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List of publications of AIIMS, New Delhi
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1: Agarwal D, Kumar A, Sundar D. Commentary: Medico legal aspects in ophthalmology in India. *Indian J Ophthalmol*. 2019 Oct;67(10):1526-1527. doi: 10.4103/ijo.IJO_1510_19. PubMed PMID: 31546473; PubMed Central PMCID: PMC6786191.

2: Aggarwal K, Kumar R, Bhardwaj N, Jat B, Kumar R. Isolated Laryngeal Leishmaniasis: A Diagnostic Dilemma. *Indian J Otolaryngol Head Neck Surg*. 2019 Oct;71(Suppl 1):872-875. doi: 10.1007/s12070-019-01639-5. Epub 2019 Jun 1. PubMed PMID: 31742085; PubMed Central PMCID: PMC6848466.

Isolated laryngeal Leishmaniasis is a rare entity in the Indian subcontinent. We describe a case of a 45 year old male with hoarseness and noisy breathing. Patient's initial histological and serological workup was inconclusive. Final biopsy findings (suggestive of *Leishmania donovani*), positive rK-39 serology and his native place being Bihar (endemic for Leishmaniasis) led us to the diagnosis. He was treated with high dose liposomal Amphotericin B to which he responded well. This case report highlights the importance of remaining aware of rare infectious causes of laryngitis. Timely diagnosis and intervention are crucial.

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DOI: 10.1007/s12070-019-01639-5
PMCID: PMC6848466 [Available on 2020-10-01]
PMID: 31742085

3: Anand S, Jain V, Agarwala S, Sachdeva S, Kothari SS. Thoracoscopic Left Cardiac Sympathetic Denervation in a Child with Refractory Long QT Syndrome. *J Indian Assoc Pediatr Surg*. 2019 Oct-Dec;24(4):297-299. doi: 10.4103/jiaps.JIAPS_144_18. PubMed PMID: 31571765; PubMed Central PMCID: PMC6752074.

Long QT syndrome is a cardiac disorder which presents with recurrent syncopal attacks and has risk of sudden cardiac death. A 5-year-old boy presented to us with this syndrome. The child was symptomatic despite medical management and was successfully managed with cardiac denervation. The current report highlights the efficacy and safety of the use of video-assisted thoracoscopic surgery for this procedure.

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DOI: 10.4103/jiaps.JIAPS_144_18
PMCID: PMC6752074
PMID: 31571765

4: Anand V, Jauhari P. Autism, Epilepsy and Intellectual Disability: A Clinical Conundrum. *Indian J Pediatr*. 2019 Oct;86(10):877-878. doi: 10.1007/s12098-019-03045-9. Epub 2019 Jul 31. PubMed PMID: 31367974.

5: Anjali VR, Pandey R, Srivastava A, Rajeshwari M, Pandey D, Sharma MC. Sequential EGFR mutation and ALK rearrangement in adenocarcinoma lung, with rare metastasis to bilateral breast, ovary and endometrium. *Respir Med Case Rep*. 2019 Oct 19;28:100954. doi: 10.1016/j.rmcr.2019.100954. eCollection 2019. PubMed PMID: 31720204; PubMed Central PMCID: PMC6838794.

With the advent of targeted therapies there was a paradigm shift in the treatment

of metastatic adenocarcinoma of lung. Immuno-histopathology and molecular subtyping in metastatic adenocarcinoma lung have enabled personalized treatment for each patient. Oncogenic driver mutations in non-small cell lung cancer are commonly EGFR (Epidermal Growth Factor Receptor) gene mutation and ALK (Anaplastic Lymphoma Kinase) gene rearrangement, which are mutually exclusive. Almost 60-64% patients have oncogenic mutation, which are mutually exclusive. Here, we present a case with EGFR mutation and ALK gene rearrangement which was expressed sequentially and with metastasis to rarest sites bilateral breast, ovaries and endometrium. Even though presented with upfront metastatic disease, patient was treated with multiple lines of targeted agents, by which patient survived for 5 years with good quality of life.

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PMCID: PMC6838794

PMID: 31720204

6: Arora C, Malhotra A, Ranjan P, Vikram NK, Shalimar, Singh N, Dwivedi SN. Lifestyle Intervention Framework for Obese Patients with Non-alcoholic Fatty Liver Disease - a Tool for Health Professionals in Resource Constraint Settings. *Cureus*. 2019 Oct 25;11(10):e5999. doi: 10.7759/cureus.5999. PubMed PMID: 31808444; PubMed Central PMCID: PMC6876900.

Purpose Non-alcoholic fatty liver disease (NAFLD), is recognized as a health care burden worldwide. Lifestyle modification remains the first line of treatment. However, the real challenge is ensuring the patient's adherence to lifestyle modification measures, especially in hospitals with resource-limited settings. Methods We developed a six-month-long, dietitian-led, hospital-based, lifestyle intervention framework for obese NAFLD patients and evaluated its content. Literature review, interviews, and discussions with 10 health experts (general physicians, dietitians/nutritionists, gastroenterologists, and a clinical psychologist) and 45 NAFLD patients (35 in Phase I and 10 in Phase II) in a tertiary hospital of India were carried out. Results The lifestyle intervention framework has unique features, such as an intensive nature to ensure adherence, a comprehensive educational format with clear guidelines, the customization of a prescription as per individual patient requirements, and a holistic approach to inculcate self-monitoring and behavioral change in NAFLD patients. Conclusion Health professionals worldwide can use this lifestyle intervention framework to develop counseling interventions for better adherence among obese NAFLD patients.

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DOI: 10.7759/cureus.5999

PMCID: PMC6876900

PMID: 31808444

7: Arora S, Damle NA, Meel R, Lata K, Tandon N, Sharma S, Bal C. Graves' Ophthalmopathy on (68)Ga-DOTANOC Positron Emission Tomography/Computed Tomography. *Indian J Nucl Med*. 2019 Oct-Dec;34(4):338-340. doi: 10.4103/ijnm.IJNM_147_19. PubMed PMID: 31579195; PubMed Central PMCID: PMC6771202.

Graves' ophthalmopathy (GO) involves autoimmune activation of fibroblasts, resulting in chronic inflammatory reaction. Somatostatin receptors are expressed in the cells associated with chronic inflammation. We hereby present patients with active GO, with delayed response to the standard treatment regimen, in whom 68Ga-DOTANOC positron emission tomography/computed tomography (PET/CT) was

planned to evaluate the orbital inflammation. ⁶⁸Ga-DOTANOC PET/CT shows no physiological orbital muscle uptake. It can provide information which may possibly of utility in response assessment and also screening patients who fail to respond to conventional treatment, for newer therapies such as long-acting somatostatin analogs.

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DOI: 10.4103/ijnm.IJNM_147_19

PMCID: PMC6771202

PMID: 31579195

8: Arora S, Damle NA, Meel R, Sharma S, Sen S, Bal C, Lata K, Prakash S, Yadav D, Angamuthu M. Orbital IgG4 Disease: Imaging Findings on ⁶⁸Ga-DOTANOC PET/CT. *Nucl Med Mol Imaging*. 2019 Dec;53(6):432-435. doi: 10.1007/s13139-019-00611-z. Epub 2019 Oct 25. PubMed PMID: 31867079; PubMed Central PMCID: PMC6898689.

Immunoglobulin G4 (IgG4)-related diseases are a spectrum of systemic inflammatory conditions of unknown etiology, which are characterized by infiltration of tissues by IgG4 plasma cells and sclerosing inflammation (Cheuk and Chan *Adv Anat Pathol* 17:303-32, 2010). Although this condition was initially described in relation to autoimmune pancreatitis, now it has been reported in almost every organ system of body (Zen and Nakanuma *Am J Surg Pathol* 34:1812-9, 2010, Masaki et al. *Ann Rheuma Dis* 68:1310-5, 2009). Orbital involvement by IgG4 disease can involve extraocular muscles (EOM), lacrimal glands, conjunctiva, eyelids, infraorbital nerve, orbital fat, and nasolacrimal system (McNab and McKelvie. *Ophthal Plast Reconstr Surg* 31:167-78, 2015, Katsura et al. *Neuroradiology* 54:873-82, 2012). The basis of using ⁶⁸Ga-DOTANOC PET/CT in IgG4 orbital disease is the known expression of somatostatin receptors in chronic inflammatory cells (Cuccurullo et al. *Indian J Radiol Imaging* 27:509-16, 2017) and also avidity shown previously in other IgG4-related diseases (Cheng et al. *Clin Nucl Med* 43:773-6, 2018).

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PMID: 31867079

9: Asif MI, Nayak S, Pujari A, Sharma N, Agarwal T. Double arcus cornealis. *Indian J Ophthalmol*. 2019 Oct;67(10):1723. doi: 10.4103/ijo.IJO_402_19. PubMed PMID: 31546532; PubMed Central PMCID: PMC6786162.

10: Babu BV, Viswanathan K, Ramesh A, Gupta A, Tiwari S, Palatty BU, Varghese S, Sharma Y. An Interventional Study on Comprehensive Emergency Care and Trauma Registry for Road Traffic Injuries in India: A Protocol. *Adv J Emerg Med*. 2019 Aug 5;3(4):e50. doi: 10.22114/ajem.v0i0.232. eCollection 2019 Fall. PubMed PMID: 31633105; PubMed Central PMCID: PMC6789063.

Road traffic injuries (RTIs) stands as one of the leading causes of mortality and morbidity across the globe. Effective injury surveillance systems and pre-hospital and in-hospital interventions set up in developing countries have shown promising results in controlling the problem. This study aimed to standardise and evaluate an evidence-based intervention for safety, efficacy and quality of post-crash pre-hospital and in-hospital trauma care services to improve the outcome in RTI victims. In addition, it establishes the android-based trauma registry for effective RTI surveillance. This multi-centric, prospective,

observational study is commissioned by the Indian Council of Medical Research (ICMR) as a National Task Force Project. This study is being conducted in five sites, viz., Anand, Bengaluru, Delhi, Lucknow and Thrissur located across India. Each centre will have a level I, two level II and three level III trauma hospitals. The study will be carried out in four phases namely: i) preparatory phase, ii) trauma registry establishment and pre-intervention data collection, iii) intervention and iv) impact evaluation. The preparatory phase, which lasts for four months includes the situational analysis pertaining to managing RTIs. Trauma registry will be initiated from the fifth month. Pre-intervention data will be collected for six months. The intervention will be conducted for six months in the form of prehospital notification, training for trauma care providers and trauma care quality improvement. Post-intervention data collection will continue for 12 months and the impact of the intervention will be assessed. The primary outcome measure will be early preventable mortality, defined as death at 24 hours after admission for patients with a calculated probability of survival >50% based on their injury severity score.

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PMCID: PMC6789063

PMID: 31633105

11: Baidya Kayal E, Kandasamy D, Khare K, Bakhshi S, Sharma R, Mehndiratta A. Intravoxel incoherent motion (IVIM) for response assessment in patients with osteosarcoma undergoing neoadjuvant chemotherapy. *Eur J Radiol.* 2019 Oct;119:108635. doi: 10.1016/j.ejrad.2019.08.004. Epub 2019 Aug 10. PubMed PMID: 31445487.

PURPOSE: To explore the role of quantitative Intravoxel incoherent motion (IVIM) parameters and their histogram analysis in characterizing changes in Osteosarcoma receiving neoadjuvant chemotherapy (NACT) and evaluating therapeutic response.

METHODS: Forty patients (N=40; Male:Female=30:10; Age=17.7±5.9years; Metastatic:localized=17:23) with histologically confirmed Osteosarcoma treated with 3-cycles of NACT were analyzed prospectively. All patients underwent Diffusion weighted imaging (DWI) with 11 b-values (0-800s/mm²) using 1.5T MRI scanner at pre-treatment (t₀), after 1-cycle (t₁) and after 3-cycles (t₂) of NACT. Non-invasive response evaluation of NACT was performed using RECIST1.1 criteria. Apparent-diffusion-coefficient (ADC) and IVIM parameters - Diffusion-coefficient (D), Perfusion-coefficient (D*) & Perfusion-fraction (f) and their relative percentage changes from time-point t₀-t₁ (Δ₂) and t₀-t₂ (Δ₂) were evaluated and histogram analysis was performed at three time-points and compared with respect to RECIST1.1 scores.

RESULTS: Using RECIST1.1 criteria, 11 (27.5%), 21 (52.5%) and 8 (20%) patients were in Partial-responder (PR), Stable-disease (SD) and Progressive-disease (PD) groups respectively. Pre-NACT (t₀), average ADC, D, D* & f in tumor volume were 1.36±0.33×10⁻³mm²/s, 1.3±0.3×10⁻³mm²/s, 28.44±10.34×10⁻³mm²/s & 13.95±2.83% respectively. Using ANOVA test, during NACT (t₁, t₂), D*-variance (p=0.038, 0.003) and f-skewness (p=0.03, 0.03) and at t₂, D*-entropy (p=0.001) and f-entropy (p=0.002) and their Δ₂ changes (p=0.001, 0.003) were statistically significant among response groups. At t₁, D*-variance and f-skewness jointly showed AUC=0.77 & 0.74 in classifying PR (Sensitivity=73%; Specificity=70%) and SD (Sensitivity=74; Specificity=75%) groups respectively in patient cohort. Δ₁ & Δ₂ changes of D*-mean, D*-variance, D*-entropy and f-entropy correlated well (0.5-0.6) with tumor-diameter and tumor-volume changes.

CONCLUSIONS: Quantitative IVIM parameters, especially D* & f and their histogram

analysis were informative and can be used as noninvasive surrogate markers for early response assessment during the course of NACT in Osteosarcoma.

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PMID: 31445487 [Indexed for MEDLINE]

12: Bajpai M, Goel P, Gupta A, Varshney A. Sharp Foreign Bodies of the Aero-Digestive Tract: Endoscopic Removal by the 'Kangaroo' Technique. *Indian J Otolaryngol Head Neck Surg.* 2019 Oct;71(Suppl 1):933-938. doi: 10.1007/s12070-019-01598-x. Epub 2019 Feb 7. PubMed PMID: 31742097; PubMed Central PMCID: PMC6848357.

Removal of sharp foreign bodies in the aero-digestive tract may inflict iatrogenic damage to the esophagus, trachea or other vital structures in case of impalement. We describe the 'Kangaroo' technique for safe and effective removal of sharp objects from the upper aero-digestive tracts. Index Case 1: 1-year old boy presented to us with an open (un)safety-pin lodged in the upper esophagus. The technique of removal of the pin by the Kangaroo technique, along-with the mechanics of en-pouching the (un)safety-pin has been described. Index Case 2: 8 years old boy presented with accidental aspiration of a razor blade. The removal of the blade from his trachea was executed by the Kangaroo technique. The Kangaroo technique is described for safe endoscopic extraction of sharp foreign body from the aero-digestive tract while protecting the surrounding tissues, to maintain control of the object during extraction and to avoid causing iatrogenic damage by enclosing the foreign body in a 'kangaroo pouch'. The advantages and limitations of the technique have been discussed. The Kangaroo technique is safe, effective and reproducible way to effect removal of sharp object from the aerodigestive tract while preventing iatrogenic injury to the surrounding organs.

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PMCID: PMC6848357 [Available on 2020-10-01]

PMID: 31742097

13: Bajpai V, Gupta E, Mitra LG, Kumar H, Maiwall R, Soni KD, Gupta A. Spectrum of respiratory viral infections in liver disease patients with cirrhosis admitted in critical care unit. *J Lab Physicians.* 2019 Oct-Dec;11(4):356-360. doi: 10.4103/JLP.JLP_6_19. PubMed PMID: 31929704; PubMed Central PMCID: PMC6943874.

BACKGROUND: Clinical significance of respiratory viruses (RVs) as an etiology of pneumonia in liver disease patients with cirrhosis is usually underestimated. Therefore, the aim of this study was to evaluate the spectrum of RVs in cirrhotic patients with pneumonia admitted in critical care units (CCUs) and its impact on the clinical outcome of cirrhotic patients.

MATERIAL AND METHOD: A prospective study was conducted in a tertiary care CCU, and consecutive cirrhotic patients with pneumonia were included. Bronchoalveolar lavage or throat swab/nasal swab was collected in viral transport medium for analysis of RVs by multiplex real-time polymerase chain reaction. A total of 135 cirrhotic patients were included, viral and bacterial etiology of pneumonia was identified, and analysis was done with the clinical outcome.

RESULTS: Overall, RVs were detected in 30 (22.2%) cirrhotic patients and viral-bacterial coinfection in 16 (11.8%) cirrhotic patients. The most common virus detected was rhinovirus in 9 (30%) patients. Mortality in cirrhotic patients with RV infection was significantly higher in comparison to cirrhotic patients with no RV infection (25 [83.3%] and 11 [12.3%], respectively, $P <$

0.001).

CONCLUSION: Respiratory viruses in cirrhotic patients with pneumonia are associated with poor clinical outcome.

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DOI: 10.4103/JLP.JLP_6_19

PMCID: PMC6943874

PMID: 31929704

14: Bali S, Tomar A, Nayak PK, Belwal R. Goitre Is No Longer Prevalent and Urinary Iodine Excretion Is above Normal among School Going Children in Jabalpur, India: Is This Major Health Problem Already Solved? *J Trop Pediatr*. 2019 Oct 1;65(5):457-462. doi: 10.1093/tropej/fmy076. PubMed PMID: 30690623.

Iodine deficiency disorder (IDD) is a major public health problem in India. We conducted this study to assess goitre prevalence, urinary iodine excretion (UIE) among school children and to determine iodine concentration in salt samples at consumer level, in Jabalpur district. We adopted "30 cluster" sampling, recommended by joint WHO/UNICEF/ICCIDD Consultation. A total of 2700 children were examined and 540 salt samples and 267 urine samples were collected. Also 150 households and 30 shopkeepers were interviewed for awareness about salt iodization. Total goitre prevalence rate was 2.2% with median UIE level as 218 µg/l and 19.1% of population had adequate iodine intake. About 90.6% of studied population consumed adequately iodized salt. Jabalpur is now no more an endemic area for goitre. The district has achieved the target of universal salt iodization (USI) but now proceeding towards toxicity. Hence the concern is the need of sustainability of the policy of USI.

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DOI: 10.1093/tropej/fmy076

PMID: 30690623

15: Bansal K, Kharbanda OP, Sharma JB, Sood M, Priya H, Kriplani A. Effectiveness of an integrated perinatal oral health assessment and promotion program on the knowledge in Indian pregnant women. *J Indian Soc Pedod Prev Dent*. 2019 Oct-Dec;37(4):383-391. doi: 10.4103/JISPPD.JISPPD_201_19. PubMed PMID: 31710014.

Background: Oral health during pregnancy plays a crucial role in the overall health and well-being of pregnant women. Evidence shows that most young children acquire cariogenic organisms from their mothers. Poor maternal knowledge about oral diseases combined with inappropriate feeding can lead to severe caries among young children. The aim of study was to assess the oral health status of pregnant women and to evaluate the gain in their knowledge after educational session in an antenatal setting.

Materials and Methods: It is a pre- and post-intervention study carried out on the pregnant women (n = 198) attending an antenatal clinic in a tertiary care hospital. A specially designed semi-structured 14-point questionnaire was used to assess the pre- and post-knowledge and attitude to the oral health. Each participant was educated for self and infant oral care with the help of a specially prepared colored printed booklet. Kruskal-Wallis test was used to explore the associations between the age, education and socioeconomic class and knowledge; Wilcoxon signed-rank test was used to compare pre- and post-knowledge score.

Results: Median preoral health knowledge-attitude score was found to be 4 (0-8) and was found to be associated with the level of education (P = 0.014) and

socioeconomic class (0.019). There was a significant improvement in the median postknowledge score to 7 (2-10) ($P < 0.001$) following oral health educational session in all categories.

Conclusions: An integrated preventive oral health checkup and educational program to pregnant women can benefit the dental health of the women and children.

Prenatal care workers can be involved to disseminate the oral health awareness to pregnant women during antenatal visits.

DOI: 10.4103/JISPPD.JISPPD_201_19

PMID: 31710014 [Indexed for MEDLINE]

16: Bansal R, Parakh N, Gupta A, Juneja R, Naik N, Yadav R, Sharma G, Roy A, Verma SK, Bahl VK. Incidence and predictors of pacemaker-induced cardiomyopathy with comparison between apical and non-apical right ventricular pacing sites. *J Interv Card Electrophysiol*. 2019 Oct;56(1):63-70. doi: 10.1007/s10840-019-00602-2. Epub 2019 Jul 30. PubMed PMID: 31363943.

BACKGROUND: Asynchronous activation of left ventricle (LV) due to chronic right ventricular (RV) pacing has been known to predispose to LV dysfunction. The predictors of LV dysfunction remain to be prospectively studied. This study was designed to follow up patients with RV pacing to look for development of pacing-induced cardiomyopathy (PiCMP), identify its predictors and draw comparison between apical vs non-apical RV pacing sites.

METHODS: Three hundred sixty-three patients undergoing dual-chamber and single-chamber ventricular implants were enrolled and followed up. Baseline clinical parameters; paced QRS duration and axis; RV lead position by fluoroscopy; LV ejection fraction (LVEF) by Simpson's method on transthoracic echocardiography (TTE); intraventricular dyssynchrony (septal-posterior wall contraction delay) and interventricular dyssynchrony (aortopulmonary ejection delay) on TTE were recorded. The patients were followed up at 6-12 monthly interval with estimation of LVEF and pacemaker interrogation at each visit. Pacemaker-induced cardiomyopathy (PiCMP) was defined as a fall in ejection fraction of 10% as compared to the baseline LVEF. Patients developing PiCMP were compared to other patients to identify predictors.

RESULTS: The mean age of study population was 59.8 years, 68.3% being males. Fifty-one percent and 49% patients underwent VVIR and DDDR pacemaker implantation, respectively. After attrition, 254 patients were analysed. PiCMP developed in 35 patients (13.8%) over a mean follow-up of 14.5 months. After multivariate analysis, burden of ventricular pacing $>60\%$ [HR 4.26, $p=0.004$] and interventricular dyssynchrony (aortopulmonary ejection delay >40 msec) [HR 3.15, $p=0.002$] were identified as predictors for PiCMP in patients undergoing chronic RV pacing. There was no effect of RV pacing site (apical vs non-apical) on incidence of PiCMP [HR 1.44, $p=0.353$].

CONCLUSIONS: Incidence of PiCMP with RV pacing was found to be 13.8% over a mean follow-up of 14.5 months. Burden of right ventricular pacing and interventricular dyssynchrony were identified as the most important predictors for the development of PiCMP. Non-apical RV pacing site did not offer any benefit in terms of incidence of PiCMP over apical lead position.

DOI: 10.1007/s10840-019-00602-2

PMID: 31363943

17: Basu A, Basu D, Chattopadhyay A, Sanyal R, Rahman M, Goswami RP. Pediatric case of Graham Little Piccardi Lassueur syndrome - A rare entity. *Drug Discov Ther*. 2019 Nov 14;13(5):294-296. doi: 10.5582/ddt.2019.01055. Epub 2019 Oct 27. PubMed PMID: 31656251.

Graham Little Piccardi Lassueur syndrome (GLPLS) is a rare dermatosis

characterized by patchy cicatricial alopecia of scalp, rapidly developing keratosis pilaris like follicular papules over trunk and extremities, and noncicatricial loss of axillary and pubic hair. This syndrome which is mostly seen in middle aged post-menopausal females (between ages 30-70) has rarely ever been described in the pediatric age group. We report a case of a 15 year old girl presenting to us with this rare syndrome.

DOI: 10.5582/ddt.2019.01055

PMID: 31656251

18: Behera C, Sikary AK, Rautji R, Gupta SK. Electrocution deaths reported in South Delhi, India: A retrospective analysis of 16 years of data from 2002 to 2017. *Med Sci Law*. 2019 Oct;59(4):240-246. doi: 10.1177/0025802419860288. Epub 2019 Jun 29. PubMed PMID: 31256743.

19: Benson R, Pathy S, Kumar L, Mathur S, Dadhwal V, Mohanti BK. Locally advanced cervical cancer - neoadjuvant chemotherapy followed by concurrent chemoradiation and targeted therapy as maintenance: A phase II study. *J Cancer Res Ther*. 2019 Oct-Dec;15(6):1359-1364. doi: 10.4103/jcrt.JCRT_39_18. PubMed PMID: 31898673.

Aim: The survival in locally advanced cervical cancer remains low. We evaluated the role of neoadjuvant chemotherapy (NACT), chemoradiotherapy (CRT), followed by gefitinib maintenance in locally advanced cervical cancer.

Materials and Methods: Twenty-five patients with locally advanced carcinoma cervix were enrolled between July 2012 and May 2013. Patients received 6 weekly doses of NACT Paclitaxel (60 mg/m²) and carboplatin (AUC 2), followed by CRT and brachytherapy. The analysis of epidermal growth factor receptor (EGFR) expression was carried out by immunohistochemistry. Gefitinib (250 mg daily) was given as maintenance therapy for 1 year after completion of chemoradiation. Comparison of EGFR expression and survival outcomes was done.

Results: Twenty-four of 25 patients completed the neoadjuvant chemotherapy and concurrent chemoradiotherapy. Post-CRT, all patients were started on gefitinib maintenance, and twenty patients completed the intended 1 year of gefitinib maintenance. Nineteen (76%) patients had a radiological complete response to NACT. EGFR was moderately or strongly expressed in 86.3% of the patients. The 3-year overall survival was 69.8%, and 3-year progression-free survival was 51.4%. Expression of EGFR was not found to be a significant factor affecting overall survival or progression-free survival.

Conclusions: Weekly neoadjuvant chemotherapy is associated with a good response rate in locally advanced cervical cancer. Neoadjuvant chemotherapy, chemoradiation, followed by gefitinib maintenance gives good survival outcome in patients with locally advanced cervical cancer.

DOI: 10.4103/jcrt.JCRT_39_18

PMID: 31898673

20: Bharate V, Kumar Y, Koli D, Pruthi G, Jain V. Effect of different abutment materials (zirconia or titanium) on the crestal bone height in 1 year. *J Oral Biol Craniofac Res*. 2020 Jan-Mar;10(1):372-374. doi: 10.1016/j.jobcr.2019.10.001. Epub 2019 Oct 24. PubMed PMID: 31737476; PubMed Central PMCID: PMC6849354.

21: Bhardwaj N, Yadav R, Sampath Kumar V, Khan SA. Melanotic neuroectodermal tumour of infancy presenting as a lytic lesion in femur: a rare tumour at a rare site with an unusual behaviour. *BMJ Case Rep*. 2019 Oct 5;12(10). pii: e231959. doi: 10.1136/bcr-2019-231959. PubMed PMID: 31586962.

Melanotic neuroectodermal tumour of infancy (MNTI) is an uncommon tumour, predominantly occurring in head and neck, mostly maxilla, but also in skull and mandible. Although a benign lesion, it is known to recur in 15%-27% of cases, and rarely, may undergo malignant transformation. We present a case of a 5-month-old female patient, who presented with a gradually progressive swelling in the right thigh. On imaging, an osteolytic lesion was seen, involving the metadiaphysis of shaft of right femur. A biopsy was performed, on which diagnosis of MNTI was made. MNTI is rarely seen in extremities. To the best of our knowledge, only six cases have been reported in femur, the present case being the seventh. The tumour showed spontaneous regression on follow-up in our patient, which has rarely been described. A knowledge of characteristic morphology and immunohistochemistry is the key to differentiate it from other tumours.

