lung in two patients, and the liver in one patient.
CONCLUSION: This study suggests that Ga-PSMA PET/CT is useful for lymph node and metastases staging in high-risk prostate cancers, whereas its utility for staging of disease in the prostate is limited.

DOI: 10.1097/MNM.0000000000000749
PMID: 28957842 [Indexed for MEDLINE]

153: Vallonthaiel AG, Malik PS, Singh V, Kumar V, Kumar S, Sharma MC, Mathur S, Arava S, Guleria R, Jain D. Clinicopathologic correlation of programmed death ligand-1 expression in non-small cell lung carcinomas: A report from India. Ann Diagn Pathol. 2017 Dec;31:56-61. doi: 10.1016/j.anndiagpath.2017.07.001. Epub 2017 Jul 14. PubMed PMID: 29146060.

INTRODUCTION: Increased expression of Programmed death ligand-1 (PD-L1) on cancer cells and immune cells predict response to PD-1/PDL1 inhibitors. Data regarding frequency and pattern of PD-L1 expression in NSCLC from India is not available.
OBJECTIVES: To analyse PD-L1 expression on tumour cells (TC) and immune cells (IC) and to correlate PD-L1 expression with baseline clinico-pathological characteristics, oncogenic drivers and outcome data.
MATERIALS AND METHODS: PD-L1 expression on tumour cells and immune cells was analysed.
RESULTS: Eighty-nine cases of resected NSCLC were included. Squamous cell carcinoma was more common than adenocarcinoma. IC were present in almost all cases. Immunopositivity for PD-L1 in TC and IC was 27% and 18% respectively. PD-L1 immunopositivity in TC or IC did not correlate with age, sex, stage or

mutation status however sarcomatoid carcinoma and solid predominant adenocarcinomas showed higher positivity rates. PD-L1 immunopositivity in ICs was found to correlate with better disease free survival.
CONCLUSION: PD-L1 immunopositivity was seen in a quarter of NSCLC patients in India. PDL1 positivity on immune cells may be associated with better prognosis in resected NSCLC. However the prognostic value of PD-L1 and clinical response to check point inhibitors in Indian population need to be validated in larger studies.

DOI: 10.1016/j.anndiagpath.2017.07.001
PMID: 29146060 [Indexed for MEDLINE]

154: Venkatesh P. Editorial: Pediatric Ophthalmology. Indian J Pediatr. 2017 Dec;84(12):922-923. doi: 10.1007/s12098-017-2541-8. Epub 2017 Nov 4. PubMed PMID: 29101628.

155: Venkatesulu B, Mallick S, Giridhar P, Upadhyay AD, Rath GK. Pattern of care and impact of prognostic factors on the outcome of head and neck extramedullary plasmacytoma: a systematic review and individual patient data analysis of 315 cases. Eur Arch Otorhinolaryngol. 2018 Feb;275(2):595-606. doi: 10.1007/s00405-017-4817-z. Epub 2017 Dec 9. Review. PubMed PMID: 29224044.