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DOI: 10.1136/bcr-2019-231959

PMID: 31586962

22: Bhaskaran K, Shashni AK, Sharma P, Saxena R, Phuljhele S. Combined resection-recession in true divergence excess sensory exotropia. *J AAPOS*. 2019 Oct;23(5):258.e1-258.e4. doi: 10.1016/j.jaapos.2019.06.009. Epub 2019 Sep 16. PubMed PMID: 31536819.

PURPOSE: To assess the effect of combined resection and recession on the same lateral rectus muscle in patients with true divergence excess sensory exotropia.

METHODS: Patients were divided into two groups. One group of patients underwent combined resection-recession of the lateral rectus muscle in one eye (LR group); the other group, with exodeviation of $>40\Delta$ for distance underwent additional ipsilateral medial rectus resection (LR + MR group). Postoperative measurements were taken at 1 week, 1 month, and 3 months.

RESULTS: Eleven patients were included in the study (mean age, 23.5 ± 6.7 years): 7 in the LR group and 4 in the LR + MR group. For the LR group, mean preoperative deviation was $35.7\Delta \pm 3.5\Delta$ at distance and $16.3\Delta \pm 3.9\Delta$ at near. The mean near-distance disparity (NDD) was $11.4\Delta \pm 2.7\Delta$. The mean lateral rectus recession was 8.6 ± 1.1 mm; the mean resection, 4.3 ± 0.5 mm. At 3 months, mean deviation at distance was $8.3\Delta \pm 2.1\Delta$; at near, $3.1\Delta \pm 1.6\Delta$ ($P = 0.01$). The NDD was $5.7\Delta \pm 2.7\Delta$ ($P = 0.01$). For the LR + MR group, mean preoperative deviations at distance was $65.0\Delta \pm 12.9\Delta$; at near, $35.0\Delta \pm 12.2\Delta$. The mean NDD was $30.0\Delta \pm 4.0\Delta$. Mean lateral rectus recession was 9.5 ± 1.8 mm; the mean resection, 4.8 ± 0.8 mm. The mean medial rectus resection was 5.5 ± 0.6 mm. At 3 months, mean deviation at distance was $8.3\Delta \pm 2.1\Delta$; at near, $3.1\Delta \pm 1.6\Delta$ ($P = 0.06$). The NDD was $5.7\Delta \pm 2.7\Delta$ ($P = 0.06$).

CONCLUSIONS: In our study combined resection and recession of the same lateral rectus muscle in patients with divergence excess sensory exotropia significantly reduced the NDD, with no adverse outcomes.

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BACKGROUND AND OBJECTIVES: Ischemic stroke (IS) and coronary artery disease (CAD) share common risk factors and one may be the harbinger of the other. We aimed to study prevalence of symptomatic and asymptomatic CAD in a cohort of consecutive patients with IS and assess its relationship with intracranial and extracranial large artery cerebrovascular disease (LAD).

METHODS: All consecutive eligible IS and Transient Ischemic Attack (TIA) patients were recruited into the study. Both clinically suspected and asymptomatic patients (N=259) underwent myocardial Stress-rest Gated Technetium-99m (Tc99m) MIBI Myocardial Perfusion SPECT scan performed on a dual head SPECT-CT to estimate evidence of myocardial ischemia.

RESULTS: Three hundred patients completed the study. Forty one patients were previously diagnosed cases of definitive CAD. Twelve patients were clinically suspected to have CAD and 247 patients were asymptomatic. Among these, 12 patients (4.81%) had a positive SPECT. The overall prevalence of CAD was 17.67% (n=53). Presence of diabetes was an independent predictor of CAD (OR 1.98, 95% CI 1.07-3.67. P .02). No significant association was found between the presence of LAD and CAD in all subgroup comparisons. However, there was a suggestion of higher LAD among patients with known CAD compared with others.

CONCLUSIONS: CAD is prevalent in patients with ischemic stroke. No definitive relationship was found between CAD and intracranial or extracranial LAD.

Population based stratification tools are needed to further assess the need to detect subclinical CAD in patients with stroke.

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DOI: 10.1016/j.jstrokecerebrovasdis.2019.104400
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The Indian Society of Gastroenterology developed this evidence-based practice guideline for management of gastroesophageal reflux disease (GERD) in adults. A modified Delphi process was used to develop this consensus containing 58 statements, which were generated by electronic voting iteration as well as face-to-face meeting and review of the supporting literature primarily from India. These statements include 10 on epidemiology, 8 on clinical presentation, 10 on investigations, 23 on treatment (including medical, endoscopic, and surgical modalities), and 7 on complications of GERD. When the proportion of those who voted either to accept completely or with minor reservation was 80% or higher, the statement was regarded as accepted. The prevalence of GERD in India ranges from 7.6% to 30%, being <10% in most population studies, and higher in cohort studies. The dietary factors associated with GERD include use of spices and non-vegetarian food. *Helicobacter pylori* is thought to have a negative

relation with GERD; *H. pylori* negative patients have higher grade of symptoms of GERD and esophagitis. Less than 10% of GERD patients in India have erosive esophagitis. In patients with occasional or mild symptoms, antacids and histamine H₂ receptor blockers (H₂RAs) may be used, and proton pump inhibitors (PPI) should be used in patients with frequent or severe symptoms. Prokinetics have limited proven role in management of GERD.

DOI: 10.1007/s12664-019-00979-y

PMID: 31802441

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Background: A number of techniques are described for correction of pectus excavatum (PE). This article describes the experience with an innovative procedure which combines features from the Ravitch and Nuss procedures without using prosthetic material.

Methods: This cross-sectional study included 12 cases of PE from January 2000 to March 2017 managed by excision of deformed costal cartilages and support to the thoracic cage using an autologous free rib graft as a strut. Indication for surgery was Haller's Index above 3.2 with or without respiratory distress. Noncontrast computed tomography scans were done at 6 months after surgery to document the position of the strut and to see the final correction and new Haller's Index, respectively.

Results: The male-to-female ratio was 2:1. Preoperative Haller's Index in all cases was >3.2 (range 3.25-14). The average age at surgery was 5 years and 8 months (range: 7 months-15 years). Mean duration of hospital stay was 11 days (range 5-16 days). The 11th rib was used commonly although in two cases, the 10th rib was used as the 11th rib was considered relatively short. Pericardial effusion requiring strut removal was seen in one case; in another case, removal of the rib was needed because of nonhealing of a delayed dehisced surgical wound. Others had an uneventful postoperative period. The mean postoperative Haller's Index was 2.75 (range 2.0-7).

Conclusion: This modified procedure using an autologous rib strut is technically feasible and reproducible even with limited facilities and gives excellent results.

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PMCID: PMC6752060

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In 2014, the International Endohernia Society (IEHS) published the first international "Guidelines for laparoscopic treatment of ventral and incisional abdominal wall hernias." Guidelines reflect the currently best available evidence in diagnostics and therapy and give recommendations to help surgeons to standardize their techniques and to improve their results. However, science is a dynamic field which is continuously developing. Therefore, guidelines require regular updates to keep pace with the evolving literature. METHODS: For the development of the original guidelines, all relevant literature published up to year 2012 was analyzed using the ranking of the Oxford Centre for Evidence-Based Medicine. For the present update, all of the previous authors were asked to evaluate the literature published during the recent years from 2012 to 2017 and revise their statements and recommendations given in the initial guidelines accordingly. In two Consensus Conferences (October 2017 Beijing, March 2018 Cologne), the updates were presented, discussed, and confirmed. To avoid redundancy, only new statements or recommendations are included in this paper. Therefore, for full understanding both of the guidelines, the original and the current, must be read. In addition, the new developments in repair of abdominal wall hernias like surgical techniques within the abdominal wall, release operations (transversus muscle release, component separation), Botox application, and robot-assisted repair methods were included.

RESULTS: Due to an increase of the number of patients and further development of surgical techniques, repair of primary and secondary abdominal wall hernias attracts increasing interests of many surgeons. Whereas up to three decades ago hernia-related publications did not exceed 20 per year, currently this number is about 10-fold higher. Recent years are characterized by the advent of new techniques-minimal invasive techniques using robotics and laparoscopy, totally extraperitoneal repairs, novel myofascial release techniques for optimal closure of large defects, and Botox for relaxing the abdominal wall. Furthermore, a concomitant rectus diastasis was recognized as a significant risk factor for recurrence. Despite insufficient evidence with respect to these new techniques, it seemed to us necessary to include them in the update to stimulate surgeons to do research in these fields.

CONCLUSION: Guidelines are recommendations based on best available evidence intended to help the surgeon to improve the quality of his daily work. However, science is a continuously evolving process, and as such guidelines should be updated about every 3 years. For a comprehensive reference, however, it is suggested to read both the initial guidelines published in 2014 together with the update. Moreover, the presented update includes also techniques which were not known 3 years before.

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PMID: 31250243

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Rituximab is an effective treatment for steroid-dependent/ frequently-relapsing nephrotic syndrome (SDFRNS) in children. However, the optimal rituximab regimen remains unknown. To help determine this we conducted an international, multicenter retrospective study at 11 tertiary pediatric nephrology centers in Asia, Europe and North America of children 1-18 years of age with complicated SDFRNS receiving rituximab between 2005-2016 for 18 or more months follow-up. The effect of rituximab prescribed at three dosing levels: low (375mg/m²), medium (750mg/m²) and high (1125-1500mg/m²), with or without maintenance immunosuppression (defined as concurrent use of corticosteroids, mycophenolate mofetil or calcineurin inhibition at first relapse or for at least six months following the rituximab treatment) was examined. Among the 511 children (median age 11.5 year, 67% boys), 191, 208 and 112 received low, medium and high dose rituximab, respectively. Within this total cohort of 511 children, 283 (55%) received maintenance immunosuppression. Renal biopsies were performed in 317 children indicating the predominant histology was minimal change disease (74%). Without maintenance immunosuppression, low-dose rituximab had a shorter relapse-free period and a higher relapse risk (8.5 months) than medium (12.7 months; adjusted hazard ratio, 0.62) and high dose (14.3 months; adjusted hazard ratio, 0.50; all significant). With maintenance immunosuppression, the relapse-free survival in low-dose rituximab (14 months) was similar to medium (10.9 months; adjusted hazard ratio, 1.23) and high dose (12.0 months; adjusted hazard ratio, 0.92; all non-significant). Most adverse events were mild. Thus, children receiving low-dose rituximab without maintenance immunosuppression had the shortest relapse-free survival. Hence, both rituximab dose and maintenance immunosuppression have important effects on the treatment outcomes.

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Epithelial myoepithelial carcinoma (EMC) is a rare biphasic tumor of salivary glands with low malignant potential. Although known to occur in submandibular gland and minor salivary glands, its most common location is parotid. Clinical and radiological findings often mimic a benign tumor. Because of rarity of EMC a standard treatment guideline is not yet known. Surgical resection is the most widely used approach. Although it is a low grade tumor, local recurrence rates of 23-50 % have been reported with 25 % chance of distant metastasis. Patients with histo-pathologic markers of aggressive disease should be considered for adjuvant radiotherapy. We report a case of epithelial myoepithelial carcinoma of parotid in a 40 year male that was treated with surgery followed by post-operative radiotherapy.

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DOI: 10.1007/s12070-016-1025-x

PMCID: PMC6848550 [Available on 2020-10-01]

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India is home to largest number of preterm births and neonates at risk of developing retinopathy of prematurity. Being a large heterogenous country, different approaches including training of local ophthalmologists, tele-screening by ophthalmic technicians carrying wide-angle retinal cameras and use of low-cost retinal cameras by neonatal unit healthcare providers are being tested to expand the coverage of screening.

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Menopause has been identified as a high-risk stage for weight gain in a woman's lifecycle. Menopause-related weight gain is a consequence of low circulating estrogen levels due to progressive loss of ovarian function. Moreover, the changes in the hormonal milieu, chronological aging, decline in physical activity coupled with westernized dietary pattern, and recurrent emotional eating episodes associated with psychological distress also contribute to the increase in total body fat and waist circumference. Higher waist circumference is an independent risk factor for cardiovascular and metabolic disease in menopausal women. These obesity-related cardiometabolic risk factors and menopausal symptoms can be effectively managed by achieving clinically significant weight loss through lifestyle modification. Behavioral lifestyle intervention uses behavioral techniques for counseling corrective dietary and physical activity practices in achieving sustainable weight loss outcomes. Majority of menopausal women seek this counseling from gynecologist, especially in primary care settings due to nonavailability of multidisciplinary teams. Thus, the aim of the review is to understand the menopause-obesity link, associated risk factors, and its

health-related burden in perimenopausal women to devise a practical women-centric weight management module based on lifestyle modification techniques to address the burden of menopausal obesity in regular gynecological practice.

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PMID: 31942151

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OBJECTIVE: To evaluate the relationship between myocardial histopathology and tissue Doppler imaging (TDI) variables of the right ventricle and postoperative peak systolic right-to-left ventricular pressure ratio (Prv/Plv) in patients undergoing intracardiac repair for tetralogy of Fallot (TOF).

METHODS: Operatively resected crista supraventricularis muscle specimens from 93 patients undergoing intracardiac repair for TOF, aged 18 months to 26 years (mean, 7.02 ± 5.35 years) were subjected to light microscopy. TDI-derived parameters between the normal and abnormal categories of myocardium, the evolution of Prv/Plv, and its relationship to TDI-derived variables were tested using generalized linear random effects model using xtreg command.

RESULTS: The incidence of myocyte hypertrophy, myocytolysis, and perivascular fibrosis was 89.2%, 83.8%, and 77.4%, respectively. Although tricuspid annular peak systolic excursion, peak myocardial velocity during systole (s'), and early diastolic basal lengthening of right ventricle (e') continued to improve among patients with myocardial hypertrophy, myocytolysis, and perivascular fibrosis, there was an absence of improvement of the late diastolic relaxation of right ventricular free wall (a') in patients with perivascular fibrosis. Although there was improvement of postoperative Prv/Plv in patients with myocardial fibrosis as compared with normal histology, the values were not statistically significant (β [standard error] -0.07 [0.08], $P = .3$).

CONCLUSIONS: The great majority of myocardial tissues in cyanotic TOF indicate pre-existing hypertrophic, degenerative, and fibrotic changes. Perivascular fibrosis affects the diastolic compliance of the right ventricle and may account for the absence of improvement of late diastolic relaxation (a') and greater postoperative Prv/Plv in the absence of a residual surgical lesion.

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37: Dadhich H, Sharma R, Borkar SA, Dash A, Mahajan S, Sharma MC. Solitary Extra-axial Intracranial Primary Meningeal Pleomorphic Xanthoastrocytoma: An Extremely Rare Case. *World Neurosurg.* 2019 Oct;130:386-390. doi: 10.1016/j.wneu.2019.06.218. Epub 2019 Jul 8. PubMed PMID: 31295593.

BACKGROUND: Pleomorphic xanthoastrocytomas (PXAs) are a rare type of astrocytoma, which, similar to other gliomas, can rarely arise from glial nests in the meninges, manifesting as an extra-axial mass. We describe a solitary extra-axial intracranial primary meningeal PXA in the pediatric age group, which was masquerading as a tentorial meningioma.

CASE DESCRIPTION: A 9-year-old girl presented with features of raised intracranial pressure. Imaging revealed a dural-based mass in the tentorial region suggestive of a meningioma. This suspicion was further strengthened by intraoperative visualization of an extra-axial tumor with wide tentorial attachment. Near-total excision was achieved. Histopathologic examination established the diagnosis of PXA. Given the tumor's apparent meningeal origin and lack of connection with brain parenchyma in imaging and intraoperative findings, primary meningeal PXA was diagnosed. The absence of coexisting tumor foci on spinal magnetic resonance imaging further refined the diagnosis as solitary extra-axial intracranial primary meningeal PXA. The patient received radiotherapy for the residual tumor and was doing well at 6 months after presentation; however, she was lost to follow-up after that.

CONCLUSIONS: Solitary extra-axial intracranial primary meningeal PXA is an extremely rare entity with only 3 reported cases in the literature including the present case. This is the first report of such a tumor in a pediatric patient. This report also highlights that primary meningeal PXA can manifest as an extra-axial mass lesion and may warrant inclusion in the differential diagnosis of extra-axial mass lesions.

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38: Dadhwal V, Garimella S, Khoiwal K, Sharma KA, Perumal V, Deka D. Mifepristone Followed by Misoprostol or Ethacridine Lactate and Oxytocin for Second Trimester Abortion: A Randomized Trial. *Eurasian J Med.* 2019 Oct;51(3):262-266. doi: 10.5152/eurasianjmed.2019.18341. Epub 2019 Aug 19. PubMed PMID: 31692613; PubMed Central PMCID: PMC6812907.

Objective: To compare two medical methods for second-trimester abortion, mifepristone followed by misoprostol versus mifepristone followed by ethacridine lactate and oxytocin for success rate, induction to abortion time and acceptability.

Materials and Methods: This is a randomized trial conducted from July 2014 to May 2016 and enrolled 120 women undergoing second trimester abortion (13-20 weeks). All patients received 200mg mifepristone orally and were randomized to receive further treatment after 36 hrs. Patients in Group M (n=60) received 400 microgram of misoprostol vaginally every 3 hours (maximum - 5 doses) and Group E (n=60) had extra-amniotic ethacridine lactate instillation followed by oxytocin infusion (max-100miu).

Results: Baseline demographic characteristics were comparable in both the groups. Success rate was 100% in group M and 98.3% in group E (p=0.31). Mean induction to abortion time was significantly shorter in group M than group E (8.2+2.3hours & 10.9+2.6 hours respectively; p=0.001). Majority of women reported side effects, 96.7% women in group M and 75% women in group E (p=0.001). Fall in hemoglobin after procedure was significantly higher in group M (0.70+0.33gram %) than group E (0.52+0.23 gram %) (p=0.001). Perception of intensity of pain was significantly more in group M but patient satisfaction in both groups was similar.

Conclusion: Both methods are comparable for success rate, induction interval was more for ethacridine lactate compared to misoprostol.

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Background and Aims: Administration of fentanyl before induction of anaesthesia with propofol should facilitate smooth induction, with a reduction in induction dose of propofol and its side effects. This study was designed to examine the effect of varying intervals between fentanyl and propofol administration on the dose of propofol required for induction of anaesthesia.

Methods: After institutional ethical clearance, 129 American Society of Anesthesiologists physical status I--II patients, aged 18--65 years, undergoing elective surgery under general anaesthesia were randomised into three groups.

Fentanyl 2 mcg/kg was administered immediately prior to, 3 and 5 min before induction with propofol in Groups 1, 2, and 3, respectively. Requirement of propofol induction dose and haemodynamic parameters was recorded. Statistical analysis was performed using software SPSS (SPSS Inc., Chicago, Illinois, USA). **Results:** Total dose of propofol required for induction was highest in Groups 1 and lowest Group 3 (Group 1 vs. 2 vs. 3: 86.28 ± 21.12 vs. 71.67 ± 21.68 vs. 59.98 ± 20.35 mg, P < 0.00001). Dose of propofol required per kg body weight was significantly higher in Group 1 (1.41 ± 0.34 mg/kg) compared to both Group 2 (1.14 ± 0.38 mg/kg) and Group 3 (0.97 ± 0.32 mg/kg) (P < 0.00001). Incidence of hypotension during induction was significantly lower in Group 3 (14%) and Group 2 (17.1%) than in Group 1 (35.6%; P = 0.03).

Conclusion: Administering fentanyl 5 min prior to propofol causes marked reduction in the dose requirement of the latter along with a significantly decreased incidence of hypotension during induction.

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40: Das N, Thakral D, Singh G, Malhotra A, Phulware RH, Gogia A, Gupta R. FLI1 and MIC2 expression in precursor B-lymphoblastic leukemia with Burkitt-like morphology and extensive extramedullary involvement: A diagnostic challenge in pediatric small round cell tumor. *Indian J Pathol Microbiol.* 2019 Oct-Dec;62(4):614-617. doi: 10.4103/IJPM.IJPM_520_18. PubMed PMID: 31611454.

Pediatric small round cell tumors (PSRCTs) constitute a large proportion of childhood malignancies with overlapping diagnostic and clinical features but radically different therapies. Here, we report a case of 16-year-old male child presenting with diffuse abdominal and mediastinal mass, axillary lymphadenopathy, and pleural effusion. Bone marrow aspirate showed near total replacement by small round malignant cells. The bone marrow biopsy showed interstitial infiltration by malignant cells, which were CD45- CD3- CD20- MIC2+ FLI1+ and diagnosis of Ewing's sarcoma was established. In contrast, flowcytometric immunophenotyping of the bone marrow aspirate showed CD45- cells, which were CD19+ cytCD79a+ CD10+ CD81+ CD38+ HLA-DR+ CD22+ CD20- consistent with B-cell acute lymphoblastic leukemia (B-ALL). The extended immunostaining panel on bone marrow biopsy also showed positivity for cytCD79a, CD10, CD19, and BCL-2, whereas fluorescent in-situ hybridization for EWSR1 gene rearrangement was negative. Thus, a final diagnosis of CD45- FLI1+ MIC2+ B-ALL was established. Rare cases of CD45- B-ALL with immunoreactivity for MIC2 and Friend leukemia virus integration 1 (FLI1) have

posed a diagnostic challenge for PSRCTs in the recent past. This case report highlights the role of multimodality approach in establishing a correct diagnosis in CD45- PSRCTs to ensure definitive therapy and better clinical outcome.

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41: Dey D, Jingar P, Agrawal S, Shrivastava V, Bhattacharya A, Manhas J, Garg B, Ansari MT, Mridha AR, Sreenivas V, Khurana A, Sen S. *Symphytum officinale* augments osteogenesis in human bone marrow-derived mesenchymal stem cells in vitro as they differentiate into osteoblasts. *J Ethnopharmacol.* 2020 Feb 10;248:112329. doi: 10.1016/j.jep.2019.112329. Epub 2019 Oct 28. PubMed PMID: 31672526.

ETHNOPHARMACOLOGICAL RELEVANCE: Mesenchymal stem cells (MSCs) are multipotent stem cells possessing regenerative potential. *Symphytum officinale* (SO) is a medicinal plant and in homoeopathic literature, believed to accelerate bone healing.

AIM OF THE STUDY: This study aimed to determine if homoeopathic doses of SO could augment osteogenesis in MSCs as they differentiate into osteoblasts in vitro.

MATERIALS AND METHODS: Bone marrow samples were obtained from patients who underwent bone grafting procedures (n=15). MSCs were isolated, expanded and characterized by flow cytometry (CD90, CD105). Cytotoxicity of SO was evaluated by MTT assay. Osteogenic differentiation was induced in MSCs with β -glycerophosphate, ascorbic acid and dexamethasone over 2 weeks. Different homoeopathic doses of SO (MT, 3C, 6C, 12C and 30C) were added to the basic differentiation medium (BDM) and efficiency of MSCs differentiating into osteoblasts were measured by evaluating expression of Osteocalcin using flow cytometry, and alkaline phosphatase activity using ELISA. Gene expression analyses for osteoblast markers (Runx-2, Osteopontin and Osteocalcin) were evaluated in differentiated osteoblasts using qPCR.

RESULTS: Flow cytometry (CD90, CD105) detected MSCs isolated from bone marrow (93-98%). MTT assay showed that the selected doses of SO did not induce any cytotoxicity in MSCs (24 hours). The efficiency of osteogenic differentiation (2 weeks) for different doses of *Symphytum officinale* was determined by flow cytometry (n=10) for osteoblast marker, Osteocalcin, and most doses of *Symphytum officinale* enhanced osteogenesis. Interestingly, gene expression analysis for Runx-2 (n=10), Osteopontin (n=10), Osteocalcin (n=10) and alkaline phosphatase activity (n=8) also showed increased osteogenesis with the addition of *Symphytum officinale* to BDM, specially mother tincture.

CONCLUSIONS: Our findings suggest that homoeopathic dose (specially mother tincture) of *Symphytum officinale* has the potential to enhance osteogenesis.

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42: Dhiman A, Kumar C, Mishra SK, Sikri K, Datta I, Sharma P, Singh TP, Haldar S, Sharma N, Bansal A, Ahmad Y, Kumar A, Sharma TK, Tyagi JS. Theranostic Application of a Novel G-Quadruplex-Forming DNA Aptamer Targeting Malate Synthase of *Mycobacterium tuberculosis*. *Mol Ther Nucleic Acids.* 2019 Dec 6;18:661-672. doi: 10.1016/j.omtn.2019.09.026. Epub 2019 Oct 4. PubMed PMID: 31704587; PubMed Central PMCID: PMC6849348.

The successful management of tuberculosis (TB) requires efficient diagnosis and treatment. Further, the increasing prevalence of drug-resistant TB highlights the urgent need to develop novel inhibitors against both drug-susceptible and

drug-resistant forms of disease. Malate synthase (MS), an enzyme of the glyoxylate pathway, plays a vital role in mycobacterial persistence, and therefore it is considered as an attractive target for novel anti-TB drug development. Recent studies have also ascribed an adhesin function to MS and established it as a potent diagnostic biomarker. In this study, a panel of Mycobacterium tuberculosis (Mtb) MS-specific single-stranded DNA aptamers was identified by Systematic Evolution of Ligands by EXponential enrichment (SELEX). The best-performing G-quadruplex-forming 44-mer aptamer, MS10, was optimized post-SELEX to generate an 11-mer aptamer, MS10-Trunc. This aptamer was characterized by various biochemical, biophysical, and in silico techniques. Its theranostic activity toward Mtb was established using enzyme inhibition, host cell binding, and invasion assays. MS10-Trunc aptamer exhibited high affinity for MS (equilibrium dissociation constant [KD] ~19 pM) and displayed robust inhibition of MS enzyme activity with IC₅₀ of 251.1 nM and inhibitor constant (K_i) of 230 nM. This aptamer blocked mycobacterial entry into host cells by binding to surface-associated MS. In addition, we have also demonstrated its application in the detection of tuberculous meningitis (TBM) in patients with sensitivity and specificity each of >97%.

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DOI: 10.1016/j.omtn.2019.09.026

PMCID: PMC6849348

PMID: 31704587

43: Dhochak N, Jat KR, Sankar J, Lodha R, Kabra SK. Predictors of Malnutrition in Children with Cystic Fibrosis. Indian Pediatr. 2019 Oct 15;56(10):825-830. Epub 2019 Aug 10. PubMed PMID: 31441435.

OBJECTIVE: To determine occurrence of malnutrition in children with cystic fibrosis and identify predictors of malnutrition at time of enrolment and after 2 years of follow up.

DESIGN: Retrospective chart review.

PATIENTS: Cystic fibrosis patients enrolled between 2009-2015 with at least 3 years follow-up.

SETTING: Pediatric chest clinic at a tertiary-care center in northern India.

PROCEDURE: Weight and height were noted at enrolment, and after 1 year and 2 years of follow-up. Clinical details, medications, and pulmonary exacerbations during second year were recorded.

MAIN OUTCOME MEASURE: Occurrence of malnutrition i.e. weight for age Z-score < -2.

RESULTS: 61 medical records were reviewed. Occurrence of malnutrition at baseline, and 1- and 2-year follow-up was 65.5%, 54.1% and 57.3%, respectively. Weight for age Z-score at enrolment significantly correlated with time to diagnosis from onset ($r=0.015$, $P=0.029$). Weight for age Z-score at 2-year follow-up was significantly associated with steatorrhea ($P=0.03$), increased frequency of stools ($P<0.01$) and pulmonary exacerbation ($P=0.03$) during second year. Linear regression showed significant association between weight for age Z-score at 2 years with steatorrhea and pulmonary exacerbations [$r=-0.795$ (-1.527, -0.062)] and [$r=-0.261$ (-0.493, -0.028)]. Pulmonary exacerbations during second and third year had significant correlation with weight for age Z-score at the beginning of respective years ($r = -0.219$, $P=0.015$).

CONCLUSIONS: Occurrence of malnutrition is high in children with cystic fibrosis in this region, with uncontrolled fat malabsorption and recurrent respiratory infections being significant risk factors.

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Indian Acad Neurol. 2019 Oct-Dec;22(4):506-512. doi: 10.4103/aian.AIAN_293_19. Epub 2019 Oct 25. PubMed PMID: 31736585; PubMed Central PMCID: PMC6839316.

We present the clinicopathologic conference of a 34-year-old lady with history of facial palsy 14 years ago who developed new deficits of mononeuritis multiplex, maculopapular rash, pancytopenia, splenomegaly, lung involvement and cognitive decline rapidly over three years. Investigations revealed pancytopenia, reversal of albumin globulin ratio, mediastinal adenopathy, ANA positivity, low C3 levels with the CSF being inflammatory and MRI showing extensive hemorrhagic lesions with mass effect. She had a rapidly progressive fatal course over three years with the disease being undiagnosed. This case was presented in the annual meeting of the Indian Academy of Neurology in September 2018.

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DOI: 10.4103/aian.AIAN_293_19

PMCID: PMC6839316

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Introduction: Osteoblastoma and aneurysmal bone cyst (ABC) are rare bone tumors with individual prevalence of <1%. Their combined occurrence is a rare subclass of tumors in the spinal column with only a few cases reported in literature. **Case presentation:** The present case is a rare combination of aggressive osteoblastoma with secondary aneurysmal bone cyst masquerading as neck pain, arising from cervical C4 vertebra in a 19-year-old male. The patient presented with complaints of neck pain for 7 months, gradual in onset, dull, aching, and progressively increasing in severity. Neurological examination was normal. Radiology showed an expansile lytic mass arising from the posterior elements of C4 vertebra involving the left lateral mass. Piecemeal total removal was done and a posterior fusion from C3 to C5 was performed for stability. Histopathology confirmed the osteoblastoma with a secondary aneurysmal bone cyst. Postoperatively the patient recovered well, and no recurrence was seen on a 2-year follow-up. **Discussion:** Simultaneous presence of an osteoblastoma with a secondary ABC arising from various bones, such as cranial fossa, ethmoid sinus, skull, and mandibular condyle, has rarely been reported. It is often diagnosed late due to nonspecific symptoms; but it has a good prognosis if early and complete resection is performed. Thorough surgical excision is always a challenge in spine cases due to surrounding important structures and meticulousness is required to prevent any recurrences. Hence, we recommend a surgical team comprising both spine and musculoskeletal oncologic surgeons to achieve best results.

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DOI: 10.1038/s41394-019-0233-5

PMCID: PMC6821762 [Available on 2020-10-22]

PMID: 31700687

47: Garg B, Mehta N. Minimally invasive transforaminal lumbar interbody fusion (MI-TLIF): A review of indications, technique, results and complications. *J Clin Orthop Trauma*. 2019 Oct;10(Suppl 1):S156-S162. doi: 10.1016/j.jcot.2019.01.008. Epub 2019 Jan 14. Review. PubMed PMID: 31695275; PubMed Central PMCID: PMC6823784.

Minimal access surgery has revolutionized most surgical disciplines and spine surgery is no exception. Minimally invasive transforaminal lumbar interbody fusion (MI-TLIF) was devised to reduce the approach-related morbidity of open TLIF and has flourished in the last decade. With expanding indications, standardization of technique and equipment, publication of more studies on its results and complications being brought to light - an update of the existing knowledge on MI-TLIF is imminent. We provide a review of the indications, technique, results and complications of MI-TLIF while also highlighting its variations and utility in special situations.

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DOI: 10.1016/j.jcot.2019.01.008
PMCID: PMC6823784 [Available on 2020-10-01]
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OBJECTIVE: To evaluate the temporal profile of arterial functions during the course of pregnancy and also to determine the predictive accuracy of vascular function indices in development of preeclampsia (PE).

STUDY DESIGN: Longitudinal study, two hundred and eight women participated in the study and vascular functions were assessed at 11-13, 20-22 and 30-32 weeks of gestation.

MAIN OUTCOME MEASURES: Flow mediated dilatation (FMD), augmentation index (AIx), pulse wave velocity (PWV).

RESULTS: Out of 208 women, 13 women developed PE while 70 remained healthy pregnant (HP). In HP women, normalized FMD decreased gradually from 11 to 13 weeks to 30-32 weeks of gestation ($p < 0.05$). While in PE, Normalized FMD decreased from 11 to 13 to 20-22 weeks of gestation ($p < 0.05$) and was significantly lower in PE than HP group at 20-22 weeks of gestation ($p < 0.05$). AIx showed a mid trimester drop in HP group ($p < 0.05$) while demonstrated a rising trend in PE. Both AIx and PWV were significantly higher in PE than HP group during the course of pregnancy ($p < 0.05$). AIx demonstrated good sensitivity and specificity at both 11-13 and 20-22 weeks of gestation. Carotid femoral PWV showed an area under curve (AUC) of 78.18% and 69.75% at 11-13 and 20-22 weeks of gestation respectively. Carotid radial PWV showed good accuracy at 20-22 weeks (AUC-77.58%) of gestation.

CONCLUSIONS: Compromised arterial functions precede the onset of PE. AIx and carotid femoral PWV constitute potential predictive marker in early pregnancy for later development of PE.

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DOI: 10.1016/j.preghy.2019.09.013
PMID: 31585347

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Solid variant of aneurysmal bone cyst (sABC) is an extremely rare, reactive and non-neoplastic osseous lesion. On imaging it presents as a diaphyseal aggressive, eccentrically placed lytic and expansile lesion. However, differentiating this entity from the other possible malignant differentials is confounded by the histopathology mimicking several commoner lesions. We describe the distinctive MRI features of sABC of long bones from a series of four cases and briefly review the literature. We hope this review will educate all radiologists about this rare entity increasing their diagnostic confidence while formulating differentials for similar appearing lesions.

Copyright: © 2019 Indian Journal of Radiology and Imaging.

DOI: 10.4103/ijri.IJRI_160_19
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PMID: 31741595

51: Goel P, Bajpai M, Sharma K, Naranje P. Previously Undescribed Anomalies of Hepatic Artery and Portal Venous Anatomy in a Case of Extrahepatic Biliary Atresia and its Implications. *J Indian Assoc Pediatr Surg*. 2019 Oct-Dec;24(4):294-296. doi: 10.4103/jiaps.JIAPS_132_18. PubMed PMID: 31571764; PubMed Central PMCID: PMC6752067.

A search on PubMed and Web of Science revealed scarcity of the literature on anomalies of hepatic artery or portal vein and the presence of arterioportal fistula in biliary atresia; although, it has long-lasting implications for both the patient and the surgeon, including hepato-pancreato-biliary surgeons, pediatric surgeons (who perform Kasai's portoenterostomy), liver transplant surgeons, and interventional radiologists. We report a case of extrahepatic biliary atresia with multiple anomalies involving the hepatic arteries, portal vein, cystic artery, arterioportal fistula and shunting, intrahepatic portal vein radicals, kidney, and external genitalia. The merits of the case from various standpoints including its implications for etiopathogenesis, caution during surgical anesthesia or postoperative management, and enrichment of the literature have been discussed.

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DOI: 10.4103/jiaps.JIAPS_132_18
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PURPOSE: The study evaluated the usefulness of magnetic resonance imaging (MRI) texture parameters in differentiating clear cell renal carcinoma (CC-RCC) from non-clear cell carcinoma (NC-RCC) and in the histological grading of CC-RCC. **MATERIALS AND METHODS:** After institutional ethical approval, this retrospective study analyzed 33 patients with 34 RCC masses (29 CC-RCC and five NC-RCC; 19 low-grade and 10 high-grade CC-RCC), who underwent MRI between January 2011 and December 2012 on a 1.5-T scanner (Avanto, Siemens, Erlangen, Germany). The MRI protocol included T2-weighted imaging (T2WI), diffusion-weighted imaging [DWI; at b 0, 500 and 1000 s/mm² with apparent diffusion coefficient (ADC) maps] and T1-weighted pre and postcontrast [corticomedullary (CM) and nephrographic (NG) phase] acquisition. MR texture analysis (MRTA) was performed using the TexRAD research software (Feedback Medical Ltd., Cambridge, UK) by a single reader who placed free-hand polygonal region of interest (ROI) on the slice showing the maximum viable tumor. Filtration histogram-based texture analysis was used to generate six first-order statistical parameters [mean intensity, standard deviation (SD), mean of positive pixels (MPP), entropy, skewness and kurtosis] at five spatial scaling factors (SSF) as well as on the unfiltered image. Mann-Whitney test was used to compare the texture parameters of CC-RCC versus NC-RCC, and high-grade versus low-grade CC-RCC. P value < 0.05 was considered significant. A 3-step feature selection was used to obtain the best texture metrics for each MRI sequence and included the receiver-operating characteristic (ROC) curve analysis and Pearson's correlation test. **RESULTS:** The best performing texture parameters in differentiating CC-RCC from NC-RCC for each sequence included (area under the curve in parentheses): entropy at SSF 4 (0.807) on T2WI, SD at SSF 4 (0.814) on DWI b500, SD at SSF 6 (0.879) on DWI b1000, mean at SSF 0 (0.848) on ADC, skewness at SSF 2 (0.854) on T1WI and skewness at SSF 3 (0.908) on CM phase. In differentiating high from low-grade CC-RCC, the best parameters were: entropy at SSF 6 (0.823) on DWI b1000, mean at SSF 3 (0.889) on CM phase and MPP at SSF 5 (0.870) on NG phase. **CONCLUSION:** Several MR texture parameters showed excellent diagnostic performance (AUC > 0.8) in differentiating CC-RCC from NC-RCC, and high-grade from low-grade CC-RCC. MRTA could serve as a useful non-invasive tool for this purpose.

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PMID: 31300850

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Short stature in children is a diagnostic challenge to the physician. Bone age assessment can be done using various methods. The causes of short stature are variable; often leading to a series of investigations. The endocrine conditions have typical imaging features. This chapter provides a short overview of the methods of bone age estimation, and imaging findings and algorithmic approach towards a child with short stature.

DOI: 10.1007/s12098-019-02920-9
PMID: 30887222

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Aim: Parkinson's disease and schizophrenia are clinical end points of dopaminergic deficit and excess, respectively, in the mid-brain. In accordance, current pharmacological interventions aim to restore normal dopamine levels, the overshooting of which culminates in adverse effects which results in psychotic symptoms in Parkinson's disease and extra-pyramidal symptoms in schizophrenia. Currently, there are no laboratory assays to assist treatment decisions or help foresee these drug side-effect outcomes. Therefore, the aim was to discover a protein biomarker that had a varying linear expression across the clinical dopaminergic spectrum.

Materials and methods: iTRAQ-based proteomic experiments along with mass spectrometric analysis was used for comparative proteomics using cerebrospinal fluid (CSF). CSF fluid was collected from 36 patients with Parkinson's disease, 15 patients with urological diseases that served as neurological controls, and seven schizophrenic patients with hallucinations. Validation included ELISA and pathway analysis to highlight the varying expression and provide plausible molecular pathways for differentially expressed proteins in the three clinical phenotypes.

Results: Protein profiles were delineated in CSF from Parkinson's disease patients, neurological control and schizophrenia, respectively. Ten of the proteins that were identified had a linear relationship across the dopaminergic spectrum. α -2-Macroglobulin showed to be having high statistical significance on inter-group comparison on validation studies using ELISA.

Conclusions: Non-gel-based proteomic experiments are an ideal platform to discover potential biomarkers that can be used to monitor pharmaco-therapeutic efficacy in dopamine-dictated clinical scenarios. α -2 Macroglobulin is a potential biomarker to monitor pharmacological therapy in Parkinson's disease and schizophrenia.

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DOI: 10.2147/NDT.S214217
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High-flow nasal oxygen therapy warms and humidifies gases, allows better clearance of secretions, along with providing added benefits like preventing dehydration of airway surface, while decreasing atelectasis and thereby, offering comfort to the patient. While its effect on critically ill patients is still in its pioneering phase, there is lack of substantial evidence on the use of high-flow nasal cannula in cardiac patients with type I respiratory failure. We found it worthwhile to share our experience of its use in elderly and postpartum

patients with moderate-to-severe pulmonary hypertension, with associated comorbidities and type I respiratory failure, with do-not-intubate or defer intubation status. In patients with pulmonary hypertension (PHT) and respiratory failure, endotracheal intubation followed by initiation of mechanical ventilation may have detrimental hemodynamic effects. Increase in lung volumes and decrease in functional residual capacity lead to increase in pulmonary hypertension and right ventricle afterload. If a patient has right heart failure, lung hyperinflation can fatally reduce cardiac output. High-flow nasal oxygen therapy may be of an advantage in these scenarios. How to cite this article: Gupta B, Kerai S, Kakkar K, Gupta L. Role of High-flow Nasal Oxygen Therapy in Cases with Pulmonary Hypertension in an Intensive Care Unit Setting. *Indian J Crit Care Med* 2019;23(10):458-461.

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OBJECTIVES: To report the distribution pattern of various categories of primary immunodeficiency disorders (PIDs) in children from North India, frequency of warning signs and critical parameters for evaluation.

METHODS: In this retrospective study, 528 children below 18 y of age after clinical assessment and presentation suggestive of PID were further screened by immunophenotyping for immune cell markers by flow cytometry.

RESULTS: A total of 120 (23%) children were diagnosed with PID with median age at diagnosis being 2.5 y in males and 3.5 y in females and an average delay in diagnosis from onset of symptoms being approximately 5 y. Chronic lower respiratory tract infections, gastrointestinal symptoms like persistent diarrhea and failure to thrive were amongst the most common warning signs in these patients. PIDs were classified according to the International Union of Immunological Societies' (IUIS) criteria. The diagnosis of index study subjects included combined humoral and cellular immunodeficiency (29%), phagocytic defects (29%), followed by predominantly antibody deficiency (18%), innate immunity and dysregulation (17%) and other well-defined syndromes (7%). A family history of PID (23%), consanguineous marriage (8%) and previous sibling death (23%) were observed as major clinical predictors/clues for underlying PID. All children received prophylactic antibiotics and/or antifungals in addition to specific therapy for underlying immune deficiency.

CONCLUSIONS: The field of PIDs in India remains largely unexplored and we are faced with various challenges in the diagnosis of PIDs due to lack of awareness as well as absence of equipped immunological laboratory support. The authors propose a methodical step-wise laboratory diagnostic approach that can facilitate early diagnosis and timely intervention of these mis/underdiagnosed disorders.

DOI: 10.1007/s12098-019-02971-y

PMID: 31177511

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OBJECTIVES: To evaluate the clinical and molecular spectrum, and factors affecting clinical outcome of patients in India diagnosed with infantile-onset Pompe disease (IOPD).

STUDY DESIGN: In this multicenter, cross-sectional study, we evaluated the records of 77 patients with IOPD to analyze their clinical course, outcomes, and factors influencing the outcomes.

RESULTS: Of the 77 patients with IOPD, phenotype data were available in 59; 46 (78%) had the classic phenotype. Overall, 58 of 77 (75%) and 19 of 77 (25%) patients were symptomatic before and after age 6 months, respectively. Alpha-glucosidase gene variant analysis available for 48 patients (96 alleles) showed missense variants in 49 alleles. Cross-reactive immunologic material (CRIM) status could be determined or predicted in 44 of 48 patients. In total, 32 of 44 patients (72%) were CRIM-positive, and 12 of 44 patients (27%) were CRIM-negative. Thirty-nine cases received enzyme-replacement therapy (ERT), alglucosidase alfa, and 38 patients never received ERT. Median age at initiation of ERT was 6.5 months. Response to ERT was better in babies who had CRIM-positive, non-classic IOPD.

CONCLUSIONS: This study highlights the clinical spectrum of IOPD in India and provides an insight on various factors, such as undernutrition, feeding difficulties, and recurrent respiratory infection, as possible factors influencing clinical outcomes in these patients. The study also reiterates the importance of raising awareness among clinicians about the need for early diagnosis and timely treatment of IOPD.

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DOI: 10.1016/j.jpeds.2019.08.058
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60: Gupta N, Kodan P, Baruah K, Soneja M, Biswas A. Zika virus in India: past, present and future. QJM. 2019 Oct 23. pii: hcz273. doi: 10.1093/qjmed/hcz273. [Epub ahead of print] PubMed PMID: 31642501.

Zika virus is an arthropod-borne flavivirus that presents with acute febrile illness associated with rash, arthralgia and conjunctivitis. After years of sporadic reports in Africa, the three major outbreaks of this disease occurred in Yap Islands (2007), French Polynesia (2013–2014) and South Americas (2015–2016). Although, serological surveys suggested the presence of ZIKV in India in 1950s, cross reactivity could not be ruled out. The first four proven cases of ZIKV from India were reported in 2017. This was followed by major outbreaks in the states of Rajasthan and Madhya Pradesh in 2018. Fortunately, the outbreaks in India were not associated with neurological complications. These outbreaks in India highlighted the spread of this disease beyond geographical barriers owing to the growing globalization, increased travel and ubiquitous presence of its vector, the Aedes mosquito. We discuss the epidemiology, clinical features, management of Zika virus in India in this review.

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AIMS: Anatomic variations in hearts with common arterial trunk are well-known, although there is no large study of living patients. Detailed knowledge of the origins of the pulmonary and coronary arteries is vital for surgical management. We sought to clarify the variations using computed tomography.

METHODS AND RESULTS: We prospectively studied 70 consecutive patients using echocardiography and computed tomography. In 63 (90%) patients, there was aortic dominance, while 7 (10%) had dominance of the pulmonary component. In 27 (43%) patients with aortic dominance, part of the pulmonary segment arose from a truncal valvar sinus. A long confluent pulmonary channel was more common in patients with sinus origin compared to those with non-sinus origin of the pulmonary segment (19 vs. 0; $P=0.0005$). Close proximity between the orifices of the coronary arteries and the pulmonary component was also more frequent with sinus origin (21 vs. 6; $P<0.001$) with 5 (19%) patients having pulmonary flow obstructed by a truncal valvar leaflet.

CONCLUSION: Sinus origin of the pulmonary component is common with aortic dominance, frequently in association with a long confluent pulmonary segment, which may be in close proximity to the origin of a coronary artery. One-fifth of patients with sinus origin of pulmonary component have a truncal valvar leaflet obstructing the pulmonary orifice. These morpho-anatomic findings have important implications for management.

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DOI: 10.1093/ehjci/jez255
PMID: 31628808

64: Gurjar HK, Mishra S, Garg K. Incipient Transcalvarial Cerebral Herniation: Underrecognized Complication of Elective Craniotomy. *World Neurosurg.* 2019 Oct;130:240-243. doi: 10.1016/j.wneu.2019.07.009. Epub 2019 Jul 8. PubMed PMID: 31295622.

BACKGROUND: Herniation of the brain through an osseodural defect has been well described in small children as an uncommon occurrence after closed head injury. Pressure from the growing brain has been implicated in progressive enlargement and reshaping of the fracture line. An analogous phenomenon in adults has been observed in the described cases where neurosurgical intervention led to a persistent dural defect. Transcalvarial herniation of the brain through the dural defect resulted in characteristic neurologic and imaging findings producing symptoms disproportionately greater than expected from the extent of the affected brain, accompanied by enlargement of the underlying ventricle and elevation of the bone flap. Disruption of the axonal conduction due to distortion of the axons in the herniated brain is probably responsible for these observations.

CASE DESCRIPTION: A series of 3 cases is described. In all cases, the dural

reconstitution at the conclusion of surgery was incomplete. Brain herniation was evident in the postoperative scan. The transcalvarial herniation of the brain was precipitated by either a seizure and resultant brain swelling or persistently raised intracranial tension from a tumor residual. In 2 cases, surgical reexploration resulted in improvement in the neurologic symptoms.

CONCLUSIONS: In symptomatic patients with transcalvarial herniation of the brain, identified on imaging, the neurologic syndrome is quite characteristic. Recognition of this condition and prompt treatment lead to lasting neurologic improvement.

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65: Haque S, Sengupta S, Gupta D, Bhan MK, Kumar R, Khan A, Jaikhani B. S.Typhi derived OmpC peptide conjugated with Vi-polysaccharide evokes better immune response than free Vi-polysaccharide in mice. *Biologicals*. 2019 Nov;62:50-56. doi: 10.1016/j.biologicals.2019.10.001. Epub 2019 Oct 9. PubMed PMID: 31606267.

Salmonella typhi is a causative organism for typhoid fever. Free Vi capsular polysaccharide (Vi) is licensed for use as vaccine for typhoid fever in individuals 2 years of age and older, which has limited memory response. There is dire need of protein or peptide as conjugate partner with Vi polysaccharide to improve shortcomings of Vi vaccine. Prediction of immunogenic peptide was deduced by program T sites. Carbodiimide mediated conjugation of Vi polysaccharide with OmpCp was performed utilizing ADH as linker. Immune response of Vi-conjugates along with control group was tested in mice. Ig and IgG antibodies against Vi polysaccharide was measured by ELISA. Two immunodominant regions (loop number 3a and 7) with high content of T-cell epitopes from OmpC was selected and synthesized. Vi poly/OmpCp ratios in Vi-conjugates were ~0.43-0.65. Vi polysaccharide alone elicited very low levels of Vi antibody without any booster effect. Vi-conjugate evoked 20-fold higher immune response compared to free Vi. Further, adequate levels of IgG antibodies were induced only by the Vi-conjugate suggesting that T-helper cells had been induced. Our data suggest that selected short peptide (OmpCp) as a carrier with Vi polysaccharide is assumed to be a promising molecule for candidate vaccine for typhoid fever.

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PMID: 31606267

66: Howlett JG, Stebbins A, Petrie MC, Jhund PS, Castelvechio S, Cherniavsky A, Sueta CA, Roy A, Piña IL, Wurm R, Drazner MH, Andersson B, Battle C, Senni M, Chrzanowski L, Merkely B, Carson P, Desvigne-Nickens PM, Lee KL, Velazquez EJ, Al-Khalidi HR; STICH Trial Investigators. CABG Improves Outcomes in Patients With Ischemic Cardiomyopathy: 10-Year Follow-Up of the STICH Trial. *JACC Heart Fail*. 2019 Oct;7(10):878-887. doi: 10.1016/j.jchf.2019.04.018. Epub 2019 Sep 11. PubMed PMID: 31521682.

OBJECTIVES: The authors investigated the impact of coronary artery bypass grafting (CABG) on first and recurrent hospitalization in this population.

BACKGROUND: In the STICH (Surgical Treatment for Ischemic Heart Failure) trial, CABG reduced all-cause death and hospitalization in patients with and ischemic cardiomyopathy and left ventricular ejection fraction <35%.

METHODS: A total of 1,212 patients were randomized (610 to CABG + optimal medical

therapy [CABG] and 602 to optimal medical therapy alone [MED] alone) and followed for a median of 9.8 years. All-cause and cause-specific hospitalizations were analyzed as time-to-first-event and as recurrent event analysis.

RESULTS: Of the 1,212 patients, 757 died (62.4%) and 732 (60.4%) were hospitalized at least once, for a total of 2,549 total all-cause hospitalizations. Most hospitalizations (66.2%) were for cardiovascular causes, of which approximately one-half (907 or 52.9%) were for heart failure. More than 70% of all hospitalizations (1,817 or 71.3%) were recurrent events. The CABG group experienced fewer all-cause hospitalizations in the time-to-first-event (349 CABG vs. 383 MED, adjusted hazard ratio [HR]: 0.85; 95% confidence interval [CI]: 0.74 to 0.98; $p = 0.03$) and in recurrent event analyses (1,199 CABG vs. 1,350 MED, HR: 0.78, 95% CI: 0.65 to 0.94; $p < 0.001$). This was driven by fewer total cardiovascular (CV) hospitalizations (744 vs. 968; $p < 0.001$, adjusted HR: 0.66, 95% CI: 0.55 to 0.81; $p = 0.001$), the majority of which were due to HF (395 vs. 512; $p < 0.001$, adjusted HR: 0.68, 95% CI: 0.52-0.89; $p = 0.005$). We did not observe a difference in non-CV events.

CONCLUSIONS: CABG reduces all-cause, CV, and HF hospitalizations in time-to-first-event and recurrent event analyses. (Comparison of Surgical and Medical Treatment for Congestive Heart Failure and Coronary Artery Disease [STICH]; NCT00023595).

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DOI: 10.1016/j.jchf.2019.04.018

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OBJECTIVE: Digastric ridge (DR) is an important landmark to locate facial nerve (FN) and sigmoid sinus for mastoid surgeries and transmastoid approaches. We aim to look for the effect of temporal bone pneumatization on the morphometry of the DR and its relation to the adjoining structures.

METHODS: Temporal bones were harvested from unclaimed cadavers after the approval of the ethical committee. The dissection of the temporal bones was performed under a microscope, and the length of the DR and the distance between the mastoid segment of the FN and the anterior end of DR (FN-DR distance) were measured using a digital caliper. Stata version 14.0 was used to perform the statistical calculations.

RESULTS: Ninety-three temporal bones were microdissected (right:left = 47:46; well pneumatized:poorly pneumatized = 58:35). Mean length of the DR was 17.1 mm and was significantly longer in well-pneumatized bones ($P = .0000$). The mean distance between the anterior end of the digastric ridge and the mastoid part of the facial nerve was 4 mm. The distance was significantly more in well-pneumatized bones.

CONCLUSION: Prominence and the length of the DR, as well as the FN-DR distance, are significantly more in well-pneumatized bones compared to poorly pneumatized bones. This finding has potential surgical implications with reduced risk of injury to the FN resulting from a conspicuous DR in well-pneumatized bones.

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BACKGROUND: Previous epidemiological studies, largely conducted in high-income countries and cross-sectional, have suggested a relatively strong association between exposure to dichlorodiphenyldichloroethylene (DDE), a metabolite of the pesticide dichlorodiphenyltrichloroethane (DDT), and type 2 diabetes. DDT is widely used in India and the prevalence of type 2 diabetes there is increasing, but the association between these factors has not been explored to date.

OBJECTIVE: The objective was to estimate the association of the p,p' isomer of DDE with incident type 2 diabetes in India.

METHODS: A nested case-control study was conducted in a representative prospective cohort of adults from two cities in India. Participants were enrolled in 2010-11 (n=12,271) and followed for annual assessment of chronic diseases including type 2 diabetes. Baseline plasma samples from incident cases of diabetes (n=193) and sex-city-matched controls (n=323) were selected for analysis of p,p-DDE. Odds ratios (OR) and 95% confidence intervals (CI) were estimated using conditional logistic regression.

RESULTS: At baseline, cases had higher p,p-DDE concentrations: geometric mean (95% CI) 330 (273-399) ng/g lipid compared to 223 (189-262) ng/g lipid among controls. Delhi participants had higher p,p-DDE concentrations: 579 (521-643) ng/g lipid compared to 122 (102-145) ng/g lipid in Chennai. In unadjusted models, being in the highest versus lowest quartile of p,p-DDE was associated with a more than doubling of the odds of diabetes: unadjusted OR (95% CI), 2.30 (1.19, 4.43). However, this effect was no longer significant after adjustment for age: adjusted (95% CI), 0.97 (0.46, 2.06).