INTRODUCTION: Head and neck extramedullary plasmacytoma is a rare localized plasma cell neoplasm. We intended to perform this review of the published literature to assess the demographic profile, pattern of care and survival outcomes.
METHODS: Two authors independently searched PubMed, Google search and Cochrane library for eligible studies from 1950 till July 1, 2016, published in English language.
RESULTS: Median age of the cohort was 57 years (range 11-85). Site-wise distributions were paranasal sinuses 22.3% (70), nasal cavity 17.5% (55), nasopharynx 10.8% (34). Median size of SEMP was 3 cm (range 0.3-12 cm). Treatment distribution was radiotherapy (RT) in 52% (164), surgery (S) 19% (60), chemotherapy (C) 5% (16), S+RT 23.49% (74),CRT 1.9% (6), S+C 0.6% (2), S+RT+C 0.95% (3).Radiation was used as a modality in 78.4%(247), surgery in 44.1%(139), chemotherapy in 4.8%(15). Median radiation dose used was 45 Gy with range 20-61 Gy. Median overall survival (OS) was 40 months (range 0.5-298). Median local progression-free survival was 36 months (range 0-298). Median myeloma relapse-free survival was 36 months (range 0.5-298). Five- and 10-year OS was 78.33 and 68.61%. Five-year cause-specific survival (CSS) and 10-year CSS was 90.15 and 83.31%. Five-year LPFS was 94.78%, and 10-year LPFS was 88.43%. Five-year myeloma progression-free survival was 84.46%, and 10-year myeloma PFS was 80.44%. The factors associated with risk of local relapse were site of disease (sinonasal), secretory EMP, type of treatment received (surgery+RT>RT alone>surgery on univariate analysis). Risk factors for myeloma relapse were coexisting diseases, site of disease (sinonasal), bony erosion, size of lesion>5 cm and type of treatment received on univariate analysis.
CONCLUSION: Our study shows that combined modality S+RT is superior compared to uni-modality in preventing local recurrence. Radiation dose of 45 Gy is optimal. Nodal irradiation has no impact on local recurrence.

DOI: 10.1007/s00405-017-4817-z
PMID: 29224044 [Indexed for MEDLINE]

156: Venugopal G, Mechenro J, Makharia G, Singh A, Pugazhendhi S, Balamurugan R, Ramakrishna BS. Sequential testing with different tissue transglutaminase antibodies, a new approach for diagnosis of celiac disease. Indian J Gastroenterol. 2017 Nov;36(6):481-486. doi: 10.1007/s12664-017-0803-z. Epub 2017

Dec 22. PubMed PMID: 29270909.

BACKGROUND: The diagnosis of celiac disease (CeD) in clinical practice relies on serological testing for IgA antibodies to human tissue transglutaminase (anti-tTG) which diagnose CeD autoimmunity. We compared three kits for their performance in diagnosis of the disease and evaluated the point prevalence of CeD autoimmunity in a South Indian urban population.
METHODS: In the first part of the study, sera from 90 patients with documented CeD and 92 healthy controls were tested for anti-tTG using three different kits. One thousand nine hundred and seventeen healthy adults residing in urban areas of Vellore and Kancheepuram districts were tested for CeD autoimmunity using a sequential two-test strategy.
RESULTS: The sensitivity, specificity, false positivity, false negativity, positive predictive value, and negative predictive value for the three assays respectively were as follows: 95.5%, 82.6%, 17.3%, 4.4%, 84.3%, and 95% for the Aeskulisa New Generation Assay; 85.5%, 100%, 0%, 14.4%, 100%, and 87.6% for Quanta Lite; and 71.1%, 100%, 0%, 28.8%, 100%, and 71% for Celiac Microlisa. The ROC curves showed good discrimination for all three ELISAs with an AUC of 0.947, 0.950, and 0.886 for the Aeskulisa, Quanta Lite, and Celiac Microlisa, respectively. Of 1917 (males 908, females 1009) healthy adults, 113 (5.89%) were seropositive for IgA anti-htTG in the Aeskulisa test. Two of the latter tested positive in the Quanta Lite assay and/or the Celiac Microlisa assay. The CeD autoimmunity prevalence in this urban population was 1.0 per thousand (95% confidence interval 0.3 to 3.7 per thousand).
CONCLUSION: Sequential testing for anti-tTG using first a highly sensitive assay followed by a very specific assay is a new strategy for screening for CeD in clinical practice.

DOI: 10.1007/s12664-017-0803-z
PMID: 29270909 [Indexed for MEDLINE]

157: Verma R, Anand KS. Botulinum toxin: a novel therapy for clozapine-induced sialorrhoea. Psychopharmacology (Berl). 2018 Jan;235(1):369-371. doi: 10.1007/s00213-017-4795-2. Epub 2017 Dec 1. PubMed PMID: 29196826.