DISCUSSION: Results suggest that levels of p,p'-DDE in Delhi are exceptionally high, but we did not observe a significant association between p,p-DDE and incident type 2 diabetes. As this is the first study to evaluate this association in India, more studies are needed to inform our understanding of the association in this context, including potential routes of exposure.

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PMCID: PMC6860016 [Available on 2020-12-01]
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In the last two decades, various in vivo MR methodologies have been evaluated for their potential in the study of cancer metabolism. During malignant transformation, metabolic alterations occur, leading to morphological and functional changes. Among various MR methods, in vivo MRS has been extensively used in breast cancer to study the metabolism of cells, tissues or whole organs. It provides biochemical information at the metabolite level. Altered choline, phospholipid and energy metabolism has been documented using proton (1 H),

phosphorus (^{31}P) and carbon (^{13}C) isotopes. Increased levels of choline-containing compounds, phosphomonoesters and phosphodiester in breast cancer, which are indicative of altered choline and phospholipid metabolism, have been reported using *in vivo*, *in vitro* and *ex vivo* NMR studies. These changes are reversed on successful therapy, which depends on the treatment regimen given. Monitoring the various tumor intermediary metabolic pathways using nuclear spin hyperpolarization of ^{13}C -labeled substrates by dynamic nuclear polarization has also been recently reported. Furthermore, the utility of various methods such as diffusion, dynamic contrast and perfusion MRI have also been evaluated to study breast tumor metabolism. Parameters such as tumor volume, apparent diffusion coefficient, volume transfer coefficient and extracellular volume ratio are estimated. These parameters provide information on the changes in tumor microstructure, microenvironment, abnormal vasculature, permeability and grade of the tumor. Such changes seen during cancer progression are due to alterations in the tumor metabolism, leading to changes in cell architecture. Due to architectural changes, the tissue mechanical properties are altered; this can be studied using magnetic resonance elastography, which measures the elastic properties of tissues. Moreover, these structural MRI methods can be used to investigate the effect of therapy-induced changes in tumor characteristics. This review discusses the potential of various *in vivo* MR methodologies in the study of breast cancer metabolism.

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72: Jha P, Manjunath N, Singh J, Mani K, Garg A, Kaur K, Sharma MC, Raheja A, Suri A, Sarkar C, Suri V. Analysis of PD-L1 expression and T cell infiltration in different molecular subgroups of diffuse midline gliomas. *Neuropathology*. 2019 Dec;39(6):413-424. doi: 10.1111/neup.12594. Epub 2019 Oct 17. PubMed PMID: 31625205.

Diffuse midline gliomas (DMGs) are rare and devastating tumors with limited therapeutic options. Programmed death-ligand 1 (PD-L1) expression represents a potential predictive biomarker for immunotherapy. One hundred and twenty-six DMGs (89 adult and 37 pediatric) were assessed for immune profile (PD-L1, cluster of differentiation (CD3, CD8) and genetic markers (mutation in 27th amino acid of histone H3 (H3K27M), alpha thalassemia/mental retardation syndrome X-linked (ATRX), isocitrate dehydrogenase 1 (IDH1), p53) by immunohistochemistry. Sanger sequencing was done for IDH1 and H3K27M. The thalamus was the commonest site. Four molecular subgroups of DMGs were identified. H3K27M mutation was more frequent in children ($P = 0.0001$). The difference in median overall survival (OS) was not significant in any of the four molecular subgroups ($P > 0.05$). PD-L1 expression was significantly higher in H3K27M/IDH1 double-negative adult glioblastomas (GBMs) ($P = 0.002$). Strong PD-L1 expression was more frequent in grade IV tumors and thalamic location, although the difference was not significant ($P = 0.14$ and $P = 0.19$ respectively). Positive PD-L1 expression was significantly associated with high tumor-infiltrating lymphocytes count ($P < 0.05$). There was no significant difference in median OS in PD-L1-positive versus negative cases among four genetic subgroups ($P > 0.05$). On univariate analysis, there was no direct correlation of PD-L1 with any genetic alteration, except H3K27M mutation ($P = 0.01$). CD3 infiltration was similar in both adults and pediatric ages (84.3% and 78.4%, respectively) while CD8 expression was significantly greater in adults compared to children (74.1% vs 37.8%, $P = 0.0001$). This is the first comprehensive analysis highlighting molecular and immune profiles of DMGs. Despite molecular and clinicopathological diversity, overall survival in DMGs remains dismal. Multicentric studies with larger numbers

of cases should be undertaken for stratifying DMGs according to their age, immune and molecular profiles, to develop effective immunotherapies.

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PMID: 31625205

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BACKGROUND: The association of depression and epilepsy is thought to be bidirectional. The present study aimed to evaluate the prevalence of depression in patients on antiepileptic drugs (AEDs) and factors affecting it.

METHODS: In this preliminary cross sectional study, patients at epilepsy clinic of a tertiary care centre were studied for occurrence of depression, using Hospital Anxiety and Depression Scale (HADS-D) and Patient Health Questionnaire (PHQ-2) scales. Correlation analysis was carried out to determine the factors associated with presence of depression in these patients.

RESULTS: A total of 12 AEDs (maximum 5 per patient including older and newer) were prescribed to 933 patients in different treatment regimens over a period of 3 years. The median age of the patients was 22 years (10-77) and among them 63.5% were men. Mild and clinically relevant depression occurred in 279 (29.9%) and 223 (23.9%) patients, respectively. Mean HADS-D and PHQ-2 score was significantly higher with polytherapy as compared to monotherapy ($p < 0.001$). Patients on levetiracetam exhibited significantly higher HADS-D score in comparison to phenytoin ($p < 0.001$), carbamazepine ($p < 0.001$) and sodium valproate ($p < 0.05$). However, there was no significant difference in PHQ score among patients on monotherapy of different AEDs. Multivariate regression analysis suggested correlation between depression and seizure frequency, total number of AEDs and their load ($p < 0.001$).

CONCLUSION: Depressive symptoms were found to be present in more than half of the patients with epilepsy which require detailed work up for depression. Levetiracetam was found to be associated with a higher incidence of subclinical depression which needs further investigation.

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DOI: 10.1016/j.pharep.2019.04.021

PMID: 31398575

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CTLA-4 (cytotoxic T-lymphocyte-associated protein-4) or CD152 is an inhibitory receptor expressed constitutively on CD4⁺ CD25⁺ T regulatory lymphocytes and transiently on activated CD4⁺ and CD8⁺ T lymphocytes. Its inhibitory function promotes long-lived anergy in immune cells and prevents autoimmunity. Therefore, it plays a crucial role in T cell-mediated autoimmunity, and thus in susceptibility to autoimmune diseases, including systemic lupus erythematosus (SLE). It is encoded by CTLA4 gene in humans. A49G polymorphism at position +49 of CTLA4 gene is the only polymorphism which changes amino acid sequence from alanine to threonine in the leader sequence, which may affect the function of CTLA-4. Association of CTLA4 polymorphisms with SLE has been investigated in

several reports in different ethnic populations from different countries, which have shown highly inconsistent findings. In this review, we have compiled previous studies which have reported the association of CTLA4 A49G polymorphism in SLE and its geographical distribution.

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DOI: 10.1136/jclinpath-2019-206013
PMID: 31340988 [Indexed for MEDLINE]

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Mesenchymal stem cells (MSCs) are multipotent cells which hold immense potential in translational research as a novel treatment modality. In recent years, MSCs isolated from various tissues have been used in several clinical trials for the treatment of cardiac injury caused by permanent myocardial loss. However, a better MSCs source and an optimum inducer for in vitro cardiac differentiation are still far reaching and unexplored. The aim of the study was to compare the ability and efficiency of differentiation of MSCs isolated from bone marrow (BM-MSCs) and adipose tissue (ADSC) into cardiomyocyte-like cells to aid translational research. To fulfill this aim, freshly isolated BM-MSCs and ADSCs were differentiated into cardiomyocytes using 5-Azacytidine (6 μ M) and TGF- β 1 (25 ng/ml). These two differentiation protocols were compared on the basis of morphological, transcriptional, translational and functionality analysis. Both tissue specific MSCs, ADSCs and BM-MSCs, have similar surface marker profile and population doubling time. In both the treatment regimes, BM-MSCs and ADSCs showed morphological changes like flattening of cells and myotube formation in concurrence with structure and multinucleation, with early sign of differentiation in ADSCs. Further, the expression of cardiac specific markers including myosin light chain-2v (Mlc-2v), cardiac troponin I (cTnI), and sarco/endoplasmic reticulum Ca²⁺-ATPase (SerCa²⁺) were higher in AD-TGF β 1 group, both at transcriptional and translational level. During functionality analysis by KCl stimulation, increased intracellular calcium fluorescence was observed in AD-TGF β 1 group as compared to others. Thus, ADSCs proved to be a better choice for stem cell therapy in cardiovascular diseases when induced with TGF- β 1.

DOI: 10.1007/s11010-019-03570-3
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Immune parameters show characteristic normal baseline levels and variance in the population. We characterised the degree of inter-individual and within-individual variation over one-year time period in 33 immune cell subsets by flow cytometry

in peripheral blood mononuclear cells from 43 healthy young adult volunteers. Our analysis revealed that immune subsets that showed low variability between individuals also showed low short-term fluctuations within-individuals, as well as concordance in siblings. However, when baseline levels and degree of fluctuation were considered together, individuals failed to cluster into discreet groups. Together, the data reveal complex inter-relationships between immune subsets in individuals, and provide insights into the observed heterogeneity between individuals and between multiple immune subsets.

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Cutaneous adverse effects are one of the most frequently observed adverse reactions with anticancer agents. This has only intensified with newer targeted and immunologic agents that present with a wide array of drug toxicities and skin reactions. The spectrum ranges from benign, localized dermatoses to generalized, life-threatening cutaneous toxicities. Herein, the authors review the cutaneous adverse effects observed with conventional chemotherapy as well as targeted agents, including the emerging immune checkpoint inhibitors, which have been revolutionary in the treatment of many malignancies.

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DOI: 10.1016/j.det.2019.05.013
PMID: 31466595

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Long QT syndrome (LQTS) is a myocardial repolarisation disorder caused by cardiac ion channelopathy and one of its common presentations is recurrent syncope. This reduced repolarisation reserve in LQTS can be unmasked by perioperative factors like electrolyte imbalance, drugs, hypothermia and changes in cardiac autonomic tone. We report the anaesthetic management of left thoracoscopic sympathectomy in a 5-year-old child with LQTS and epicardial pacemaker in situ. It is very challenging to isolate the lung on one hand and prevent the predisposition to torsadogenic potential on the other.

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DOI: 10.4103/ija.IJA_180_19
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Purpose: To evaluate the clinical factors associated with repeat Descemet stripping automated endothelial keratoplasty (DSAEK) or penetrating keratoplasty (PKP) in cases of failed DSAEK.

Methods: Retrospective observational study of cases with failed DSAEK admitted to our center for a repeat keratoplasty over 5 years (January 2013-December 2017) was undertaken. Demographic and perioperative details of all cases and type of repeat keratoplasty were recorded. Logistic regression analysis was performed to analyze the factors affecting the type of repeat keratoplasty.

Results: total of 94 eyes with failed DSAEK were evaluated. Repeat DSAEK was performed in 66% and PKP in 34% of cases. Significantly increased odds for requiring PKP were observed in association with stromal scarring [odds ratio (OR) = 2.9, P = 0.018], trainee surgeons (OR = 4.05, P = 0.008), intraoperative complications (OR = 4.58, P = 0.003), scleral fixated intraocular lens or anterior chamber intraocular lens in situ (OR = 33.8, P < 0.001), secondary glaucoma (OR = 3.02, P = 0.015), peripheral anterior synechiae (OR = 8.6, P < 0.001), preoperative corneal thickness (OR = 1.01, P < 0.001), time to primary surgery (OR = 1.03, P = 0.03), post-DSAEK host thickness (OR = 1.01, P < 0.001), and time interval from graft failure to re-graft (OR = 1.18, P < 0.001). All eyes with congenital hereditary endothelial dystrophy, bee-sting-induced corneal decompensation, Axenfeld-Rieger syndrome, and multiple failed grafts underwent secondary PKP. All cases (nine eyes) that required surgical intervention for secondary glaucoma underwent secondary PKP (P < 0.001).

Conclusion: Repeat DSAEK is feasible in up to two-third of cases of failed DSAEK. A PKP is required in one-third of cases, and various preoperative, intraoperative and postoperative factors are associated with unsuitability for repeat DSAEK.

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PMID: 31546486

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A single nucleotide change (C to T) in HLA-B*38:02:01 results in the novel allele, HLA-B*38:02:01:02.

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One nucleotide substitution in codon 127 of HLA-DQB1*03:01:01:07 results in the novel allele, HLA-DQB1*03:404.

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One nucleotide substitution (A>T) in intron 1 of HLA-DPA1*02:01:01:02 results in the novel allele, HLA-DPA1*02:01:01:12.

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One nucleotide substitution (C>T) in codon 228 of HLA-C*04:06:01 results in the novel allele, HLA-C*04:06:03.

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DOI: 10.1111/tan.13715
PMID: 31589367

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One nucleotide substitution (G>A) in codon 41 of HLA-C*04:03:01:01 results in the

novel allele, HLA-C*04:400.

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DOI: 10.1111/tan.13720

PMID: 31589363

90: Keppen C, Sharma A, Gautam SK, Khamo V, Kanga U. Recognition of the novel HLA-A*11:01:01:25 allele in the tribal population of Nagaland, North-East India. *HLA*. 2019 Dec;94(6):515-517. doi: 10.1111/tan.13704. Epub 2019 Oct 7. PubMed PMID: 31576659.

One nucleotide change (G>A) at intron 1 of HLA-A*11:01:01:01 results in the novel allele, HLA-A*11:01:01:25.

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DOI: 10.1111/tan.13704

PMID: 31576659

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A single nucleotide change (G to T) in HLA-B*13:01:01:01 results in the novel allele, HLA-B*13:01:01:03.

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DOI: 10.1111/tan.13700

PMID: 31574587

92: Khandelwal P, Thomas CC, Rathi BS, Hari P, Tiwari AN, Sinha A, Bagga A. Membrane-filtration based plasma exchanges for atypical hemolytic uremic syndrome: Audit of efficacy and safety. *J Clin Apher*. 2019 Oct;34(5):555-562. doi: 10.1002/jca.21711. Epub 2019 Jun 7. PubMed PMID: 31173399.

BACKGROUND: While complement blockade with eculizumab is recommended as first-line therapy of atypical hemolytic uremic syndrome (aHUS), plasma exchanges (PEX) remain the chief option for anti-factor H (FH) antibody associated disease and when access to eculizumab is limited.

METHODS: We reviewed adverse events (AEs) and adverse outcomes (eGFR

<30mL/min/1.73m² or death), in all patients with aHUS managed with membrane-filtration based PEX at one tertiary care center over 5.5 years.

RESULTS: During January 2013 to June 2018, 109 patients with aHUS (74 with antibodies to FH), aged median (range) 7.6 (0.5-18) year weighing 22.1 (6-90) kg, underwent 2024 sessions of PEX. AE, in 12.1% patients, were usually self-limiting and included chills (5.5%), vomiting/abdominal pain (3.3%), hypotension (1.6%), urticaria (1.5%), seizures (0.2%), hypocalcemia (0.2%), and hemorrhage (0.1%); plasma hypersensitivity and severe reactions were rare. Rate of catheter-related infections was 1.45/1000 catheter-days. Filter reuse (OR 1.69; 95% CI 1.26-2.26; P<.001) and >20 sessions of PEX/patient (OR 1.99; 95% CI 1.27-3.10; P = .002) were independently associated with adverse events; infusion of IV calcium gluconate during PEX was protective (OR 0.26; 95% CI 0.16-0.43; P<.001). Hematological remission was achieved in 96.3% patients after 6 (5-8) PEX sessions; 80.8% and 89.6% patients were dialysis independent by one and 3 months, respectively.

CONCLUSIONS: PEX is safe and associated with satisfactory short-term outcomes in children with aHUS. Prolonged PEX and filter-reuse are associated with complications.

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DOI: 10.1002/jca.21711

PMID: 31173399

93: Khanna K, Agarwala S, Bakhshi S, Srinivas M, Jana M, Devasenathipathy K, Bajpai M, Bhatnagar V. Need for urodynamic evaluation as a regular follow-up tool in assessment of long-term urological outcomes in patients with sacrococcygeal teratoma. *J Pediatr Surg.* 2019 Oct;54(10):2107-2111. doi: 10.1016/j.jpedsurg.2018.11.020. Epub 2018 Dec 29. PubMed PMID: 30686521.

AIM: To assess the long-term urologic outcomes in follow-up of patients of sacrococcygeal teratoma (SCT) using urodynamic study (UDS) in addition to clinical and radiologic evaluation.

METHODS: A prospective study of clinical, radiological and urodynamic evaluation in patients with SCT who underwent resection between January 2002-June 2015 and were followed up till January 2016 was conducted.

RESULTS: Total 57 patients, 42 (73.7%) females and 15 (26.3%) males with 35 (62.4%) following treatment for benign and 22 (38.5%) for malignant disease were included. Twenty-eight of 57 (49.12%) had urological problems. Clinical complaints in 21 (36.8%) patients included stress urinary incontinence-14 (66.7%), enuresis-9 (42.9%), and poor stream or dribbling of urine-6 (28.6%). Eight of 51 patients (15.7%) had abnormal ultrasound findings, which included contracted, trabeculated thick walled bladder (3), bilateral hydronephrosis (3) and significant post void residue (PVR) (6). Seven of 57 underwent micturating cystourethrogram (MCU), 5 had an abnormal report [significant PVR (4), small trabeculated bladder (3), reflux (2) and large capacity bladder (1)]. Urodynamic study was done in 27 patients, 18/27 (66.7%) had abnormalities. Six patients without any clinical or ultrasonographic abnormalities had abnormal UDS. Total 28 (49.12%) had urological comorbidities. Three patients had overactive bladder, five dysfunctional voiding, one underactive bladder and one had giggle incontinence. Children were managed by behaviour therapy and pharmacotherapy.

CONCLUSION: Urodynamic evaluation could detect abnormalities in patients who had no urinary complaints or abnormality on ultrasound. The abnormalities have a potential for progressive upper tract damage. Urodynamics should be an integral part of urological surveillance in patients operated for SCT.

TYPE OF STUDY: Prognostic study.

LEVEL OF EVIDENCE: Level II (Prospective cohort study).

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DOI: 10.1016/j.jpedsurg.2018.11.020

PMID: 30686521

94: Khetan K, Baloda V, Sahoo RK, Vishnubhathla S, Yadav R, Saraya A, Sharma A, Gupta SD, Das P. SPARC expression in desmoplastic and non desmoplastic pancreatic carcinoma and cholangiocarcinoma. *Pathol Res Pract.* 2019 Dec;215(12):152685. doi: 10.1016/j.prp.2019.152685. Epub 2019 Oct 21. PubMed PMID: 31727501.

BACKGROUND: The pancreatobiliary carcinomas are characterized by presence of desmoplastic stroma. Overexpression of secreted protein acid and rich in cysteine (SPARC), a matrix producing agent has been documented in pancreatic ductal adenocarcinomas, with survival benefits. This study was targeted to see if SPARC

expression in pancreatobiliary carcinomas is responsible for stromal desmoplasia and its prognostic significance.

METHODS: In this retrospective study 48 cases of pancreatic cancer and 27 cases of cholangiocarcinoma were analyzed. The expression pattern of SPARC and vascular endothelial growth factor (VEGF) (angiogenic factors) was evaluated by immunohistochemistry on formalin fixed paraffin embedded tissues.

Immunoreactivity was scored semi quantitatively based on stain intensity and stain distribution. SPARC expression was correlated with tumor histology, stromal desmoplasia, VEGF expression, various histological parameters and overall survival in patients. Real time polymerase chain reaction was performed in few cases to validate the immunohistochemistry expression pattern.

RESULTS: SPARC expression was high in peritumoral stroma in pancreatic carcinoma than in pancreatic controls; however, SPARC expression pattern was not grossly different in desmoplastic and non-desmoplastic pancreatobiliary carcinomas and in cholangiocarcinomas. No definite correlation was noted between SPARC expression and histological markers of severity and overall survival data.

CONCLUSIONS: The relevance of SPARC expression in pancreato-biliary carcinomas though may still be important for therapeutic decision making, it is not responsible for peritumoral stromal desmoplasia in these tumors and it does not have any significant prognostic implication.

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DOI: 10.1016/j.prp.2019.152685

PMID: 31727501

95: Khokhar S, Dhull C. Commentary: Understanding angiogenic factors in pathogenesis of persistent fetal vasculature. *Indian J Ophthalmol.* 2019 Oct;67(10):1622-1623. doi: 10.4103/ijo.IJO_1156_19. PubMed PMID: 31546494; PubMed Central PMCID: PMC6786143.

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Three techniques to avoid malalignment in proximal femoral fractures managed with cephalomedullary nails, have been described. Issues related to rotational mismatch at fracture site, central placement of lag screw in femoral head neck fragment and limb rotation restoration have been addressed. We believe these simple techniques can help in minimizing malreduction in proximal femur fractures and result in favourable outcomes.

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DOI: 10.1016/j.jcot.2018.11.008

PMCID: PMC6823690 [Available on 2020-10-01]

PMID: 31695290

97: Kumar A, Padhy SK, Dhiman R, Kumar P, Parekh T, Varshney T. Macular hole following phakic intraocular lens implantation and its management. *Indian J Ophthalmol.* 2019 Oct;67(10):1758-1760. doi: 10.4103/ijo.IJO_126_19. PubMed PMID: 31546556; PubMed Central PMCID: PMC6786197.

A 28-year-old male presented to retina clinic with complains of blurring and distortion in right eye for past 1 week. There was history of implantation of

phakic intraocular lens (pIOL) bilaterally 4 months back. Ophthalmic examination revealed a full-thickness macular hole in the right eye. Pars plana vitrectomy with inverted internal limiting membrane flap was planned. Post-operatively, patient had a good gain in vision (20/40) with closure of the hole. Macular hole is an unusual complication of pIOL. A detailed pre-operative fundus screening is indispensable. Early presentation and timely intervention can optimize the visual outcome.

DOI: 10.4103/ijo.IJO_126_19

PMCID: PMC6786197

PMID: 31546556

98: Kumar C, Jha CK, Bichoo RA, Yadav SK. Wide angled 'V' is the perfect disposition of a TIVAD catheter when right internal jugular vein is cannulated to gain central access. *Gastroenterol Rep (Oxf)*. 2019 Jul 15;7(5):374-375. doi: 10.1093/gastro/goz027. eCollection 2019 Oct. PubMed PMID: 31687159; PubMed Central PMCID: PMC6821437.

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Aims: The standard of care for carcinoma cervix stage IB2-IVA is five fractions per week of radiotherapy (RT) with concurrent cisplatin. We compared the standard treatment with six fractions per week of RT with concurrent Cisplatin to see whether the later had improved survival outcomes with comparable toxicities. **Settings and Design:** 46 patients of carcinoma cervix with stage IB2-IVA were randomized into two arms.

Materials and Methods: Study arm: 46 Gy/23 fractions/26 days, 6 fractions/week with injection CDDP 40 mg/m² and Control arm: 46 Gy/23 fractions/31 days, 5 fractions/week with injection Cisplatin 40mg/m². Patients in both the arms received LDR brachytherapy to a dose of 29 Gy at point A.

Statistical Analysis Used: The primary end points were disease-free survival (DFS) and overall survival (OS). Compliance to treatment and treatment toxicities were the secondary end points. P value ≤ 0.05 were considered significant.

Results: The study was carried out during June, 2014-April, 2015. Statistical analysis was done in May, 2019. Of 46 patients, 39 patients completed the treatment. The study and control arms had 17 and 22 patients, respectively. Median follow-up period is 45 months (range: 1-54 months). 3-year DFS rates and OS was 69.5% vs. 72.7% (P = 0.73) and 63% vs. 68% (P = 0.45) in study and in control arm, respectively. There was no significant difference in acute and late radiation toxicities between two arms.

Conclusion: Chemoradiotherapy with six fractions per week seems feasible and equally efficacious in terms of survival outcomes and toxicity profile. Further prospective randomized controlled study is required to prove the merit of altered fractionation with concurrent cisplatin.

DOI: 10.4103/jcrt.JCRT_698_19

PMID: 31898663

100: Kumar L, Narwal A, Kumar M, Kaushal S. Primary clear-cell urothelial carcinoma of urinary bladder: a not-so-clear entity with review of literature. *BMJ Case Rep*. 2019 Oct 23;12(10). pii: e231192. doi: 10.1136/bcr-2019-231192. PubMed PMID: 31645400.

Primary clear-cell urothelial carcinoma (CCUC) is an uncommon type of urothelial cancer with only 16 cases reported in published literature. Due to the rarity of the tumour, its clinical and prognostic values have not been clearly understood. We present one such rare clinical diagnosis in a 60-year-old man who underwent radical cystectomy (RC) with ileal conduit for urinary bladder cancer. Histopathology showed features of high-grade CCUC infiltrating the muscularis propria. Immunohistochemistry revealed diffuse immunopositivity of pan cytokeratin (CK), GATA3, P40, CK7 but was immunonegative for CD10 and vimentin. Our patient expired 4 months after diagnosis. CCUC has recently been included in the WHO 2016 classification of urothelial tumours. Most of the patients present with poor prognosis. Accurate diagnosis and recognition of this unusual variant are essential for better patient management and prognosis. Early RC seems to be the preferred way of management.

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DOI: 10.1136/bcr-2019-231192
PMID: 31645400

101: Kumar M, Iyer VK, Mathur S, Barwad A. Granular cell ameloblastoma-diagnosis on aspiration cytology. *Diagn Cytopathol*. 2019 Oct;47(10):1120-1122. doi: 10.1002/dc.24306. Epub 2019 Aug 21. PubMed PMID: 31433575.

102: Kumar P, Das G, Bhaskar S. Mycobacterium indicus pranii therapy induces tumor regression in MyD88- and TLR2-dependent manner. *BMC Res Notes*. 2019 Oct 7;12(1):648. doi: 10.1186/s13104-019-4679-0. PubMed PMID: 31590685; PubMed Central PMCID: PMC6781299.

OBJECTIVES: Mycobacterium indicus pranii (MIP) is an atypical mycobacterium species with potent antitumor efficacy. Macrophages and dendritic cells (DCs) are antigen-presenting cells, playing key roles in the activation of antitumor immunity. We have previously shown the potent activation of macrophages and DCs by MIP, which is mediated by MyD88-TLR2 signaling axis. In the present study, we further examined the role of MyD88 and TLR2 in MIP-mediated tumor regression. **RESULTS:** Wild-type and MyD88^{-/-} mice were implanted with B16F10 tumor cells, treated with MIP or phosphate-buffered saline (PBS) and monitored for tumor growth. As expected, MIP therapy led to significant tumor regression in wild-type mice. However, antitumor efficacy of MIP was lost in MyD88^{-/-} animals. Both PBS-treated (control) and MIP-treated MyD88^{-/-} mice developed tumors with comparable volume. Since MyD88 relays TLR engagement signals, we analyzed the antitumor efficacy of MIP in TLR2^{-/-} and TLR4^{-/-} mice. It was observed that MIP therapy reduced tumor burden in wild-type and TLR4^{-/-} mice but not in TLR2^{-/-} mice. Tumor volume in MIP-treated TLR2^{-/-} mice were comparable with those in PBS-treated wild-type animals. These results implicated the MyD88-TLR2 signaling axis in the antitumor efficacy of MIP.

DOI: 10.1186/s13104-019-4679-0
PMCID: PMC6781299
PMID: 31590685

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104: Kumari A, Diwaker P, Gogoi P, Arora VK, Garg PK, Pandey R. Primary extraneural ependymoma of the broad ligament: A rare entity. *J Cancer Res Ther.* 2019 Oct-Dec;15(6):1398-1401. doi: 10.4103/jcrt.JCRT_672_17. PubMed PMID: 31898680.

Extraneural broad ligament ependymoma is a rare entity. Herein, we present a case of unusually large broad ligament ependymoma in a 32-year-old female with pain and lump in the lower abdomen. Contrast-enhanced computed tomography abdomen revealed multiple heterogeneously enhancing pelvic masses with lobulated surface in bilateral adnexa along with multiple peritoneal nodules. Her relevant serum tumor markers were unremarkable. Core biopsy revealed tumor composed of elongated cells arranged predominantly in true and pseudoperivascular rosettes. The histopathological differentials included ependymoma, primitive neuroectodermal tumor, and teratoma with neural differentiation. Results of immunohistochemistry favored the diagnosis of ependymoma. Surgical exploration and optimal cytoreduction were done, and a final diagnosis of primary broad ligament ependymoma with peritoneal metastasis was made. The patient received six cycles of adjuvant chemotherapy and is doing well after 8-month follow-up. The present case highlights the diagnostic workup and management of a rare and an unusually large broad ligament ependymoma with peritoneal metastasis.

DOI: 10.4103/jcrt.JCRT_672_17
PMID: 31898680

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BACKGROUND: Allergic bronchopulmonary aspergillosis (ABPA) may be a risk factor for poorly controlled asthma in children. The studies regarding prevalence and risk factors of ABPA in children with poorly controlled asthma are limited in number.

OBJECTIVES: To determine prevalence and risk factors of ABPA and aspergillus sensitization (AS) in children with poorly controlled asthma.

METHODS: In this prospective cross-sectional study from a tertiary care center in India, we enrolled asthmatic children 5-15 years of age with poorly controlled asthma. We did the following investigations: spirometry, skin prick test, serum total immunoglobulin E (IgE), aspergillus-specific IgE and immunoglobulin G, serum precipitin for Aspergillus, absolute eosinophil count, chest X-ray and high-resolution computed tomography of the chest. ABPA and AS were diagnosed as per the recently proposed criteria.

RESULTS: We enrolled 106 children [boys 72 (67.9%); mean age of 10.2 ± 2.6 years] with poorly controlled asthma. The prevalence of ABPA and AS were 11.3% (95% CI, 5.2-17.5%) and 61.3% (95% CI, 52.0-70.7%), respectively. The presence of brownish sputum was significantly more in ABPA compared with non-ABPA patients (33.3 vs. 4.2%, $p = 0.002$). The age, gender, allergic rhinitis and gastroesophageal reflux were not significantly different in ABPA compared with non-ABPA patients.

CONCLUSION: The prevalence of ABPA and AS was 11.3 and 61.3%, respectively in children with poorly controlled asthma. We could not find any risk factors for ABPA except that the presence of brownish sputum was more in children with ABPA. Spirometry parameters were not significantly different in ABPA compared with non-ABPA patients.

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DOI: 10.1093/tropej/fmz066

PMID: 31580457

106: Kumari K, Longchar M, Gunathilaka G, Narange P, Aggarwal S, Arava S. Type I pleuropulmonary blastoma presenting as congenital pulmonary airway malformation: A report of two cases. *Indian J Pathol Microbiol.* 2019 Oct-Dec;62(4):595-598. doi: 10.4103/IJPM.IJPM_713_18. PubMed PMID: 31611448.

Pleuropulmonary blastoma (PPB) is a rare aggressive intrathoracic tumor which is believed to originate from embryonic uncommitted lung mesenchymal cells, which are important for developing the lung. Type I PPB is cystic, type II is cystic and solid, while type III is predominantly solid. Diagnosing type I PPB is a challenge for both radiologists as well as pathologists. Owing to its purely cystic nature, type I PPB it is often mistaken for unrelated entities such as congenital pulmonary airway malformation and congenital lobar emphysema which delays surgical intervention. Here, we report two such cases presenting clinically and radiologically as congenital pulmonary airway malformation. On histology, a final diagnosis of type I pleuropulmonary blastoma was made. Thereafter, chemotherapy was administered following complete surgical excision.

DOI: 10.4103/IJPM.IJPM_713_18

PMID: 31611448

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Background and Objectives Suboptimal management of postcraniotomy pain causes sympathetic and hemodynamic perturbations, leading to deleterious effects on the neurological system and overall patient outcome. Opioids are the mainstay of postoperative pain management but have various problems when given in high doses, or for prolonged durations in neurosurgical patients. The ideal method of pain control following craniotomy generally relies on a combination of various drugs. Oral pregabalin may be an attractive alternative in these patients. Materials and Methods Sixty, American Society of Anesthesiologists class I and II patients posted for elective supratentorial craniotomy, aged 18 and 60 years, were randomly assigned into three groups of 20 each to receive oral placebo (Group A), pregabalin 75 mg (Group B), or pregabalin 150 mg (Group C) before the induction of anesthesia. At the end of the surgery, patient-controlled analgesia was started with intravenous fentanyl. Visual analog scale (VAS) score was recorded every 2 hours for 24 hours, along with total postoperative fentanyl requirement. Results There were no differences in sex, duration of surgery or anesthesia and total intraoperative fentanyl administered among the three groups. The median postoperative VAS score (Group A-18.0, Group B-20, and Group C-22.0; $p = 0.63$) was similar in all the groups. However, postoperative fentanyl requirement over 24 hours was least in the group that received 150 mg pregabalin (Group A-190 μg , Group B-240 μg , and Group C-100 μg ; $p = 0.03$). Conclusions Even though pain scores were not significantly different, patients receiving 150 mg oral pregabalin required the least amount of postoperative opioids.

DOI: 10.1055/s-0039-3399490

PMCID: PMC6906094

PMID: 31831983

108: Lung T, Jan S, de Silva HA, Guggilla R, Maulik PK, Naik N, Patel A, de Silva AP, Rajapakse S, Ranasinghe G, Prabhakaran D, Rodgers A, Salam A, Selak V, Stepien S, Thom S, Webster R, Lea-Laba T; TRIUMPH Study Group. Fixed-combination,

low-dose, triple-pill antihypertensive medication versus usual care in patients with mild-to-moderate hypertension in Sri Lanka: a within-trial and modelled economic evaluation of the TRIUMPH trial. *Lancet Glob Health*. 2019 Oct;7(10):e1359-e1366. doi: 10.1016/S2214-109X(19)30343-2. Epub 2019 Aug 30. PubMed PMID: 31477545.

BACKGROUND: Elevated blood pressure incurs a major health and economic burden, particularly in low-income and middle-income countries. The Triple Pill versus Usual Care Management for Patients with Mild-to-Moderate Hypertension (TRIUMPH) trial showed a greater reduction in blood pressure in patients using fixed-combination, low-dose, triple-pill antihypertensive therapy (consisting of amlodipine, telmisartan, and chlorthalidone) than in those receiving usual care in Sri Lanka. We aimed to assess the cost-effectiveness of the triple-pill strategy.

METHODS: We did a within-trial (6-month) and modelled (10-year) economic evaluation of the TRIUMPH trial, using the health system perspective. Health-care costs, reported in 2017 US dollars, were determined from trial records and published literature. A discrete-time simulation model was developed, extrapolating trial findings of reduced systolic blood pressure to 10-year health-care costs, cardiovascular disease events, and mortality. The primary outcomes were the proportion of people reaching blood pressure targets (at 6 months from baseline) and disability-adjusted life-years (DALYs) averted (at 10 years from baseline). Incremental cost-effectiveness ratios were calculated to estimate the cost per additional participant achieving target blood pressure at 6 months and cost per DALY averted over 10 years.

FINDINGS: The triple-pill strategy, compared with usual care, cost an additional US\$9.63 (95% CI 5.29 to 13.97) per person in the within-trial analysis and \$347.75 (285.55 to 412.54) per person in the modelled analysis. Incremental cost-effectiveness ratios were estimated at \$7.93 (95% CI 6.59 to 11.84) per participant reaching blood pressure targets at 6 months and \$2842.79 (-28.67 to 5714.24) per DALY averted over a 10-year period.

INTERPRETATION: Compared with usual care, the triple-pill strategy is cost-effective for patients with mild-to-moderate hypertension. Scaled up investment in the triple pill for hypertension management in Sri Lanka should be supported to address the high population burden of cardiovascular disease.

FUNDING: Australian National Health and Medical Research Council.

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109: Madaan P, Jauhari P, Chakrabarty B, Gulati S. Jeavons syndrome in a family with GLUT1-deficiency syndrome. *Seizure*. 2019 Oct;71:158-160. doi: 10.1016/j.seizure.2019.07.011. Epub 2019 Jul 15. PubMed PMID: 31352161.

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Metachromatic leukodystrophy (MLD) is a rare sphingolipid storage disorder caused by arylsulfatase A (ARSA) deficiency, resulting in central and peripheral demyelination. However, an uncommon form of MLD caused by saposin B deficiency is also described (around 10 mutations reported till date). MLD is a systemic

disorder affecting the central and peripheral nervous system, gall bladder, and kidneys. Acute flaccid paralysis as the initial clinical presentation is previously known in ARSA-deficient MLD. Hereby, we report a child with acute flaccid paralysis with brain magnetic resonance imaging showing nonspecific periventricular leukodystrophy. He had progressive cognitive decline with gall bladder polyposis. ARSA levels were within normal limits. Leukodystrophy gene panel revealed a homozygous pathogenic deletion (Lys227del variant) in prosaposin (PSAP) gene. Hence, a final diagnosis of saposin B-deficient MLD was established. The index case highlights the importance of clinical and electrophysiological clues in the diagnosis of such atypical presentations of MLD.

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PMID: 31319425

111: Madasu S, Malhotra S, Kant S, Sagar R, Mishra AK, Misra P, Ahamed F. Anxiety Disorders among Adolescents in a Rural Area of Northern India using Screen for Child Anxiety-Related Emotional Disorders Tool: A Community-based Study. *Indian J Community Med.* 2019 Oct-Dec;44(4):317-321. doi: 10.4103/ijcm.IJCM_359_18. PubMed PMID: 31802792; PubMed Central PMCID: PMC6881902.

Background: Anxiety disorders are the most frequent mental disorders encountered in childhood and adolescent years. The number of epidemiological studies done in this area within India is limited.

Objectives: We determined the prevalence of anxiety disorders among adolescents in a rural community of Ballabgarh block, district Faridabad, Haryana.

Secondarily, we also assessed sociodemographic and other factors associated with anxiety disorders among adolescents.

Materials and Methods: This community-based cross-sectional study was conducted among 729 adolescents (10-19 years). Screen for Child Anxiety-Related Emotional Disorders tool was used for assessing prevalence and type of anxiety disorders. Sociodemographic and personal factors were included in the logistic regression multivariable model to establish associations. Adjusted odds ratios (AOR) along with 95% confidence intervals (CI) are computed.

Results: The prevalence of anxiety disorders among adolescents was (22.7%; 95% CI: 19.7-26.0). Girls (27.6%) had higher prevalence than boys (18.3%) ($P < 0.01$). Social anxiety disorder (14.3%; 95% CI: 11.7-16.9) was the most common form of anxiety disorder. Female sex (AOR 1.8; 95% CI 1.2-2.6; $P < 0.01$), lower-middle socioeconomic status (AOR 1.96; 95% CI 1.2-3.1; $P < 0.01$), and presence of stressful event within the past 1-year (AOR 2.48; 95% CI: 1.12-5.06; $P = 0.01$) were found to be associated with the presence of anxiety disorders.

Conclusions: Anxiety disorders are common among adolescents in rural settings of India. Tackling them will require appropriate health systems response. Adequate interventions should be incorporated at primary care level to address the mental health concerns of adolescents.

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PMCID: PMC6881902

PMID: 31802792

112: Magoon R, Choudhury A, Sahoo S, Malik V. Steroids for adult cardiac surgery: The debate echoes on. *J Anaesthesiol Clin Pharmacol.* 2019 Oct-Dec;35(4):560-562. doi: 10.4103/joacp.JOACP_268_19. PubMed PMID: 31920249; PubMed Central PMCID: PMC6939573.

113: Magoon R, Choudhury A. Opioid free anesthesia: is it too early to bid adieu? *Can J Anaesth.* 2019 Oct;66(10):1268-1269. doi: 10.1007/s12630-019-01446-0. Epub 2019 Aug 6. PubMed PMID: 31388837.

114: Magoon R, Makhija N, Das D. Vasoplegic syndrome after cardiac surgery: Better the devil you know! *J Card Surg.* 2019 Dec;34(12):1679-1680. doi: 10.1111/jocs.14297. Epub 2019 Oct 26. PubMed PMID: 31654579.

115: Mahajan C, Mishra RK, Jena BR, Kapoor I, Prabhakar H, Rath GP, Chaturvedi A. Effect of magnesium and lignocaine on post-craniotomy pain: A comparative, randomized, double blind, placebo-controlled study. *Saudi J Anaesth.* 2019 Oct-Dec;13(4):299-305. doi: 10.4103/sja.SJA_837_18. PubMed PMID: 31572073; PubMed Central PMCID: PMC6753769.

Background: Lignocaine and Magnesium have an analgesic action and reduce perioperative opioid requirements. We carried out this study to evaluate the effect of magnesium and lignocaine on postoperative pain as assessed using the visual analog scale (VAS) and fentanyl consumption. We also measured S-100 B levels and noted the side effect of drugs if any.

Materials and Methods: In this prospective preliminary study, 45 patients undergoing supratentorial craniotomy for tumor surgery were randomized to receive either lignocaine (group I-1.5 mg/kg bolus followed by 2 mg/kg/h infusion), saline (Group II) or magnesium (group III: bolus of 50 mg/kg followed by 25 mg/kg/hr) intraoperatively. The amount of fentanyl required, VAS over first 24 hours and any side effects were noted. S100 B levels were also measured to assess brain protective effect of these drugs, if any. Appropriate statistical tests were applied for analysis of data and a P value < 0.05 was considered statistically significant.

Results: None of the patient experienced any adverse hemodynamic effect intraoperatively secondary to the study drugs. The amount of intraoperative fentanyl consumption was comparable among the three groups. The mean VAS score was significantly less in group I and III [Group I (15.3 ± 6.0), Group II (24.8 ± 6.7), Group III (17.9 ± 7.6); ($P < 0.01$)]. The fentanyl consumed in first 24 hours was significantly less in those patients who received lignocaine and magnesium [Group I (204.4 ± 136.4), Group II (383 ± 168.2), Group III (194 ± 148.9); ($P = 0.01$)]. S100 value did not differ in the lignocaine and the saline group during the perioperative period. However, a significant decline was noted in the levels of S100 B in the magnesium group.

Conclusion: Intraoperative infusion of lignocaine and magnesium results in lower VAS score and decreases the postoperative opioid requirement in patients undergoing craniotomy for excision of supratentorial tumors.

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DOI: 10.4103/sja.SJA_837_18

PMCID: PMC6753769

PMID: 31572073

116: Maitra S, Baidya DK, Anand RK, Subramaniam R, Bhattacharjee S. Carotid Artery Corrected Flow Time and Respiratory Variations of Peak Blood Flow Velocity for Prediction of Hypotension After Induction of General Anesthesia in Adult Patients Undergoing Elective Surgery: A Prospective Observational Study. *J Ultrasound Med.* 2019 Oct 24. doi: 10.1002/jum.15151. [Epub ahead of print] PubMed PMID: 31647132.

OBJECTIVES: Hypotension is common after induction of general anesthesia, and intraoperative hypotension is associated with postoperative end-organ injury such as acute kidney injury and myocardial ischemia. This study was designed to determine the utility of the carotid corrected flow time (cFT) and carotid artery peak blood flow velocity variation (δV_{peak}) for prediction of hypotension after induction of general anesthesia.

METHODS: Adult patients (n = 112) undergoing any elective surgery under general anesthesia who fasted for at least 6 to 8 hours were recruited in this prospective observational study. The common carotid artery cFT and δV_{peak} were measured with ultrasound 10 minutes before induction of general anesthesia. After that, general anesthesia with propofol was used, and hemodynamic data were collected until 3 minutes after induction of anesthesia.

RESULTS: The carotid cFT was significantly correlated with percentages of the fall in the systolic blood pressure at 2 minutes ($P < .0001$) and 3 minutes ($P < .0001$) and percentages of the fall in the mean arterial pressure at 1 minute ($P = .0006$), 2 minutes ($P < .0001$), and 3 minutes ($P < .0001$). The cFT was a predictor of hypotension after induction of general anesthesia, with an area under the receiver operating characteristic curve of 0.91. The best cutoff value obtained from this study was 330.2 milliseconds or less, which predicted postinduction hypotension with sensitivity and specificity of 85.7% and 96.8%, respectively. The δV_{peak} was an inferior predictor of postinduction hypotension, with an area under the receiver operating characteristic curve of 0.68. The optimum cutoff value was 18.8%, with sensitivity and specificity of 61.9% and 67.4%.

CONCLUSIONS: The cFT measured in the common carotid artery is a reasonable predictor of hypotension after induction of general anesthesia in American Society of Anesthesiologists physical status I and II patients. Further studies are required to identify its role in high-risk patients such as older groups and patients with cardiovascular diseases and also to identify interobserver and intraobserver variability of cFT and δV_{peak} measurements.

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DOI: 10.1002/jum.15151

PMID: 31647132

117: Makhija N, Magoon R, Goyal A. In reply: Additional insights regarding aortic intramural hematoma. *Can J Anaesth.* 2020 Mar;67(3):384. doi: 10.1007/s12630-019-01491-9. Epub 2019 Oct 1. PubMed PMID: 31576514.

118: Malagi AV, Das CJ, Khare K, Calamante F, Mehndiratta A. Effect of combination and number of b values in IVIM analysis with post-processing methodology: simulation and clinical study. *MAGMA.* 2019 Oct;32(5):519-527. doi: 10.1007/s10334-019-00764-0. Epub 2019 Jun 18. PubMed PMID: 31214819.

OBJECTIVE: To investigate the effect of number and combination of b values used on the accuracy of estimated Intravoxel Incoherent Motion (IVIM) parameters using simulation and clinical data.

MATERIALS AND METHODS: Simulations with seven combinations of b values were performed for 4, 6, 8, and 13 numbers of b values with six different values of D, D*, and f parameters. Two methodologies were implemented for IVIM analysis: standard biexponential model (BE) and biexponential model with total variation penalty function (BE+TV). Clinical data set of six patients with prostate cancer was retrospectively analyzed using 4, 8, and 13 b values.

RESULTS: BE+TV method showed lesser error and lower variability in simulation and clinical data, respectively. 8 and 13 b values showed good agreement in the values of parameters estimated with high correlation coefficient ($\rho = 0.83-0.93$).

Clinical data showed high spurious noise with lower b values [4 b values leading to high coefficient of variation (CV); however, substantially, lower CV was observed with 8 and 13 b values].

DISCUSSION: BE model with TV penalty function is robust to combination of b values used for IVIM analysis. Combination of 8 b values provided a reasonably good accuracy in IVIM parameters.

DOI: 10.1007/s10334-019-00764-0

PMID: 31214819

119: Mallick S, Giridhar P, Benson R, Melgandi W, Rath GK. Demography, Pattern of Care, and Survival in Patients with Xanthoastrocytoma: A Systematic Review and Individual Patient Data Analysis of 325 Cases. *J Neurosci Rural Pract.* 2019 Jul;10(3):430-437. doi: 10.1055/s-0039-1697873. Epub 2019 Oct 7. PubMed PMID: 31595115; PubMed Central PMCID: PMC6779544.

Objectives Xanthoastrocytoma (XA) is a low-grade glial tumor seen in young adults and there is lack of robust data on treatment of this rare tumor. In this systematic review and individual patient's data analysis, we aimed to look into the demography, pattern of care, survival outcomes, and prognostic factors in patients with both Grade II and III XA. Methods A comprehensive search was conducted with the Medical Subject Heading terms: "Xanthoastrocytoma; Pleomorphic Xanthoastrocytoma; Anaplastic Xanthoastrocytoma; Xanthoastrocytoma AND treatment; and Anaplastic Xanthoastrocytoma AND survival" to find all possible publications. Results A total of 325 individual patients from a total of 138 publications pertaining to XA were retrieved. Median age of the entire cohort was 19 years. About 56.1% of the patients underwent a gross total resection (GTR) and 31.4% underwent a subtotal resection. Nearly, 76.6% of the patients had a Grade II tumor and adjuvant radiation was delivered in 27.4% of the patients. Estimated 2- and 5-year progression-free survival (PFS) were 68.5 and 51.2%, respectively. Age, grade, and extent of surgery were significant factors affecting PFS. Estimated 2- and 5-year overall survival (OS) was 88.8 and 78%, respectively. The median OS for Grade II and Grade III tumors were 209 and 49 months, respectively. Age and extent of surgery were significant factors affecting OS. Conclusion XA is a disease of young adults with favorable prognosis. Younger patients (<20 years), patients who undergo a GTR, and patients with a lower grade tumor have a better treatment outcome.

DOI: 10.1055/s-0039-1697873

PMCID: PMC6779544

PMID: 31595115

120: Mathur P, Khurana S, de Man TJB, Rastogi N, Katoch O, Veeraraghavan B, Neeravi AR, Venkatesan M, Kumar S, Sagar S, Gupta A, Aggarwal R, Soni KD, Malhotra R, Velayudhan A, Siromany V, Malpiedi P, Lutgring J, Laserson K, Gupta N, Srikantiah P, Sharma A. Multiple importations and transmission of colistin-resistant *Klebsiella pneumoniae* in a hospital in northern India. *Infect Control Hosp Epidemiol.* 2019 Dec;40(12):1387-1393. doi: 10.1017/ice.2019.252. Epub 2019 Oct 18. PubMed PMID: 31625832.

OBJECTIVE: Resistance to colistin, a last resort antibiotic, has emerged in India. We investigated colistin-resistant *Klebsiella pneumoniae* (ColR-KP) in a hospital in India to describe infections, characterize resistance of isolates, compare concordance of detection methods, and identify transmission events.

DESIGN: Retrospective observational study.

METHODS: Case-patients were defined as individuals from whom ColR-KP was isolated from a clinical specimen between January 2016 and October 2017. Isolates resistant to colistin by Vitek 2 were confirmed by broth microdilution (BMD).

Isolates underwent colistin susceptibility testing by disk diffusion and whole-genome sequencing. Medical records were reviewed.

RESULTS: Of 846 *K. pneumoniae* isolates, 34 (4%) were colistin resistant. In total, 22 case-patients were identified. Most (90%) were male; their median age was 33 years. Half were transferred from another hospital; 45% died.

Case-patients were admitted for a median of 14 days before detection of ColR-KP. Also, 7 case-patients (32%) received colistin before detection of ColR-KP. All isolates were resistant to carbapenems and susceptible to tigecycline. Isolates resistant to colistin by Vitek 2 were also resistant by BMD; 2 ColR-KP isolates were resistant by disk diffusion. Moreover, 8 multilocus sequence types were identified. Isolates were negative for mobile colistin resistance (*mcr*) genes. Based on sequencing analysis, in-hospital transmission may have occurred with 8 case-patients (38%).

CONCLUSIONS: Multiple infections caused by highly resistant, *mcr*-negative ColR-KP with substantial mortality were identified. Disk diffusion correlated poorly with Vitek 2 and BMD for detection of ColR-KP. Sequencing indicated multiple importation and in-hospital transmission events. Enhanced detection for ColR-KP may be warranted in India.

DOI: 10.1017/ice.2019.252

PMID: 31625832

121: Meena JP, Phillips RS, Kinsey S. Brincidofovir as a Salvage Therapy in Controlling Adenoviremia in Pediatric Recipients of Hematopoietic Stem Cell Transplant. *J Pediatr Hematol Oncol*. 2019 Oct;41(7):e467-e472. doi: 10.1097/MPH.0000000000001480. PubMed PMID: 30969265.

Adenovirus infection is a well-known complication in patients receiving hematopoietic stem cell transplantation (HSCT). Brincidofovir (BCV) is an orally bioavailable lipid conjugate of cidofovir, which has activity against adenoviruses. We present a review of adenovirus infections treated with BCV which were unresponsive to cidofovir initially in 4 patients and it was used upfront in one patient. Children with adenovirus infection following HSCT treated with BCV, between July 2014 and February 2018 were recognized. Five patients including 3 male and 2 female with a median age of 10 years (range, 2.2 to 10y) were identified. The median days of adenoviremia detection was 18 days (range, 7 to 303d) posttransplant. The median peak viral load by quantitative polymerase chain reaction was 21,38,000 copies/mL (range, 1,77,200 to 31,97,000 copies/mL). The median time from first detection of adenoviremia to become negative was 30 days (range, 15 to 113d). The sites involved were gastrointestinal tract in all patients and 2 patients had additional respiratory tract involvement. Two patients survived and 3 patients died of sepsis. All patients responded well to BCV and no adverse effect was noticed. We saw the good safety profile and excellent antiadenoviral activity of BCV in pediatric patients receiving HSCT without the nephrotoxicity and it may have a role in preemptive therapy.

DOI: 10.1097/MPH.0000000000001480

PMID: 30969265

122: Meena RK, Doddamani RS, Chipde H, Mahajan S, Chandra SP, Sawarkar DP. Primary spinal atypical teratoid/rhabdoid tumour presenting with hematomyelia and subarachnoid haemorrhage—a case report. *Childs Nerv Syst*. 2019 Oct 29. doi: 10.1007/s00381-019-04412-9. [Epub ahead of print] PubMed PMID: 31664561.

Atypical teratoid/rhabdoid tumours (AT/RTs) are highly aggressive and uncommon malignant tumours of the central nervous system (CNS) affecting children younger than 3 years of age. Primary spinal cord involvement is an extremely rare presentation. AT/RTs show necrosis and haemorrhages on histopathology frequently.

However, spinal atypical teratoid/rhabdoid tumour (AT/RT) with hematomyelia and spinal subarachnoid haemorrhage (SAH), as seen in our case, has never been reported in the literature in the paediatric age group. We report a case of primary spinal AT/RT in a 3-year-old male child presenting acutely with hematomyelia and spinal SAH and try to elucidate its pathophysiological basis.

DOI: 10.1007/s00381-019-04412-9

PMID: 31664561

123: Meenu M, Reeta KH, Dinda AK, Kottarath SK, Gupta YK. Evaluation of sodium valproate loaded nanoparticles in acute and chronic pentylenetetrazole induced seizure models. *Epilepsy Res.* 2019 Dec;158:106219. doi: 10.1016/j.eplepsyres.2019.106219. Epub 2019 Oct 24. PubMed PMID: 31726286.