158: Verma S, Das P, Kumar VL. Chemoprevention by artesunate in a preclinical model of colorectal cancer involves down regulation of Î²-catenin, suppression of angiogenesis, cellular proliferation and induction of apoptosis. Chem Biol Interact. 2017 Dec 25;278:84-91. doi: 10.1016/j.cbi.2017.10.011. Epub 2017 Oct 12. PubMed PMID: 29031619.

Use of anti-inflammatory drugs is well known to decrease the risk of colorectal cancer, one of the most common causes of cancer related mortality. In view of anti-inflammatory property of artesunate reported in various experimental models, the present study was carried out to evaluate its efficacy in rat model where colon carcinogenesis was induced by 1, 2 dimethylhydrazine (DMH). A time course study revealed that two injections of DMH given at an interval of one week resulted in appearance of multiple plaque lesions and aberrant crypt foci in the colon with a peak effect occurring at the end of 8 weeks. An efficacy study carried out with daily oral administration of artesunate (50 and 150 mg/kg) and aspirin (60 mg/kg) showed a marked reduction in pre-neoplastic changes with a significant decrease in the number of aberrant crypt foci, crypt multiplicity and restoration of histoarchitecture. Both the drugs down regulated β-catenin signaling, reduced the levels of angiogenic markers like VEGF, MMP-9 and inhibited cellular proliferation. The anti-cancer effect of these drugs was concomitant with the pro-apoptotic effect as revealed by increased DNA fragmentation, TUNEL positivity and Bax/Bcl2 immunoreactivity. This is the first study to evaluate the inhibitory effect of artesunate on pre-neoplastic changes in colon where its chemopreventive effect was found to be comparable to that of aspirin. Our study strengthens the previous findings and shows that it has a preventive and therapeutic potential in the treatment of colon cancer.

DOI: 10.1016/j.cbi.2017.10.011
PMID: 29031619 [Indexed for MEDLINE]

159: Vibhuti, Khan R, Sharma A, Jain S, Mohanty S, Prasad K. Intra-arterial transplantation of human bone marrow mesenchymal stem cells (hBMMSCs) improves behavioral deficits and alters gene expression in rodent stroke model. J Neurochem. 2017 Dec;143(6):722-735. doi: 10.1111/jnc.14241. Epub 2017 Dec 4. Retraction in: J Neurochem. 2018 Jun;145(6):516. PubMed PMID: 29049855.

Stroke is a multi-factorial polygenic disease and is a major cause of death and adult disability. Administration of bone marrow stem cells protects ischemic rat brain by facilitating recovery of neurological functions. But the molecular mechanism of stem cells action and their effect on gene expression is not well explored. In this study, we have transplanted 1 × 106 human bone marrow mesenchymal stem cells (hBMMSCs) in middle cerebral artery occluded (MCAo) adult male Wistar rats through intracarotid artery route at 24 h after surgery. Motor behavioral tests (rotarod and open field) were performed to assess the changes in motor functions at day 0 and day1, 4, 8 and 14. The expression of studied genes at mRNA and protein level was quantified by using Q-PCR and western blotting, respectively. Further, we have assessed the methylation pattern of promoter of these genes by using methylation-specific PCR. Data were analyzed statistically and correlated. A significant improvement in behavioral deficits was observed in stem cells treated group after 14th day post stroke. Significantly ($p < 0.05$) increased mRNA and protein levels of brain derived neurotrophic factor and ANP genes in hBMMSCs treated group along with decrease in methylation level at their promoter was observed. On the other hand, significantly decreased mRNA and protein level of TSP1 and WNK1 in hBMMSCs treated group was observed. In conclusion, hBMMSCs administration significantly improves the behavioral deficits by improving motor and locomotor coordination. The promoter of TSP1 and WNK1 genes was found to be hyper-methylated in hBMMSCs group resulting in their decreased expression while the promoter of ANP and brain derived neurotrophic factor was found to be hypo-methylated. This study might shed a light on how hBMMSCs affect the gene expression by modulating methylation status.