BACKGROUND AND PURPOSE: Efficacy of sodium valproate in epilepsy is limited by its poor blood brain barrier penetration and side effects. Nanoparticles may offer a better drug delivery system to overcome these limitations. This study evaluated the efficacy of sodium valproate encapsulated in nanoparticles in pentylenetetrazole (PTZ) induced acute and kindling models of seizures in male Wistar rats.

METHODS: Poly lactic-co-glycolic acid (PLGA) based, polysorbate 80 stabilized sodium valproate loaded nanoparticles (nano sodium valproate) and rhodamine loaded nanoparticles (RLN) were formulated by double emulsion- solvent evaporation method and characterized for their size, shape, zeta potential and drug loading percentage. RLN was used to demonstrate blood brain barrier (BBB) permeability of nanoparticles. Serum drug levels were estimated using high performance liquid chromatography. The efficacy of standard sodium valproate (300mg/kg) and nano sodium valproate (~300, ~150 and ~75mg/kg of sodium valproate) were evaluated in experimental animal models of seizures along with their effects on behavioral and oxidative stress parameters. Drugs were administered 60min before PTZ in acute model. In the kindling model, drugs were administered every day while PTZ was administered on alternate days 60min after drug administration. All the study drugs/compounds were administered intraperitoneally.

RESULTS: RLN were observed to be clustered in cortex which implied that the nanoparticles crossed BBB. Both standard sodium valproate and nano sodium valproate reached therapeutic serum level at 15min and 1h, but were undetectable in serum at 24h. In acute PTZ (60 mg/kg) model, nano sodium valproate (~300mg/kg of sodium valproate) and standard sodium valproate showed protection against seizures till 6h and 4h, respectively. There were significant behavioral impairment and oxidative stress with standard sodium valproate in acute model as compared to nano sodium valproate at 6h. In kindling model, induced with PTZ (30 mg/kg, every alternate day for 42 days), complete protection from seizures was observed with nano sodium valproate (~150mg/kg and ~75mg/kg of sodium valproate) and standard sodium valproate (300mg/kg). Similarly, significant protection from behavioral impairment and oxidative stress was observed with standard sodium valproate and nano sodium valproate as compared to PTZ.

CONCLUSION: When compared to conventional therapy, nano sodium valproate showed protection from seizures at reduced doses and for a longer duration in animal models of epilepsy. This study suggests the potential of nano sodium valproate in the treatment of epilepsy.

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DOI: 10.1016/j.eplepsyres.2019.106219

PMID: 31726286

124: Mehmi N, Kumar R, Sagar P, Singh CA, Kumar R, Thakar A, Sharma SC. Importance and Impact of Appropriate Radiology in the Management of Branchial Cleft Anomalies. *Indian J Otolaryngol Head Neck Surg.* 2019 Oct;71(Suppl 1):953-959. doi: 10.1007/s12070-019-01634-w. Epub 2019 Mar 23. PubMed PMID: 31742101; PubMed Central PMCID: PMC6848690.

Branchial cleft anomalies are common differential diagnosis of neck masses. However, depending on the origin (1st, 2nd, 3rd or 4th arch), this pathology presents at different locations as cyst, sinus and fistula. Incomplete excision or incision and drainage of infected branchial cleft anomalies (cystic presentation) can lead to multiple recurrences. Appropriate radiology is imperative to make a correct diagnosis and to achieve complete excision to prevent recurrence. Our case series highlights the mode of presentation, appropriate radiology and management for each type of branchial cleft anomalies. Data of 27 patients with the diagnosis of branchial cleft anomaly and treated in the department of Otolaryngology-Head and Neck Surgery in a tertiary care referral centre in last 5 years was analysed retrospectively. Demographic data in terms of age, sex, laterality, clinical presentation, duration of symptoms and radiological investigations if any were recorded. The mean age at presentation was 22.1 years in this series of 27 cases including six (22.2%) recurrent cases. Most common clinical presentation was discharging sinus (59.25%) followed by cystic neck swelling (33.3%). Second branchial cleft anomalies were commonest (51.8%) followed by first branchial cleft anomalies (29.6%). Appropriate radiology was available for 17 (62.9%) patients. Branchial cleft anomaly is an important differential diagnosis of neck mass. Appropriate radiology helps in complete excision and prevents recurrences. Recurrent cases pose surgical challenge owing to fibrosis from previous surgery which further increases the chances of incomplete excision.

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DOI: 10.1007/s12070-019-01634-w
PMCID: PMC6848690 [Available on 2020-10-01]
PMID: 31742101

125: Mehtab W, Agarwal A, Singh N, Malhotra A, Makharia GK. All that a physician should know about FODMAPs. *Indian J Gastroenterol.* 2019 Oct;38(5):378-390. doi: 10.1007/s12664-019-01002-0. Epub 2019 Dec 4. Review. PubMed PMID: 31802437.

A diet low in poorly absorbed, fermentable oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAPs) is now considered as an effective strategy for symptoms control in patients with irritable bowel syndrome (IBS). The low FODMAP diet is administered in three phases, namely restriction of all dietary FODMAPs followed by rechallenge and then reintroduction of specific FODMAPs according to the tolerance of patients. A dietician should be involved in patients in whom a low FODMAP diet is planned. While restricting high FODMAPs, it is pertinent that patients are advised a well-balanced diet and suitable alternatives with low FODMAP contents in each food groups are prescribed. Strict adherence to a low FODMAP diet has been shown to improve symptoms, stool output, quality of life, and the overall well-being of patients with IBS. For those who do not respond to this dietary approach, a normal diet may be initiated and other treatment strategies (dietary or nondietary) should be considered. Interestingly, the low FODMAP diet has also been tried in other functional disorders, nonceliac gluten sensitivity, and even inflammatory bowel disease. Since the concept of FODMAP is relatively new, there is only limited data on the content of FODMAP in the Indian food items and there is a need to address this question. There is also a need for well-designed and adequately powered studies to explore the efficacy

of low FODMAP diet in patients with IBS. In the present review article, we have compiled all the relevant information about FODMAPs with an objective to provide comprehensive information on FODMAPs to a physician.

DOI: 10.1007/s12664-019-01002-0

PMID: 31802437

126: Michael SN, Madaan P, Jauhari P, Chakrabarty B, Kumar A, Gulati S. Selective Pyramidal Tract Involvement in Late-Onset Krabbe Disease. *Indian J Pediatr.* 2019 Oct;86(10):970-971. doi: 10.1007/s12098-019-02972-x. Epub 2019 May 15. PubMed PMID: 31093932.

127: Mishra S, Rastogi YP, Jabin S, Kaur P, Amir M, Khatun S. A deep learning ensemble for function prediction of hypothetical proteins from pathogenic bacterial species. *Comput Biol Chem.* 2019 Dec;83:107147. doi: 10.1016/j.compbiolchem.2019.107147. Epub 2019 Oct 19. PubMed PMID: 31698160.

Protein function prediction is a crucial task in the post-genomics era due to their diverse irreplaceable roles in a biological system. Traditional methods involved cost-intensive and time-consuming molecular biology techniques but they proved to be ineffective after the outburst of sequencing data through the advent of cost-effective and advanced sequencing techniques. To manage the pace of annotation with that of data generation, there is a shift to computational approaches which are based on homology, sequence and structure-based features, protein-protein interaction networks, phylogenetic profiles, and physicochemical properties, etc. A combination of these features has proven to be promising for protein function prediction in terms of improving prediction accuracy. In the present work, we have employed a combination of features based on sequence, physicochemical property, subsequence and annotation features with a total of 9890 features extracted and/or calculated for 171,212 reviewed prokaryotic proteins of 9 bacterial phyla from UniProtKB, to train a supervised deep learning ensemble model with the aim to categorize a bacterial hypothetical/unreviewed protein's function into 1739 GO terms as functional classes. The proposed system being fully dedicated to bacterial organisms is a novel attempt amongst various existing machine learning based protein function prediction systems based on mixed organisms. Experimental results demonstrate the success of the proposed deep learning ensemble model based on deep neural network method with F1 measure of 0.7912 on the prepared Test dataset 1 of reviewed proteins.

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PMID: 31698160 [Indexed for MEDLINE]

128: Mistri M, Mehta S, Solanki D, Kamate M, Gupta N, Kabra M, Puri R, Girisha K, Hariharan S, Nampoothiri S, Sheth F, Sheth J. Identification of novel variants in a large cohort of children with Tay-Sachs disease: An initiative of a multicentric task force on lysosomal storage disorders by Government of India. *J Hum Genet.* 2019 Oct;64(10):985-994. doi: 10.1038/s10038-019-0647-8. Epub 2019 Aug 6. PubMed PMID: 31388111.

Tay-Sachs disease (TSD) (OMIM) is a neurodegenerative lysosomal storage disorder caused due to mutations in the HEXA gene. To date, nearly 190 mutations have been reported in HEXA gene. Here, we have characterized 34 enzymatically confirmed TSD families to investigate the presence of novel as well as known variants in HEXA gene. Overall study detected 25 variants belonging to 31 affected TSD patients

and 3 carrier couples confirmed by enzyme study. Of these 17 patients harbors 15 novel variants, including seven missense variants [p.V206L, p.Y213H, p.R252C, p.F257S, p.C328G, p.G454R, and p.P475R], four nonsense variant [p.S9X, p.E91X, p.W420X, and p.W482X], two splice site variants [c.347-1G>A and c.460-1G>A], and two small deletion [c.1349delC (p.A450VfsX3) and c.52delG (p.G18Dfs*82)]. While remaining 17 patients harbors 10 previously reported variants that includes six missense variants [p.M1T, p.R170Q, p.D322Y, p.D322N, p.E462V, and p.R499C], one nonsense variant [p.Q106X], two splice site variants [c.1073+1G>A and c.459+4A>G] and one 4bp insertion [c.1278insTATC (p.Y427IfsX5)]. In conclusion, Indian infantile TSD patients provide newer insight into the molecular heterogeneity of the TSD. Combining present study and our earlier studies, we have observed that 67% genotypes found in Indian TSD patients are novel, which are associated with severe infantile phenotypes, while rest 33% genotypes found in our cohort were previously reported in various populations. In addition, higher frequency of the p.E462V and c.1278insTATC mutations in the present study further support and suggest the prevalence of p.E462V mutation in the Indian population.

DOI: 10.1038/s10038-019-0647-8

PMID: 31388111

129: Mochan S, Dhingra MK, Gupta SK, Saxena S, Arora P, Yadav V, Rani N, Luthra K, Dwivedi S, Bhatla N, Dhingra R. Status of VEGF in preeclampsia and its effect on endoplasmic reticulum stress in placental trophoblast cells. *Eur J Obstet Gynecol Reprod Biol X*. 2019 Jun 21;4:100070. doi: 10.1016/j.eurox.2019.100070. eCollection 2019 Oct. PubMed PMID: 31517301; PubMed Central PMCID: PMC6728727.

Objective: To explore the role of VEGF in attenuating endoplasmic reticulum stress in placental trophoblast cells.

Study design: Study was divided into following parts: 1. Serum Analysis of GRP78 and VEGF using sandwich ELISA. 2. Expression of VEGF and GRP78 in placentae by immunohistochemistry (IHC). 3. In Vitro experiments. Status of ER stress markers (GRP78, eIF2 α , XBP1, ATF6 and CHOP) was assessed at various time points (8 h, 14 h, 24 h) when trophoblast cells were treated with varying concentration(s) of VEGF and also by adding recombinant VEGF at protein (Immunofluorescence, Western blot) and transcript levels (qRT-PCR).

Results: Increased GRP78 and decreased VEGF protein levels in sera and placentae of preeclamptic pregnant women and reduced expression of various ER stress markers at both transcript and protein levels was observed in trophoblast cells when they were exposed to recombinant VEGF thereby indicating positive role of VEGF in alleviating ER stress.

Conclusions: Reduced expression of ER stress markers in trophoblast cells against increased VEGF highlighted a new window to explore prospective drugs that can be designed to modulate the activities of various ER stress sensors in order to alleviate ER stress in pregnant women with preeclampsia.

DOI: 10.1016/j.eurox.2019.100070

PMCID: PMC6728727

PMID: 31517301

130: Modi D, Dholakia N, Gopalan R, Venkatraman S, Dave K, Shah S, Desai G, Qazi SA, Sinha A, Pandey RM, Anand A, Desai S, Shah P. mHealth intervention "ImTeCHO" to improve delivery of maternal, neonatal, and child care services-A cluster-randomized trial in tribal areas of Gujarat, India. *PLoS Med*. 2019 Oct 24;16(10):e1002939. doi: 10.1371/journal.pmed.1002939. eCollection 2019 Oct. PubMed PMID: 31647821; PubMed Central PMCID: PMC6812744.

BACKGROUND: The coverage of community-based maternal, neonatal, and child health (MNCH) services remains low, especially in hard-to-reach areas. We evaluated the

effectiveness of a mobile-phone-and web-based application, Innovative Mobile-phone Technology for Community Health Operations (ImTeCHO), as a job aid to the government's Accredited Social Health Activists (ASHAs) and Primary Health Center (PHC) staff to improve coverage of MNCH services in rural tribal communities of Gujarat, India.

METHODS AND FINDINGS: This open cluster-randomized trial was conducted in 22 PHCs in six tribal blocks of Bharuch and Narmada districts in India. The ImTeCHO mobile-phone-and web-based application included various technology-based job aids to facilitate scheduling of home visits, screening for complications, counseling during home visits, and supportive supervision by PHC staff. Primary outcome indicators were a composite index calculated based on coverage of important MNCH services and coverage of at least two home visitations by ASHA within the first week of birth. Primary analysis was intention to treat (ITT). Generalized Estimating Equation (GEE) was used to account for clustering. Eleven PHCs each were randomly allocated to the intervention (280 ASHAs, population: 234,134) and control (281 ASHAs, population: 242,809) arms. The intervention was implemented from February, 2016 to January, 2017. At the end of the implementation, 6,493 mothers were surveyed. Most of the surveyed women were tribal (5,571, 85.8%), and reported having a government-issued certificate for living below poverty line (4,916, 75.7%). The coverage of at least two home visits within first week of birth was 32.4% in the intervention clusters compared to 22.9% in the control clusters (adjusted effect size 10.2 [95% CI: 6.4, 14.0], $p < 0.001$). Mean number of home visits within first week of birth was 1.11 and 0.80 for intervention and control clusters, respectively (adjusted effect size 0.34 [95% CI: 0.23, 0.45], $p < 0.001$). The composite coverage index was 43.0% in the intervention clusters compared to 38.5% (adjusted effect size 4.9 [95% CI: 0.2, 9.5], $p = 0.03$) in the control clusters. There were substantial improvements in coverage home visits by ASHAs during antenatal period (adjusted effect size 15.7 [95% CI: 11.0, 20.4], $p < 0.001$), postnatal period (adjusted effect size 6.4, [95% CI: 3.2, 9.6], $p < 0.001$), early initiation of breastfeeding (adjusted effect size 7.8 [95% CI: 4.2, 11.4], $p < 0.001$), and exclusive breastfeeding (adjusted effect size 13.4 [95% CI: 8.9, 17.9], $p < 0.001$). Number of infant and neonatal deaths was similar in the two arms in the ITT analysis. The limitations of the study include potential risk of inaccuracies in reporting events that occurred during pregnancy by the mothers and the duration of intervention being 12 months, which might be considered short.

CONCLUSIONS: In this study, we found that use of ImTeCHO mobile- and web-based application as a job aid by government ASHAs and PHC staff improved coverage and quality of MNCH services in hard-to-reach areas. Supportive supervision, change management, and timely resolution of technology-related issues were critical implementation considerations to ensure adherence to the intervention.

TRIAL REGISTRATION: Study was registered at the Clinical Trial Registry of India (www.ctri.nic.in). Trial number: CTRI/2015/06/005847. The trial was registered (prospective) on 3 June, 2015. First enrollment was done on 26 August, 2015.

DOI: 10.1371/journal.pmed.1002939

PMCID: PMC6812744

PMID: 31647821

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132: More S, Mishra S, Garg VK, Chandrashekhara SH, Bharti SJ. A Case Report of Surgical Entrapment and Catheter Embolization: A Rare Complication of Peripherally Inserted Central Catheters. *A A Pract*. 2019 Oct 15;13(8):310-312. doi: 10.1213/XAA.0000000000001062. PubMed PMID: 31335396.

Peripherally inserted central catheters (PICCs) are a feasible alternative to conventional central venous access. PICCs are often used perioperatively for central venous pressure monitoring and administration of vasoactive drugs especially in cancer patients. Catheter breakage and embolization are rare but potentially fatal complications, and most of the reported literature pertains to pediatric patients after medium- to long-term use. In this report, we describe a rare scenario of catheter breakage, entrapment, and embolization in a patient caused by inadvertent surgical clip and suture placement.

DOI: 10.1213/XAA.0000000000001062

PMID: 31335396

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OBJECTIVE: To characterise types of corneal diseases and resulting visual impairment (VI) in a rural North Indian population.

DESIGN: Cross-sectional, population-based study.

METHODS: The Corneal Opacity Rural Epidemiological study included 12899 participants from 25 random clusters of rural Gurgaon, Haryana, India to determine the prevalence of the corneal disease in the general population. Sociodemographic details, presence and type of corneal morbidity, laterality, VI (presenting visual acuity (PVA) <6/18 in the better eye) and characteristics of corneal opacities were noted.

RESULTS: Overall, 12113 participants of all ages underwent detailed ophthalmic examination and prevalence of corneal opacity was found to be 3.7% (n=452) with bilateral involvement in 140 participants (31%) during the house-to-house visits. Of the total 571 eyes of 435 patients presenting with corneal opacity at the central clinic, PVA was <3/60 in 166 (29.1%), 3/60 to <6/60 in 14 (2.5%), 6/60 to <6/18 in 164 (28.7%), 6/18 to ≤6/12 in 85 (14.9%) and 6/9 to 6/6 in 142 eyes (24.9%), respectively. Further, there were a total of 115 eyes (20.1%) with nebular corneal opacity, 263 (46.1%) with macular, 162 (28.4%) with leucomatous and 31 (5.4%) with an adherent leucoma. The odds of having VI due to corneal disease were greater for the illiterate (OR:4.26; 95% CI: 2.88 to 6.31; p<0.001) and elderly (OR:11.05; 95% CI: 7.76 to 15.74; p<0.001).

CONCLUSION: The data from this study give an insight into the characteristics of various corneal pathologies and resulting VI in the general population. This is a pioneer study involving all age groups on the burden of VI due to corneal diseases.

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PMID: 31628205

134: Mukhija R, Lomi N, Kumar S, Sen S. Retinoblastoma in an adult: a diagnostic dilemma. *BMJ Case Rep*. 2019 Oct 13;12(10). pii: [e230537](https://doi.org/10.1136/bcr-2019-230537). doi: [10.1136/bcr-2019-230537](https://doi.org/10.1136/bcr-2019-230537). PubMed PMID: 31611224.

We report a case of a man aged 35 years who presented with the chief complaint of painless diminution of vision in the right eye for 4 months. Examination revealed a large inferior retinochoroidal mass along with retinal detachment. An anterior choroidal mass with moderate internal reflectivity was seen on B-scan ocular

ultrasonography and MRI and CT scan were indicative of a mitotic aetiology. Fluorodeoxyglucose-positron emission tomography scan ruled out any other systemic foci of involvement. Based on the above findings, a provisional diagnosis of amelanotic choroidal melanoma was made and he was taken up for choroidal aspiration biopsy, wherein the cytopathology report revealed hypercellularity with no identifiable pigments. In view of the above, a diagnostic and therapeutic enucleation was performed; however, the histopathology report of the enucleated specimen revealed poorly differentiated retinoblastoma. This case highlights that the diagnosis of retinoblastoma should be kept in mind even in adult patients.

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DOI: 10.1136/bcr-2019-230537

PMID: 31611224

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The encoding of visuospatial information is the foremost and indispensable step which determines the outcome in a visuospatial working memory (VSWM) task. It is considered to play a crucial role in limiting our ability to attend and process only 3-5 integrated items of information. Despite its importance in determining VSWM performance, the neural mechanisms underlying VSWM encoding have not been clearly differentiated from those involved during VSWM retention, manipulation and/or retrieval. The high temporal resolution of electroencephalography (EEG) and improved spatial resolution with dense array data acquisition makes it an ideal tool to study the dynamics in the functional brain connectivity during a cognitive task. In the present study, the changes in the functional brain connectivity due to memory load during VSWM encoding were studied using 128-channel EEG. Lagged linear coherence (LagR) was computed between 84 regions of interest (ROIs) defined according to the Brodmann areas for seven EEG frequency bands: delta (2-4 Hz), theta (4-8 Hz), alpha 1 (8-10.5 Hz), alpha 2 (10.5-13 Hz), beta 1 (13-20 Hz), beta 2 (20-30 Hz), and gamma (30-45 Hz). Interestingly, out of seven EEG frequency bands investigated in the current study, LagR of only theta band varied significantly in 13 brain connections due to memory load during VSWM encoding. LagR of theta band increased significantly at high memory load when compared to low memory load in twelve brain connections with the maximum change observed between right cuneus and right middle temporal gyrus (Cohen's $d=0.836$), indicating the integration of brain processes to confront the increase in memory demands. Theta LagR decreased significantly between left postcentral gyrus and right precentral gyrus at high memory load as compared to low memory load, which might have a role for sustaining attention during encoding. Change in the LagR values due to memory load between fusiform gyrus and lingual gyrus in the right hemisphere had a positive correlation ($r=0.464$, $p=0.003$) with the error rate, signifying the crucial role played by these two regions in predicting the performance. The current study has not only identified the neural connections that are responsible for the formation of working memory traces during VSWM encoding, but also support the notion that encoding is a rate-limiting process underlying our memory capacity limit.

DOI: 10.1007/s10548-019-00739-3

PMID: 31650366

136: Nambirajan A, Husain N, Shukla S, Kumar S, Jain D. Comparison of laboratory-developed test & validated assay of programmed death ligand-1

immunohistochemistry in non-small-cell lung carcinoma. Indian J Med Res. 2019 Oct;150(4):376-384. doi: 10.4103/ijmr.IJMR_367_18. PubMed PMID: 31823919; PubMed Central PMCID: PMC6902360.

Background & objectives: Inhibitors of immune checkpoint regulators, programmed death-1 (PD-1) and programmed death ligand-1 (PD-L1), improve outcome in advanced non-small-cell lung carcinoma (NSCLC). Tumours expressing PD-L1 protein are more likely to benefit from this targeted therapy. Multiple concurrent clinical trials evaluating different anti-PD-1/PD-L1 therapies have validated five different immunohistochemistry (IHC) assays using varied antibody clones and staining conditions. This study was aimed at identification of a single harmonized PD-L1 assay for tumour tissue conservation and cost-effectiveness in patients with NSCLC.

Methods: The performance of low-cost, manual, laboratory-developed technique (LDT) PD-L1 IHC assay using the easily available SP142 clone was compared with trial validated Ventana SP263 IHC performed on automated Ventana staining platform on tumour sections of NSCLCs.

Results: Eighty cases of NSCLC were included. SP263 and SP142 stained both tumour cells and immune cells. The concordance rate of tumour cell staining was about 76 per cent, with SP263 detecting more tumour cells in 16 per cent of cases. The concordance rate of immune cell staining was only 61 per cent, with SP142 detecting more immune cells in 24 per cent of cases. The sensitivity, specificity, positive and negative predictive values of manual SP142 LDT assay against gold standard SP263 Ventana assay were 70, 94, 86 and 86 per cent, respectively, at positivity thresholds of ≥ 1 per cent tumour cell staining.

Interpretation & conclusions: The study findings suggested that LDT using SP142 clone showed only moderate concordance with SP263 Ventana assay, and the two assays were not interchangeable. More such validation studies need to be done to generate information that can complement patient therapy in cases of NSCLC.

DOI: 10.4103/ijmr.IJMR_367_18
PMCID: PMC6902360
PMID: 31823919

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Immune check-point blockade (ICB) targeting programmed cell death ligand-1 (PD-L1)/programmed death-1 (PD-1) axis has created paradigm shift in cancer treatment. 'ST-RELA' and 'PF-A' molecular subgroups of ependymomas (EPN) show poor outcomes. We aimed to understand the potential candidature of EPNs for ICB. Supratentorial (ST) Grade II/III EPNs were classified into ST-RELA, ST-YAP, and ST-not otherwise specified (NOS), based on RELA/YAP1 fusion transcripts and/or L1CAM and p65 protein expression. Posterior fossa (PF) EPNs were classified into PF-A and PF-B based on H3K27me3 expression. Immunohistochemistry for PD-L1 and CD8 was performed. RelA protein enrichment at PDL1 promoter site was analysed by chromatin immunoprecipitation-qPCR (ChIP-qPCR). Eighty-three intracranial EPNs were studied. Median tumor infiltrating CD8+cytotoxic T-lymphocyte (CTL)

density was 6/mm², and was higher in ST-EPNs (median 10/mm²) as compared to PF-EPNs (median 3/mm²). PD-L1 expression was noted in 17/83 (20%) EPNs, including 12/31 ST-RELA and rare ST-NOS (2/12), PF-A (2/25) and PF-B (1/13) EPNs. Twelve EPNs (14%) showed high CTL density and concurrent PD-L1 positivity, of which majority (10/12) were ST-RELA EPNs. Enrichment of RelA protein was seen at PDL1 promoter. Increased CTL densities and upregulation of PD-L1 in ST-RELA ependymomas suggests potential candidature for immunotherapy.

DOI: 10.1007/s10014-019-00350-1

PMID: 31388782

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Rare missense variants play a crucial role in amyotrophic lateral sclerosis (ALS) pathophysiology. We report rare/novel missense variants from 154 Indian ALS patients, identified through targeted sequencing of 25 ALS-associated genes. As pathogenic variants could explain only a small percentage of ALS pathophysiology in our cohort, we investigated the frequency of tolerated and benign novel/rare variants, which could be potentially ALS susceptible. These variants were identified in 5.36% (8/149) of sporadic ALS (sALS) cases; with one novel variant each in ERBB4, SETX, DCTN1, and MATR3; four rare variants, one each in PON2 and ANG and two different rare variants in SETX. Identified variants were either absent or present at extremely rare frequencies (MAF<0.01) in large population databases and were absent in 50 healthy controls sequenced through Sanger method. Furthermore, an oligogenic basis of ALS was observed in three sALS, with co-occurrence of intermediate-length repeat expansions in ATXN2 and a rare/novel variant in DCTN1 and SETX genes. Additionally, molecular dynamics and biochemical functional analysis of an angiogenin variant (R21G) identified from our cohort demonstrated loss of ribonucleolytic and nuclear translocation activities. Our findings suggest that rare variants could be potentially pathogenic and functional studies are warranted to decisively establish the pathogenic mechanisms associated with them.

DOI: 10.1007/s10048-019-00584-3

PMID: 31432357

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Ultrafine gold particles (AuPs) can be emerged as a good candidate in the field of drug delivery as well as in imaging applications. However, little attention has been paid to detailed study of nanoparticle's interaction with blood components before systemic use. An investigation into the interaction of ultrafine AuPs with blood components is must for its clinical application. In present study, the interaction of ultrafine sized AuPs (2±0.5 nm, 5±1 nm, and

10±2nm) with blood components and its immunogenic property (pro-inflammatory reaction) was investigated. All three sized AuPs did not cause any significant hemolysis. Plasma coagulation study showed significant increase in Prothrombin time (PT) with International Normalized Ratio (INR) value raised to 1.53 with 10nm AuPs. Maximum prolongation of activated partial thromboplastin time (APTT) (3.2s) was seen with 5 & 10nm sized AuPs. Maximum thrombin time (TT) prolongation was seen with 2nm (18.3s) with the difference of 1.4s as compared to control. Platelet aggregation was faster in case of 5 & 10nm sized AuPs. All three sized AuPs exhibited in-vitro C3 complement activation whereas they did not stimulate significant proliferation of peripheral blood mononuclear cells (PBMC). These findings further validate the utility of ultrafine AuPs for in-vivo applications.

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DOI: 10.1016/j.yrtph.2019.104405
PMID: 31207267

142: Nazir SU, Kumar R, Singh A, Khan A, Tanwar P, Tripathi R, Mehrotra R, Hussain S. Corrigendum to "Breast cancer invasion and progression by MMP-9 through Ets-1 transcription factor" [Gene 711 (2019) 143952]. *Gene*. 2019 Oct 20;716:144013. doi: 10.1016/j.gene.2019.144013. Epub 2019 Aug 1. PubMed PMID: 31377019.

143: Nilima, Puranik A, Shreenidhi SM, Rai SN. Spatial evaluation of prevalence, pattern and predictors of cervical cancer screening in India. *Public Health*. 2020 Jan;178:124-136. doi: 10.1016/j.puhe.2019.09.008. Epub 2019 Oct 31. PubMed PMID: 31678693.

OBJECTIVE: To investigate the social determinants of cervical cancer screening and report the locations vulnerable to poor utilization of cervical cancer screening services.

STUDY DESIGN: An ecological study with the data derived from fourth round of the National Family Health Survey conducted in India in the period 2015-2016.

METHODS: The study focused on the percentage of women who have never undergone cervical cancer screening across 639 districts in India. Moran's I statistic was used to investigate the overall clustering of location. The Getis-Ord G_i^* statistic was used for the detection of significant local clusters. Spatial error, spatial lag, spatial Durbin and spatial Durbin error models were compared, and the model with best fit was reported. ArcGIS, GeoDa and R software were used for the analysis.

RESULTS: The existence of spatial autocorrelation (Moran's $I = 0.61$) necessitates the consideration of spatial component while studying the screening data. A significant clustering of districts with poor screening has been observed in the North-Central and North-Eastern regions of India. The geographic arrangement of the percentage of women who have undergone cervical cancer screening was associated with the percentage of women with poor wealth index ($P < 0.001$), not using a modern method of contraception ($P < 0.001$), residing in rural areas ($P = 0.033$) and never heard of sexually transmitted infection ($P = 0.014$). The range of percentage of women getting cervix screened for cancer was 0.5-68.4%, presenting the heterogeneity among the population elements.

CONCLUSION: A higher risk of poor cervical cancer screening is observed in the districts where most of the women have poor wealth index, reside in urban area, have never heard of sexually transmitted infection and do not use a modern method of contraception.

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144: O'Reilly GM, Mathew J, Roy N, Gupta A, Joshipura M, Sharma N, Mitra B, Cameron PA, Fahey M, Howard T, Kumar V, Jarwani B, Soni KD, Thakor A, Dharap S, Patel P, Jhakar A, Farrow NC, Misra MC, Gruen RL, Fitzgerald MC. A checklist for trauma quality improvement meetings: A process improvement study. *Injury*. 2019 Oct;50(10):1599-1604. doi: 10.1016/j.injury.2019.04.003. Epub 2019 Apr 8. PubMed PMID: 31040028.

BACKGROUND: Each year approximately five million people die from injuries. In countries where systems of trauma care have been introduced, death and disability have decreased. A major component of developed trauma systems is a trauma quality improvement (TQI) program and trauma quality improvement meeting (TQIM). Effective TQIMs improve trauma care by identifying and fixing problems. But globally, TQIMs are absent or unstructured in most hospitals providing trauma care. The aim of this study was to implement and evaluate a checklist for a structured TQIM.

METHODS: This project was conducted as a prospective before-and-after study in four major trauma centres in India. The intervention was the introduction of a structured TQIM using a checklist, introduced with a workshop. This workshop was based on the World Health Organization (WHO) TQI Programs short course and resources, plus the developed TQIM checklist. Pre- and post-intervention data collection occurred at all meetings in which cases of trauma death were discussed. The primary outcome was TQIM Checklist compliance, defined by the discussion of, and agreement upon each of the following: preventability of death, identification of opportunities to improve care and corrective actions and a plan for closing the loop.

RESULTS: There were 34 meetings in each phase, with 99 cases brought to the pre-intervention phase and 125 cases brought to the post-intervention phase. There was an increase in the proportion of cases brought to the meeting for which preventability of death was discussed (from 94% to 100%, $p=0.007$) and agreed (from 7 to 19%, OR 3.7; 95% CI:1.4-9.4, $p=0.004$) and for which a plan for closing the loop was discussed (from 2% to 18%, OR 10.9; 95% CI:2.5-47.6, $p<0.001$) and agreed (from 2% to 18%, OR 10.9; 95% CI:2.5-47.6, $p<0.001$).

CONCLUSION: This study developed, implemented and evaluated a TQIM Checklist for improving TQIM processes. The introduction of a TQIM Checklist, with training, into four Indian trauma centres, led to more structured TQIMs, including increased discussion and agreement on preventability of death and plans for loop closure. A TQIM Checklist should be considered for all centres managing trauma patients.

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DOI: 10.1016/j.injury.2019.04.003
PMID: 31040028

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Objectives: Stress, anxiety, and depression are known to be associated with the development of neurodegenerative disorders through interactions with the underlying pathophysiology. We hypothesized that the presence of these symptoms contributes to cognitive disturbances and dementia in Parkinson's disease (PD). The present study aimed to investigate the levels of stress, anxiety, and depression in PD patients relative to healthy individuals.

Materials and Methods: Anxiety, stress, and depression levels were assessed using standardized questionnaires in PD without dementia (PDND, n = 30), PD with dementia (PDD, n = 28), and healthy controls (HC, n = 26). Arithmetic subtraction task was used as a stressor. Galvanic skin response, heart rate and salivary cortisol, and alpha-amylase were measured during baseline and after induced stress (arithmetic task).

Results: Acute anxiety, acute stress, and depression levels were significantly higher in PDND compared to HC, whereas both acute and chronic anxiety, stress, and depression levels were significantly higher in PDD compared to PDND and HC. Cortisol and alpha-amylase levels were significantly higher in PDND compared to HC during both baseline and postarithmetic task. Posttask levels of cortisol were lower in PDD compared to PDND.

Conclusion: This study concludes that higher levels of salivary cortisol and alpha-amylase at baseline and poststress task with normal levels of chronic stress and anxiety were associated with no dementia in PD. Presence of higher levels of acute, chronic anxiety, and stress along with depression with lower cortisol reactivity to stressor suggests onset of dementia in Parkinson's patients.

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PMID: 31736560

147: Pal S, Medatwal N, Kumar S, Kar A, Komalla V, Yavvari PS, Mishra D, Rizvi ZA, Nandan S, Malakar D, Pillai M, Awasthi A, Das P, Sharma RD, Srivastava A, Sengupta S, Dasgupta U, Bajaj A. A Localized Chimeric Hydrogel Therapy Combats Tumor Progression through Alteration of Sphingolipid Metabolism. ACS Cent Sci. 2019 Oct 23;5(10):1648-1662. doi: 10.1021/acscentsci.9b00551. Epub 2019 Oct 10. PubMed PMID: 31660434; PubMed Central PMCID: PMC6813554.

Rapid proliferation of cancer cells assisted by endothelial cell-mediated angiogenesis and acquired inflammation at the tumor microenvironment (TME) lowers the success rate of chemotherapeutic regimens. Therefore, targeting these processes using localized delivery of a minimally toxic drug combination may be a promising strategy. Here, we present engineering of a biocompatible self-assembled lithocholic acid-dipeptide derived hydrogel (TRI-Gel) that can maintain sustained delivery of antiproliferating doxorubicin, antiangiogenic combretastatin-A4 and anti-inflammatory dexamethasone. Application of TRI-Gel therapy to a murine tumor model promotes enhanced apoptosis with a concurrent reduction in angiogenesis and inflammation, leading to effective abrogation of tumor proliferation and increased median survival with reduced drug resistance. In-depth RNA-sequencing analysis showed that TRI-Gel therapy induced transcriptome-wide alternative splicing of many genes responsible for oncogenic transformation including sphingolipid genes. We demonstrate that TRI-Gel therapy targets the reversal of a unique intron retention event in β -glucocerebrosidase 1 (Gba1), thereby increasing the availability of functional Gba1 protein. An enhanced Gba1 activity elevates ceramide levels responsible for apoptosis and decreases glucosylceramides to overcome drug resistance. Therefore, TRI-Gel therapy provides a unique system that affects the TME via post-transcriptional

modulations of sphingolipid metabolic genes, thereby opening a new and rational approach to cancer therapy.

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148: Pal Singh Balhara Y, Doric A, Stevanovic D, Knez R, Singh S, Roy Chowdhury MR, Kafali HY, Sharma P, Vally Z, Vi Vu T, Arya S, Mahendru A, Ransing R, Erzin G, Le Thi Cam Hong Le H. Correlates of Problematic Internet Use among college and university students in eight countries: An international cross-sectional study. *Asian J Psychiatr.* 2019 Oct;45:113-120. doi: 10.1016/j.ajp.2019.09.004. Epub 2019 Sep 5. PubMed PMID: 31563832.

BACKGROUND AND AIMS: Internet use has increased worldwide exponentially over the past two decades, with no up-to-date cross-country comparison of Problematic Internet Use (PIU) and its correlates available. The present study aimed to explore the pattern and correlates of PIU across different countries in the European and the Asian continent. Further, the stability of factors associated with PIU across different countries were assessed.

MATERIALS AND METHODS: An international, cross-sectional study with a total of 2749 participants recruited from universities/colleges of eight countries: Bangladesh, Croatia, India, Nepal, Turkey, Serbia, Vietnam, and United Arab Emirates (UAE). Participants completed the Generalized Problematic Internet Use Scale -2 (GPIUS2) assessing PIU, and the Patient Health Questionnaire Anxiety-Depression Scale (PHQ-ADS) assessing the depressive and anxiety symptoms.

RESULTS: A total of 2643 participants (mean age 21.3±2.6; 63% females) were included in the final analysis. The overall prevalence of PIU for the entire sample was 8.4% (range 1.6% to 12.6%). The mean GPIUS2 standardized scores were significantly higher among participants from the five Asian countries when compared to the three European countries. Depressive and anxiety symptoms were the most stable and strongest factors associated with PIU across different countries and cultures.

DISCUSSION AND CONCLUSIONS: The PIU is an important emerging mental health condition among college/university going young adults, with psychological distress being the strongest and most stable correlate of PIU across different countries and cultures in this study. The present study highlighted the importance of screening university and college students for PIU.

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149: Panda S, Tiwari A, Luthra K, Sharma SK, Singh A. Association of FokI VDR polymorphism with Vitamin D and its associated molecules in pulmonary tuberculosis patients and their household contacts. *Sci Rep.* 2019 Oct 24;9(1):15251. doi: 10.1038/s41598-019-51803-8. PubMed PMID: 31649297; PubMed Central PMCID: PMC6813333.

Status of Fok I VDR polymorphism along with vitamin D, Vitamin D receptor (VDR), and cathelicidin levels in Tuberculosis (TB) patients compared to household contacts and implication of these findings in susceptibility to TB is not known. 150 active TB patients, 150 household contacts and 150 healthy controls were recruited from North Indian population. FokI VDR polymorphism was studied by polymerase chain reaction- restriction fragment length polymorphism

(PCR-RFLP). VDR mRNA and protein levels were studied using quantitative real time PCR (q rt PCR) and enzyme linked immunosorbent assay (ELISA) respectively. Cathelicidin and Vitamin D levels were measured using ELISA and chemiluminescence immunoassay (CLIA) respectively. Significant association was found between FokI polymorphism and susceptibility to TB ($P < 0.0005$). VDR mRNA, VDR protein and vitamin D levels were significantly lower in active TB group when compared to household contacts and healthy controls ($P < 0.0001$, 0.0001 and 0.0005 respectively). Cathelicidin levels were higher in active TB patients compared to other groups ($P < 0.0001$). Expression of VDR and cathelicidin was significantly higher among 'FF' genotypes of VDR (more active form of VDR) compared to 'ff' genotype (less active form of VDR). 'f' allele was associated with increased susceptibility to TB. Higher frequency of 'F' allele, increased VDR expression along with increased vitamin D levels in household contacts compared to active TB group might be responsible for protection against active TB.

DOI: 10.1038/s41598-019-51803-8

PMCID: PMC6813333

PMID: 31649297

150: Panda S, Tiwari A, Luthra K, Sharma SK, Singh A. Status of vitamin D and the associated host factors in pulmonary tuberculosis patients and their household contacts: A cross sectional study. *J Steroid Biochem Mol Biol*. 2019 Oct;193:105419. doi: 10.1016/j.jsbmb.2019.105419. Epub 2019 Jun 27. PubMed PMID: 31255688.

Innate immunity plays an important role in pathophysiology of tuberculosis which is influenced by various host factors. One such factor is vitamin D which, along with its associated molecule, can alter the host defense against Mycobacterium Tuberculosis (M.Tb.) via altered production of cathelicidin and nitric oxide, both having bactericidal effect. Therefore, assessment of vitamin D and its associated molecules in tuberculosis patients and household contacts as compared to healthy controls were done and the implication of these findings in susceptibility to tuberculosis (TB) was studied. 80 active TB patients, 75 household contacts and 70 healthy controls were included. Vitamin D receptor (VDR), vitamin D binding protein (VDBP) and inducible nitric oxide synthase (iNOS) mRNA levels were studied using quantitative PCR. Serum VDR, cathelicidin, and iNOS levels were measured using ELISA. Vitamin D and NO levels were measured in serum using chemiluminescence based immunoassay and greiss reaction based colorimetry kit respectively. Decreased serum levels of vitamin D were observed in active TB patients as compared to healthy controls ($p < 0.001$). VDR and iNOS mRNA levels were found to be significantly lower in active TB patients compared to household contacts and healthy controls ($p < 0.0001$ and 0.005 respectively). VDBP mRNA expression was found to be lower in active TB group as compared to household contacts and healthy controls however the difference was not found to be significant ($p > 0.21$). Although, mRNA expression of VDR, VDR protein and iNOS along with vitamin D levels were significantly ($p < 0.05$) higher in household contacts compared to active TB group. However, levels of iNOS, NO and cathelicidin were found to be higher in TB patients as compared to household contacts and healthy controls ($p < 0.01$, 0.05 and 0.01 respectively). Higher levels of Vitamin D along with VDR and iNOS expression in household contacts as compared to active TB patients suggest vitamin D might have a protective role against TB plausibly decreasing disease susceptibility. Low vitamin D levels in active TB patients warrants further studies to determine the role of vitamin D supplementation in prevention and treatment of TB.

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DOI: 10.1016/j.jsbmb.2019.105419
PMID: 31255688 [Indexed for MEDLINE]

151: Pandey NN, Shaw M, Sharma A, Ganga KP, Gulati GS. Yet Another Novel Variant of Dual Left Anterior Descending Artery: Type XII. *Heart Lung Circ.* 2019 Oct 24. pii: S1443-9506(19)31456-8. doi: 10.1016/j.hlc.2019.07.022. [Epub ahead of print] PubMed PMID: 31734163.

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Viscero-atrial situs encompasses the laterality, relative position and configuration of the abdominal viscera, the atria of the heart and the tracheobronchial tree. Determining the situs and cardiac position is the first step in the commonly used sequential, segmental approach to the imaging evaluation of congenital heart defects (CHD). Abnormalities of viscerioatrial situs and cardiac position are frequently associated with the presence of complex CHDs and accurate assessment of situs abnormalities can help predict the probability and type of the defect. Multidetector CT (MDCT) angiography, with its multiplanar reformatting and volume rendering techniques, offers accurate information about the morphology and three-dimensional relationships of the various cardiac and extra cardiac structures. In this pictorial essay, we present the MDCT imaging findings of the spectrum of abnormalities of viscerioatrial situs and cardiac position, using a third generation dual source CT scanner.

DOI: 10.1259/bjr.20190231
PMCID: PMC6818198 [Available on 2020-10-01]
PMID: 31271542 [Indexed for MEDLINE]

154: Pandey P, Bhatnagar AK, Mohan A, Sachdeva KS, Vajpayee M, Das BK, Samantaray JC, Guleria R, Singh UB. Insights in tuberculosis immunology: Role of NKT and T regulatory cells. *Int J Mycobacteriol.* 2019 Oct-Dec;8(4):333-340. doi: 10.4103/ijmy.ijmy_141_19. PubMed PMID: 31793502.

Background: Tuberculosis (TB) control is challenging due to poor drug compliance and emerging resistance. The need of the hour is to determine the prediction of disease cure and relapse. Patients' immune response is crucial to the disease outcome. This study was designed to study the immune profile of TB patients during treatment and cure.

Methods: The cross-sectional study included newly diagnosed pulmonary TB patients and healthy controls. Levels of serum cytokines/chemokines (Th1/Th2/Th17) were measured by BD cytometric bead array. The cell surface markers assessed in the study were CD3, CD4, CD8, CD16, CD56, and BD human regulatory T cell cocktail (CD4/CD25/CD127).

Results: Data analysis observed statistically significant differences in CD3dim/CD56 + natural killer T (NKT) among TB patients with significantly low levels in healthy controls and after treatment completion ($P < 0.0001$). The analysis also revealed a high percentage of CD3dim/CD56 + NKT in fast responders. The percentage of T regulatory was found to be high in patients when compared

with healthy controls; the values were statistically significant (0.0002). Interleukin-6 was significantly associated with the disease ($P < 0.0485$). Discussion: A comprehensive understanding of role of CD3dim/CD56+ NKT in antimycobacterial immunity may enable new possibilities for NK cell-based prophylactic and/or therapeutic strategies against TB.

DOI: 10.4103/ijmy.ijmy_141_19
PMID: 31793502

155: Pannu CD, Farooque K, Sharma V, Singal D. Minimally invasive spine surgeries for treatment of thoracolumbar fractures of spine: A systematic review. *J Clin Orthop Trauma*. 2019 Oct;10(Suppl 1):S147-S155. doi: 10.1016/j.jcot.2019.04.012. Epub 2019 Apr 22. Review. PubMed PMID: 31695274; PubMed Central PMCID: PMC6823763.

Purpose: Many minimally invasive surgical (MIS) techniques have been developed for instrumentation of spine. These MIS techniques restore stability, alignment while achieving return to function quite early as compared to open spine surgeries. The main aim of this review was to evaluate role, indications and complications of these MIS techniques in Thoracolumbar and Lumbar fractures. **Methods:** Pubmed search using key words such as "Percutaneous pedicle screw for Thoracolumbar fractures" and "Video Assisted Thoracoscopy, Thoracoscopic, VATS for thoracolumbar, Lumbar and Spine fractures" were used till July 2016 while doing literature search. Authors analyzed all the articles, which came after search; the articles relevant to the topic were selected and used for the study. Both prospective and retrospective case control studies and randomized control trials (RCT's) were included in this review. Case reports and reviews were excluded. Studies demonstrating use of MIS in cases other than spine trauma and studies with lack of clinical follow up were excluded from this review. Variables such as number of patients, operative time and complications were evaluated in each study.

Results: After pubmed search, we found total 68 studies till July 2016 out of which eight studies were relevant for analysis of Video Assisted Thoracoscopy for thoracolumbar and lumbar fractures. Total 72 articles for Percutaneous pedicle screws in thoracolumbar and lumbar fractures were retrieved out of which percutaneous pedicle screws were analyzed in eleven studies and twelve studies involved comparison of percutaneous pedicle screws and conventional open techniques.

Conclusion: Role and Indications of the MIS techniques in spinal trauma are expanding quite rapidly. MIS techniques restore stability, alignment while achieving early return to function and lower infection rates as compared to open spine surgeries. In long term, they provide good kyphosis correction and stable fixation and fusion of spine. They are associated with long learning curve and technical challenges but with careful patient selection and in expert hands, MIS techniques may produce better results than open trauma spine surgeries.

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DOI: 10.1016/j.jcot.2019.04.012
PMCID: PMC6823763 [Available on 2020-10-01]
PMID: 31695274

156: Pathak D, Srivastava AK, Padma MV, Gulati S, Rajeswari MR. Quantitative Proteomic and Network Analysis of Differentially Expressed Proteins in PBMC of Friedreich's Ataxia (FRDA) Patients. *Front Neurosci*. 2019 Oct 14;13:1054. doi: 10.3389/fnins.2019.01054. eCollection 2019. PubMed PMID: 31680804; PubMed Central PMCID: PMC6802492.

Friedreich's ataxia (FRDA) is an autosomal recessive neurodegenerative disorder caused by an expanded (GAA) trinucleotide repeat in the FXN gene. The extended repeats expansion results in reduced transcription and, thereby, decreased expression of the mitochondrial protein, frataxin. Given the ongoing drug trials, identification of reliable and easily accessible biomarkers for monitoring disease progression and therapeutic intervention is a foremost requirement. In this study, comparative proteomic profiling of PBMC proteins from FRDA patients and age- and gender-matched healthy controls was done using 2D-Differential in-Gel Electrophoresis (2D-DIGE). Protein-protein interaction (PPI) was analyzed using BioGRID and STRING pathway analysis tools. Using biological variance analysis (BVA) and LC/MS, we found eight differentially expressed proteins with fold change ≥ 1.5 ; $p \leq 0.05$. Based on their cellular function, the identified proteins showed a strong pathological role in neuroinflammation, cardiomyopathy, compromised glucose metabolism, and iron transport, which are the major clinical manifestations of FRDA. Protein-protein network analysis of differentially expressed proteins with frataxin further supports their involvement in the pathophysiology of FRDA. Considering their crucial role in the cardiac and neurological complications, respectively, the two down-regulated proteins, actin α cardiac muscle 1 (ACTC1) and pyruvate dehydrogenase E1 component subunit β (PDHE1), are suggested as potential prognostic markers for FRDA.

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DOI: 10.3389/fnins.2019.01054

PMCID: PMC6802492

PMID: 31680804

157: Pujari A, Basheer S, Rakheja V, Gagrani M, Saxena R, Phuljhele S, Sharma P. Extraocular muscle surgery on goats' eye: An inexpensive technique to enhance residents' surgical skills. *Indian J Ophthalmol.* 2019 Oct;67(10):1688-1689. doi: 10.4103/ijo.IJO_89_19. PubMed PMID: 31546509; PubMed Central PMCID: PMC6786173.

Hands-on resident surgical training for various ocular procedures is essential to impart good surgical skills to the budding ophthalmologists. Here in this report, we demonstrate a simple and inexpensive technique of performing extraocular muscle surgery on goats' eye. These animal eyes possess soft tissue resemblance to that of human eyes to a greater extent in terms of scleral rigidity, muscle elasticity, its width, thickness, and its insertion onto the sclera. Therefore, rectus muscle recession, resection, and plication surgeries can be performed repeatedly to improve an individual's orientation and practical experience before performing the procedure on human eyes.

DOI: 10.4103/ijo.IJO_89_19

PMCID: PMC6786173

PMID: 31546509

158: Pujari A, Swamy DR, Selvan H, Agarwal D, Sihota R, Gupta S, Gupta N, Dada T. Clinical, ultrasonographic and optical coherence tomography correlation of optic nerve head cupping in glaucoma patients. *Indian J Ophthalmol.* 2019 Oct;67(10):1663-1666. doi: 10.4103/ijo.IJO_24_19. PubMed PMID: 31546504; PubMed Central PMCID: PMC6786225.

Purpose: To ascertain if ultrasound (USG) B-scan examination of the optic nerve head (ONH) can be a useful tool to diagnose and quantify glaucomatous cupping. Methods: A cross-sectional observational study of 48 eyes of 48 patients with clear ocular media and cup-disc ratio of (CDR) ≥ 0.6 were included. The disc was studied by + 90D examination, USG B-scan and ONH Optical coherence tomography (OCT) by three masked observers. Observer-1 assessed the clinical CDR,

observer-2 recorded optic cup diameter on USG B-scan and observer-3 performed ONH OCT to note the software computed average CDR. Measurements of cupping obtained by these 3 methods were compared and their relative strengths determined. The interdependency between variables was further studied using regression analysis. Results: Clinically assessed disc ratios of 0.6, 0.7, 0.8, 0.9, and total corresponded to USG cup measures of 1.02 ± 0.11 mm, 1.23 ± 0.14 mm, 1.35 ± 0.072 mm, 1.45 ± 0.084 mm, 1.75 ± 0.15 mm and OCT average CDR of 0.62 ± 0.087 , 0.68 ± 0.060 , 0.75 ± 0.078 , 0.81 ± 0.036 , 0.89 ± 0.038 , respectively. There was an excellent correlation between the three arms, with Pearson's co-efficient (r) of 0.87, $P < 0.001$ between clinical and USG cupping; $r = 0.89$, $P < 0.001$ between clinical and OCT cupping; and $r = 0.88$, $P < 0.001$ between USG and OCT cupping. A relation of $y = 1.64x + 0.03$ was obtained between them, where y stands for USG cup diameter and x stands for the observed clinical CDR. Conclusion: Ultrasonographic measurement of optic cup diameter corresponds well to clinical ONH cupping. Therefore, it can reliably be used in quantifying ONH cupping in cases of media opacities which preclude optic disc visualization.

DOI: 10.4103/ijo.IJO_24_19

PMCID: PMC6786225

PMID: 31546504

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Traumatic retinal injuries are commonly encountered in most retinal subspecialty clinics. Retinal dialysis, detachment and other complications consequent to blunt trauma are often thought to be due to equatorial expansion of the globe following an antero-posterior compressive force. However, stretching of the globe along the primary anatomical equator may not hold true for the adjusted globe position as a consequence of the protective Bell's phenomenon which gets activated before impact. The upward and outward rolling of the globe likely creates a new equator, with the compressive forces acting along this new plane, thereby leading to stretching along the ocular coats closer to the retinal periphery. Additionally, the coup and countercoup mechanisms with increased vulnerability of temporal sclera predisposes to retinal complications more commonly along the temporal and the nasal retina. Further, retinal complications involving other quadrants can also be explained through understanding of the Bell's phenomenon.

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DOI: 10.1016/j.mehy.2019.109286

PMID: 31443768

160: Punj J. Multiple bilateral ultrasound-guided stellate ganglion blocks to treat acute vasculitis in a recently diagnosed patient of systemic lupus erythematosus. *Indian J Anaesth*. 2019 Oct;63(10):851-855. doi: 10.4103/ija.IJA_331_19. Epub 2019 Oct 10. PubMed PMID: 31649399; PubMed Central PMCID: PMC6798631.

Medical management along with stellate ganglion block is frequently given to prevent the vasculitis of fingers in patients of systemic lupus erythematosus (SLE). Bilateral stellate ganglion block is rarely given due to the concern of phrenic and recurrent laryngeal nerve palsy. In this article, we describe the management of a recently diagnosed SLE patient presented with progressive gangrene of fingers of both upper limbs. Meticulously planned serial bilateral ultrasound-guided stellate ganglion blocks were successfully given to prevent

impending loss of digits with no complications.

Copyright: © 2019 Indian Journal of Anaesthesia.