DOI: 10.1111/jnc.14241
PMID: 29049855 [Indexed for MEDLINE]

160: Vikram NK. Cardiovascular and Metabolic Complications - Diagnosis and Management in Obese Children. Indian J Pediatr. 2018 Jul;85(7):535-545. doi: 10.1007/s12098-017-2504-0. Epub 2017 Dec 8. Review. PubMed PMID: 29218646.

The world at present is facing a burden of rising prevalence of obesity in children and adolescents. The developing countries are particularly facing the dual burden on under-nutrition and obesity. This is associated with appearance and clustering of cardiometabolic abnormalities at an early age with development of chronic complications early and possible decrease in life span of these children and adolescents. In adults this clustering has been termed as 'metabolic syndrome' with definitions that can be used universally. However, in children and adolescents there is no consensus on a uniform definition of metabolic syndrome that can be applicable across the age groups and various ethnicities. Further, as childhood is a period of growth and development, changes in body composition and insulin sensitivity that occur with puberty may influence the thresholds of components used to define metabolic syndrome. Children of South Asian ethnicity appear to be more predisposed to develop abnormalities of metabolic syndrome, possible due to their adverse body fat patterning and genetic influences. The definition of pediatric metabolic syndrome proposed by International Diabetes Federation is useful across different ethnicities. Presence of at least one

component of metabolic syndrome should lead to detailed screening for other components and complications. A multimodality approach including therapeutic lifestyle changes targeted at the individual, family and community is essential for management. Pharmacotherapy for individual components may be required if initial management strategies fail to achieve the goals.

DOI: 10.1007/s12098-017-2504-0
PMID: 29218646

161: Yadav S, Sahay P, Maharana PK, Titiyal JS, Vajpayee RB, Sharma N. Comparison of visual performance and after cataract formation between two monofocal aspheric intraocular lenses following phacoemulsification for senile cataract: A randomized controlled study. Indian J Ophthalmol. 2017 Dec;65(12):1445-1449. doi: 10.4103/ijo.IJO_757_17. PubMed PMID: 29208832; PubMed Central PMCID: PMC5742980.

PURPOSE: Monofocal aspheric intraocular lenses (IOLs) provide better visual outcome compared to other available IOLs following cataract surgery. However, the imported IOLs are expensive and are not affordable by all subset of patients in low- to middle-income countries like India. The aim of this study is to compare the safety and efficacy of a relatively low cost indigenous IOL (Acriol EC) with an imported aspheric IOL (AcrySof IQ).
METHODS: A randomized controlled trial was conducted at a tertiary care centre. Two hundred and five eyes of 137 patients >45 years of age with uncomplicated age-related cataract were recruited. All cases underwent standard phacoemulsification and randomly assigned to one of the IOL implantations (Group I: AcrySof IOL; Group II: Acriol EC IOL). Primary outcome measure was best-corrected visual acuity (BCVA). Secondary outcomes included visual function (VF) score, spherical equivalent, contrast sensitivity, optical aberrations, and posterior capsular opacification. Independent t-test to compare two means; Mann-Whitney test; Pearson's Chi-square test, and McNemar's test were used for analyzing the nonparametric data such as incidence of posterior capsule opacification.
RESULTS: There was no significant difference in the mean postoperative BCVA at 1, 3, 6, and 12 months in either group ($P > 0.05$). The contrast sensitivity, wavefront aberrations, VF score, and posterior capsular opacification were comparable between the groups except for higher-order aberrations and spherical aberration, which were higher in Group II.
CONCLUSIONS: Acriol EC IOL provides visual outcomes comparable to other commonly used aspheric IOLs with comparable safety and efficacy at an affordable cost.

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