DOI: 10.4103/ija.IJA_331_19

PMCID: PMC6798631

PMID: 31649399

161: Punjadath S, Madan K, Mohan A, Mittal S. A young man with chronic cough: big is not always beautiful. *Thorax*. 2019 Oct;74(10):1006-1007. doi: 10.1136/thoraxjnl-2019-213360. Epub 2019 Jul 18. PubMed PMID: 31320393.

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Vestibular schwannomas (VSs) are rare in children and, when present, are usually part of neurofibromatosis 2 and bilateral. Sporadic unilateral VSs in the pediatric age group itself are rare in medical literature and giant sporadic unilateral pediatric VSs (>4 cm) are extremely rare. Herein, we describe the largest reported case of giant sporadic left-sided VS in a 10-year-old boy.

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DOI: 10.1016/j.wneu.2019.07.064

PMID: 31306840 [Indexed for MEDLINE]

163: Rai N, Upadhyay AD, Goyal V, Dwivedi S, Dey AB, Dey S. Sestrin2 as serum protein marker and potential therapeutic target for Parkinson's Disease. *J Gerontol A Biol Sci Med Sci*. 2019 Oct 9. pii: glz234. doi: 10.1093/gerona/glz234. [Epub ahead of print] PubMed PMID: 31598652.

Sestrin2 (Sesn2) appears to mediate neuroprotection against Parkinson's disease (PD) associated pathophysiology, however, the mechanism is unknown. This pilot study examines serum Sesn2 level in PD patients and elderly control and also interrogates the rescue effect of *Syzygium aromaticum* extract on the neurotoxicity by paraquat in neuroblastoma cells. The blood sample was collected from 36 PD patients and 54 elderly control and concentration of serum Sesn2 was measured by surface plasmon resonance and western blot. A significantly elevated level of Sesn2 ($p < 0.0001$) was observed in sera of PD group (15.96 ± 2.428 ng/ μ l,) than the control (13.65 ± 2.125 ng/ μ l) which was further confirmed by western blotting. The ROC curve (0.76) determined the threshold value of ≥ 14.58 ng/ μ l for differentiating PD from control. The *Syzygium aromaticum* extract exhibited the rescue effect from paraquat induced toxicity in SH-SY5Y cells. Further, these cells showed dose dependent downregulation of p53, Sesn2 and phosphorylated-AMPK with concomitant increase in phosphorylated-p70S6K level than paraquat treated cells. The differential level of Sesn2 in study subjects proposes its utility as one of the potential serum marker in PD. The ethanolic extract of *Syzygium aromaticum* may serve as a novel platform for management of PD associated neurotoxicity.

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DOI: 10.1093/gerona/glz234
PMID: 31598652

164: Rajagopalan V, Chouhan RS, Pandia MP, Lamsal R, Rath GP. Effect of Intraoperative Blood Loss on Perioperative Complications and Neurological Outcome in Adult Patients Undergoing Elective Brain Tumor Surgery. *J Neurosci Rural Pract.* 2019 Oct;10(4):631-640. doi: 10.1055/s-0039-3399487. Epub 2019 Dec 11. PubMed PMID: 31831982; PubMed Central PMCID: PMC6906102.

Background Major blood loss during neurosurgery can lead to several complications, including life-threatening hemodynamic instabilities. Studies addressing these complications in patients undergoing intracranial tumor surgery are limited. **Materials and Methods** During the study period, 456 patients who underwent elective craniotomy for brain tumor excision were categorized into four groups on the basis of estimated intraoperative blood volume loss: Group A (<20%), Group B (20-50%), Group C (>50-100%), and Group D (more than estimated blood volume). The occurrence of various perioperative complications was correlated with these groups to identify if there was any association with the amount of intraoperative blood loss. **Results** The average blood volume loss was 11% ± 5.3% in Group A, 29.8% ± 7.9% in Group B, 68.3% ± 13.5% in Group C, and 129.1% ± 23.9% in Group D. Variables identified as risk factors for intraoperative bleeding were female gender (p < 0.001), hypertension (p = 0.008), tumor size >5 cm (p < 0.001), high-grade glioma (p = 0.004), meningioma (p < 0.001), mass effect (p = 0.002), midline shift (p = 0.014), highly vascular tumors documented on preoperative imaging (p < 0.001), extended craniotomy approach (p = 0.002), intraoperative colloids use >1,000 mL (p < 0.001), intraoperative brain bulge (p = 0.03), intraoperative appearance as highly vascular tumor (p < 0.001), and duration of surgery >300 minutes (p < 0.001). **Conclusions** Knowledge of these predictors may help anesthesiologists anticipate major blood loss during brain tumor surgery and be prepared to mitigate these complications to improve patient outcome.

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PMCID: PMC6906102
PMID: 31831982

165: Rani K, Mukherjee R, Singh E, Kumar S, Sharma V, Vishwakarma P, Bharti PS, Nikolajeff F, Dinda AK, Goyal V, Kumar S. Neuronal exosomes in saliva of Parkinson's disease patients: A pilot study. *Parkinsonism Relat Disord.* 2019 Oct;67:21-23. doi: 10.1016/j.parkreldis.2019.09.008. Epub 2019 Sep 9. PubMed PMID: 31621600.

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Dengue is the most common arboviral disease affecting many countries worldwide. With endemicity of the disease and huge burden, atypical clinical presentations occur posing high diagnostic and therapeutic dilemma. Emerging neurological complications in dengue fever are reported in recent past Acute disseminated encephalomyelitis (ADEM) is an immune mediated acute demyelinating disorder of the central nervous system following recent infection or vaccination and characterized by multifocal white matter involvement. Early suspicion and diagnosis of such complication is clinical dilemma and it further complicates the clinical scenario. This case report highlights occurrence of such uncommon manifestation of ADEM in commonly occurring dengue fever along with its diagnosis and successful management in a young individual.

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167: Rathore VS, Singh S, Taank P, Khandelwal A, Kaushal A. Clinical Analysis of Propofol, Etomidate and an Admixture of Etomidate and Propofol for Induction of General Anaesthesia. *Turk J Anaesthesiol Reanim.* 2019 Oct;47(5):382-386. doi: 10.5152/TJAR.2019.53806. Epub 2019 May 22. PubMed PMID: 31572988; PubMed Central PMCID: PMC6756308.

Objective: To compare the clinical outcome following induction of general anaesthesia with intravenous (IV) injection of propofol (P), etomidate (E) or a 50% admixture of propofol and etomidate (PE).

Methods: In this prospective, randomised, double-blind controlled study, patients 18-60 years of age who were undergoing elective surgery with general anaesthesia were randomised to receive either propofol 2.5 mg kg⁻¹ IV (group P; n=30), etomidate 0.3 mg kg⁻¹ IV (group E; n=30) or an admixture of etomidate 0.2 mg kg⁻¹ IV and propofol 1 mg kg⁻¹ IV (group PE; n=30) as the induction agent. The haemodynamic response was first recorded at baseline, then at 1 minute following administration the study drug, and 1, 3, 5, 10, 20, 30 and 40 minutes following intubation. Perioperative symptoms such as myoclonus, pain upon injection and/or vomiting upon induction as well as postoperative nausea were recorded.

Results: We observed a decrease in systemic haemodynamics from baseline following induction in group P compared to groups E and PE (p<0.05). Incidence of myoclonus was reduced from 76.6% in group E to 6.6% in group PE (p<0.001). There was also a reduction in reported pain upon injection in group PE compared to group P (p<0.001). Although we found no statistically significant difference between the three groups when assessing postoperative nausea and vomiting, these symptoms were more prevalent in groups E and PE than in group P.

Conclusion: Using an admixture of etomidate and propofol as the induction agent reduced the incidence of side effects observed with use of either drug alone such as pain upon injection, myoclonus and haemodynamic instability.

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DOI: 10.5152/TJAR.2019.53806

PMCID: PMC6756308

PMID: 31572988

168: Ravina M, Saboury B, Chauhan MS, Jacob MJ, Pandit AG, Sanchety N, Werner TJ, Alavi A. Utility of (18) F-FDG PET/CT in pre-surgical risk stratification of patients with breast cancer. *Hell J Nucl Med.* 2019 Sep-Dec;22(3):165-171. doi: 10.1967/s002449911051. Epub 2019 Oct 7. PubMed PMID: 31587025.

OBJECTIVE: To determine the correlation between fluorine-18-fluorodeoxyglucose (18F-FDG) uptake values and clinicopathological prognostic markers using preoperative 18F-FDG positron emission tomography/computed tomography (PET/CT) in primary breast cancer (BC).

SUBJECTS AND METHODS: One hundred and twelve patients with primary BC were studied prospectively. Pretreatment 18F-FDG PET/CT was performed. Maximum standardized uptake values (SUVmax) were compared with various clinicopathological variables.

RESULTS: In a univariate analysis, SUVmax correlated well with the following prognostic variables: T stage, absence of progesterone receptor (PR), absence of estrogen receptor (ER), triple negative lesions (ER/PR and Her 2 negative) and high histologic grade. Metastatic lesions and ductal lesions had higher SUVmax than lobular carcinoma. No significant correlation was found between SUVmax, and human epidermal growth factor receptor 2 (Her-2) status or perineural and lymphovascular invasion. Multivariate analyses showed that breast density, tumor

size and PR negativity were significantly correlated with SUVmax ($P=0.046$ and 0.009 , respectively).

CONCLUSION: The pre-treatment tumor SUVmax could be utilized as an independent imaging biomarker of the tumor aggressiveness and poor prognosis. Risk stratification based on this index could play a pivotal role in alteration of treatment planning, such as neoadjuvant chemotherapy (precision oncology).

DOI: 10.1967/s002449911051

PMID: 31587025

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Background: Cancer and cardiovascular diseases (CVDs) are leading causes of morbidity and mortality. We analyzed national data to examine the prevalence of CVD risk factors among adult cancer survivors in the United States. Methods: Participants included adults ≥ 18 years of age from the National Health and Nutrition Examination Survey 2001-2002 to 2013-2014. CVD risk factors included hypertension, diabetes, dyslipidemia, obesity, smoking, and physical activity. Prevalence of 1, 2, or ≥ 3 CVD risk factors was compared between cancer and noncancer participants. All CVD risk factors were adjusted for age and smoking and additionally for sex. Differences in CVD risk factors among cancer and noncancer participants were identified using logistic regression analysis. Results: Among 35,379 eligible participants, 2906 (8.4%) had a history of cancer. The proportion of participants having a single CVD risk factor was lower among cancer survivors compared with noncancer participants (25.8% vs. 33.9%, $P<0.001$). The proportions of participants having two CVD risk factors (33.5% vs. 24.6%, $P<0.001$) and ≥ 3 CVD risk factors (27.4% vs. 16.4%, $P<0.001$) were higher among cancer survivors. However, these associations lost significance upon adjusting for age. The odds of total hypertension (odds ratio [OR] 1.25, 95% confidence interval [CI]: 1.11-1.40) and total diabetes (OR 1.33, 95% CI: 1.08-1.65) were significantly higher among cancer survivors. Conclusions: Our study showed that adult cancer survivors in the United States had higher levels of CVD risk factors primarily due to age-related factors, in addition to cancer complications. There is a significant need for improved CVD risk assessment and prevention services for cancer survivors.

DOI: 10.1089/met.2018.0137

PMID: 31241405

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173: Sahay P, Kumawat D, Gupta S, Tripathy K, Vohra R, Chandra M, Venkatesh P. Detection and monitoring of subclinical ocular siderosis using multifocal electroretinogram. *Eye (Lond)*. 2019 Oct;33(10):1547-1555. doi: 10.1038/s41433-019-0442-y. Epub 2019 Apr 24. PubMed PMID: 31019264.

BACKGROUND: Although full-field electroretinogram (ffERG) is the gold standard test to detect physiological dysfunction in siderosis, it measures overall retinal function. This study aims to determine if multifocal electroretinogram (mfERG) can detect subclinical siderosis in eyes with an iron intraocular foreign body (IOFB).

METHODS: Twenty eyes of 20 patients with retained iron IOFB, clear ocular media and good visual acuity ($\geq 20/120$) were enrolled in this prospective case-control study. The fellow eyes served as control. These were evaluated with ffERG and mfERG at baseline. Serial mfERG was done till six months after pars plana vitrectomy with IOFB removal. Primary outcomes measures were amplitude and peak time of P1 and N1 wave of mfERG.

RESULTS: The median age was 25 years (range 18-55). Most patients (n=14/20) presented within a month of trauma. Baseline ffERG showed no difference in either 'a' or 'b' wave amplitude or peak time between cases and controls. However, on mfERG, there was a significant decrease in P1 and N1 wave amplitude and delay in P1 wave peak time in $< 2^\circ$ retinal ring in cases as compared to controls (p=0.001, 0.001 and 0.02 respectively) despite variability in results. At 6 months, P1 amplitude showed significant improvement from baseline in cases (p=0.010). However, P1 peak time did not show significant recovery (p=0.65).

CONCLUSIONS: mfERG may reveal subclinical electrophysiological retinal dysfunction in eyes with iron IOFB in cases with normal ffERG. P1 peak time may serve as an electrophysiological marker for past retinal damage.

DOI: 10.1038/s41433-019-0442-y
PMID: 31019264

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175: Sahoo T, Joshi M, Madathil S, Verma A, Sankar MJ, Thukral A. Quality improvement initiative for reduction of false alarms from multiparameter monitors in neonatal intensive care unit. *J Educ Health Promot*. 2019 Oct 24;8:203. doi: 10.4103/jehp.jehp_226_19. eCollection 2019. PubMed PMID: 31807593; PubMed Central PMCID: PMC6852305.

INTRODUCTION: Unnecessary and excessive activation of alarms ("false alarm") in neonatal intensive care unit (NICU) often results in alarm fatigue among health-care professionals, which can potentially result in deleterious effects in sick neonates.

AIMS AND OBJECTIVES: The aim of this study is to reduce the frequency of false alarms from multiparameter monitors (MPM) by 50% from the existing baseline level over a period of 12 weeks.

METHODS: In this quality improvement (QI) project conducted over 1 year (November 2016-October 2017) at All India Institute of Medical Sciences, New Delhi, we collected data on activation of false alarms from MPM (outcome measure) over a period of 2 months in 134 randomly selected observations of 1-h duration (baseline phase [10 days, 20 observations] and developing and testing the changes in five Plan-Do-study-Act (PDSA) cycles over the next 50 days, 114 observations). We also measured the pre- and postassessment of knowledge level in use of MPM among health-care professionals using checklist (process measure). Following that, we continued data collection for next 10 months to check sustenance of the

project.

RESULTS: Baseline characteristics including gestation, birth weight, and sickness level did not vary during the study period. The median (range) number of activation of false alarms/hour/MPM was 23 (18-35) in the baseline phase. This reduced to 22 (17-30), 19 (15-30), 16 (14-30), 14 (8-17), and 9 (6-12) at the end of 1st, 2nd, 3rd, 4th, and 5th PDSA cycles, respectively. In sustenance phase, it could be maintained in target range from January 2017 to October 2017.

CONCLUSIONS: Small sustained changes can contribute a lot in continuous QI in decreasing false alarms and subsequent improvement of neurodevelopmental outcomes discharged neonates.

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DOI: 10.4103/jehp.jehp_226_19

PMCID: PMC6852305

PMID: 31807593

176: Sahu A, Patil V, Sagar R, Bhargava R. Psychiatric Comorbidities in Children with Specific Learning Disorder-Mixed Type: A Cross-sectional Study. *J Neurosci Rural Pract.* 2019 Oct;10(4):617-622. doi: 10.1055/s-0039-1697879. Epub 2019 Nov 11. PubMed PMID: 31844375; PubMed Central PMCID: PMC6908453.

Background Specific learning disorder (SLD) is a neurodevelopmental condition which frequently exhibits with comorbidities of other disorders, including attention deficit hyperactivity disorder (ADHD), conduct disorder, anxiety, and depression. SLD with any comorbidity may affect the expression and severity of the SLD and may make its management difficult. Thus, the present cross-sectional study was planned to examine the psychiatric comorbidities among children with SLD. Materials and Methods The sample consisted of 41 patients aged between 7 and 12 years with a diagnosis of SLD-mixed type. Clinical and psychological assessment included the following tests for behavioral, anxiety, mood, and interpersonal problems: child behavior checklist, Mini-international Neuropsychiatric Interview for Children and Adolescents (MINI-KID), and Conner's 3 Parent Short form-45. Results The mean age of the participants was 9.8 years (standard deviation [SD] = 1.5). About 75.6% of participants were male, and their mean years of education was 5 years (SD = 1.5). Twenty-four percent of children had a history of delayed developmental milestones. Among comorbidities of SLD, association with attention deficit disorder (ADD)/ADHD has been found to be significant along with difficulties in executive function, peer relation, and aggression. Conclusion Children with SLD are likely to exhibit signs of ADHD/ADD and dysfunction in executive function, peer relation, and aggression. The management of comorbid conditions is recommended along with remediation of learning problem to overall educational and behavioral achievements and development of child.

DOI: 10.1055/s-0039-1697879

PMCID: PMC6908453

PMID: 31844375

177: Sahu AK, Bhoi S. White cerebellum: what do you think? *Emerg Med J.* 2019 Oct;36(10):619-642. doi: 10.1136/emermed-2019-208710. PubMed PMID: 31551303.

178: Saini C, Srivastava RK, Kumar P, Ramesh V, Sharma A. A distinct double positive IL-17A(+)/F(+) T helper 17 cells induced inflammation leads to IL17 producing neutrophils in Type 1 reaction of leprosy patients. *Cytokine.* 2020 Feb;126:154873. doi: 10.1016/j.cyto.2019.154873. Epub 2019 Oct 16. PubMed PMID: 31629113.

Type 1 reactions (T1R) an inflammatory condition, of local skin patches in 30-40% leprosy patients during the course of MDT. IL-17A and IL-17F play an important role in regulating skin inflammation through neutrophils. In the present study, we have analyzed 18 of each T1R and Non-reactions (NR) patients through flow cytometry and qPCR. Interestingly we found that, CD3+CD4+ gated IL-17A+IL-17F+ cells were significantly high in T1R in both MLSA stimulated PBMCs and skin lesions as compared to NR leprosy patients. Hierarchical clustering analysis of gene expression showed that CXCL6, CXCL5, CCL20, CCL7, MMP13 and IL-17RB expression were significantly associated with IL-17A and IL-17F expression (Spearman $r^2=0.77$ to 0.98), neutrophils and monocyte markers respectively. In this study, the inflammation noted in lesions of T1R is a different phenotype of Th17 which produce double positive IL-17A+IL17F+ and also contributes IL-17 producing neutrophils and thus would be useful for monitoring, diagnosis and treatment response before reactions episodes.

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DOI: 10.1016/j.cyto.2019.154873

PMID: 31629113

179: Saini S, Kaur C, Pal I, Kumar P, Jacob TG, Thakar A, Roy KK, Roy TS. Morphological development of the human cochlear nucleus. *Hear Res.* 2019 Oct;382:107784. doi: 10.1016/j.heares.2019.107784. Epub 2019 Aug 20. PubMed PMID: 31522073.

Morphological studies in developing brain determine critical periods of proliferation, neurogenesis, gliogenesis, and apoptosis. During these periods both intrinsic and extrinsic pathological factors can hamper development. These time points are not available for the human cochlear nucleus (CN). We have used design-based stereology and determined that 18-22 weeks of gestation (WG) are critical in the development of the human CN. Twenty-three fetuses and seven postnatal brainstems were processed for cresyl violet (CV) staining and immunoexpression of NeuN (neurons), GFAP (astrocytes), Ki-67 (proliferation) and TUNEL (apoptosis) and 3-D reconstruction. The volume of CN, total number of neurons selected profiles and the volume of neurons and their nuclei were estimated. Data were grouped (G) into: G1:18-20 WG, G2: 21-24 WG, G3: 25-28 WG and G4 >29 WG. The dimensions of morphologically identified neurons were also measured. The CN primordium was first identifiable at 10WG. Definitive DCN (Dorsal cochlear nucleus) and VCN (ventral cochlear nucleus) were identifiable at 16 WG. There was a sudden growth spurt in total volume of CN, number of neurons and astrocytes from 18 WG. We also observed an increase in proliferation and apoptosis after 22 WG. The number of neurons identifiable by CV was significantly lower than that by NeuN-immunostaining till 25 WG ($p=0.020$), after which, both methods were equivalent. Eight morphological types of neurons were identifiable by 26 WG and could be resolved into four clusters by volume and diameter. The CN changed orientation from small, flat and horizontal at 10-16 WG to larger and oblique from 18WG onwards. Prevention of exposure to noxious factors at 18-22 WG may be important in preventing congenital deafness.

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DOI: 10.1016/j.heares.2019.107784

PMID: 31522073

180: Sankar J, Das RR, Singh A. Effect of Prehospital Transport Factors on Shock Index, Serum Lactate, and Mortality in Children with Septic Shock: A Prospective Observational Study. *J Emerg Trauma Shock.* 2019 Oct-Dec;12(4):274-279. doi:

10.4103/JETS.JETS_129_18. Epub 2019 Nov 18. PubMed PMID: 31798242; PubMed Central PMCID: PMC6883505.

Context: Many children with septic shock either present late or are recognized late due to various reasons. Shock index (SI) is a valuable screening tool in identifying high-risk septic patients in emergency department. Whether prehospital transport factors affect SI and clinical outcomes has not been evaluated.

Aim: Our aim was to evaluate if prehospital transport-related factors such as mode of transport and referral from another hospital affect the admission SI and mortality in children with septic shock.

Settings and Design: Prospective observational study conducted over 1-year period in the Pediatric Emergency and Intensive Care Unit of a tertiary care teaching hospital.

Subjects and Methods: Children < 17 years of age were evaluated. Data collection included referral status, mode of transport, physiologic (SI and serum lactate), and clinical parameters.

Statistical Analysis Used: Student's t-test was used for analyzing continuous variables. Chi-square/Fischer's exact test was used for analysis of categorical variables. $P < 0.05$ was considered as statistically significant.

Results: Of 51 children, 21 (41%) were referred from other hospitals. Of these, less than half were transported by ambulance unaccompanied by any healthcare personnel. Twenty-six children (43%) died, of which 15 (71%) were referred. The median serum lactate, SI, and mortality were significantly higher in those referred. On multivariate analysis of factors associated with mortality, elevated SI and/or lactate >4 mmol/L and the "referral" status remained significant after adjusting for baseline variables and illness severity.

Conclusions: Children with septic shock referred from other hospitals had higher SI, serum lactate, and mortality rates. Our study highlights the need for improving prehospital care and transportation in children with septic shock.

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DOI: 10.4103/JETS.JETS_129_18

PMCID: PMC6883505

PMID: 31798242

181: Satyarthee GD, Moscote-Salazar LR, Agrawal A. Persistent Enlarged Occipital Sinus with Absent Unilateral Transverse Sinus. *J Neurosci Rural Pract.* 2019 Jul;10(3):519-521. doi: 10.1055/s-0039-1696081. Epub 2019 Oct 7. PubMed PMID: 31595126; PubMed Central PMCID: PMC6779551.

The occipital sinus may occasionally remain patent, but the incidence is extremely low and observed in less than 10% of cases. A persistent patent occipital sinus (POS) may be associated with other venous sinus abnormality. The absence of transverse sinus in association with POS is an extremely rare condition and not reported yet. The neuroradiologist, neurosurgeons, otolaryngologist, and neurologist must be aware of the possible existence of POS and other associated venous sinus anomaly, as its warrants very crucial modification of surgical planning, selection of appropriate approaches, and, additionally, may also critically limit the extent of surgical exposure of target, and may hinder intended extent of surgical excision of tumor and associated possibility of injury to POS, which may produce catastrophic hemorrhage, brain swelling, and neurosurgical morbidity. The authors report a 35-year-old male who underwent suboccipital craniotomy for right-side giant acoustic schwannoma. Following the raising bone flap, a markedly prominent, turgid, occipital sinus was observed, not placed exactly in the midline but deviated to the right side, causing further restraining of dural opening. Surgical nuances and intraoperative difficulty encountered along with pertinent

literature is reviewed briefly.

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PMCID: PMC6779551

PMID: 31595126

182: Sen P, Wu WC, Chandra P, Vinekar A, Manchegowda PT, Bhende P. Retinopathy of prematurity treatment: Asian perspectives. *Eye (Lond)*. 2019 Oct 29. doi: 10.1038/s41433-019-0643-4. [Epub ahead of print] Review. PubMed PMID: 31664193.

Retinopathy of prematurity (ROP) is a vasoproliferative disease of developing retinal vessels that affects premature infants and can lead to severe and irreversible visual loss if left untreated. India and some other Asian countries are in the middle of a 'third ROP epidemic'. Blindness due to ROP is largely preventable if appropriate, adequate and accessible screening programmes are available. Screening of the premature babies is the first step in ROP management. With the increase in use of tele-screening techniques, more premature babies have been brought under the screening network both from urban and rural regions. Laser photocoagulation to the avascular retina using indirect ophthalmoscopy delivery system is the gold standard for ROP treatment and is usually done under topical anaesthesia in the Asian region in contrast to the western world. Use of intravitreal anti-vascular endothelial growth factors (VEGF) although controversial in management of ROP has been found to be effective in various Asian studies as well. ROP surgery in India and other middle-income Asian countries is largely performed only in few tertiary eye care centres. Poor visual prognosis, late presentation with advanced retinal detachments, lack of adequate number of trained paediatric retinal surgeons and paediatric anaesthetists also contribute to this problem. This current paper summarizes the Asian experience of ROP management.

DOI: 10.1038/s41433-019-0643-4

PMID: 31664193

183: Senjam SS, Foster A, Bascaran C, Vashist P. Awareness, utilization and barriers in accessing assistive technology among young patients attending a low vision rehabilitation clinic of a tertiary eye care centre in Delhi. *Indian J Ophthalmol*. 2019 Oct;67(10):1548-1554. doi: 10.4103/ijo.IJO_197_19. PubMed PMID: 31546478; PubMed Central PMCID: PMC6786185.

Purpose: People with visual disability need assistive technology to improve their body functioning and performance. The purpose of the present study was to understand the awareness, use and barriers in accessing the assistive technology among young patients attending visual rehabilitation clinic of a tertiary eye care hospital in Delhi.

Methods: A cross-sectional study was conducted on consecutively recruited patients registered for the first time in visual rehabilitation clinic of the community ophthalmology department of the tertiary eye centre during June and July 2018. A study tool consisting of 42 assistive technologies was developed. Patients were screened for distance visual acuity both presenting and binocular pinhole vision using an 'E' chart with two optotype (6/18, 6/60).

Results: 85 patients (69.4% male) were enrolled from the VR clinic. 83.5% of the patients had a best corrected binocular vision acuity <6/18 to 1/60. There was good awareness of only 2 of the 42 devices (>67% of the participants): near optical magnifiers, walking long canes. There was moderate awareness of 10 devices (34-66% of the participants) and poor awareness of the rest (<33%). Likewise, participants reported moderate usage of 3 out of the 42 devices and poor usage of the remaining devices. Non-availability of devices was the most frequently reported barrier in the study.

Conclusion: The awareness and utilization of assistive technologies for visual disability was poor in patients attending visual rehabilitation clinic. Hospitals could procure assistive technologies and introduce strategies to improve awareness as well as promote utilization.

DOI: 10.4103/ijo.IJO_197_19

PMCID: PMC6786185

PMID: 31546478

184: Shaikh N, Kumar V, Beniwal A. Cataract with posterior capsule rupture following intravitreal injection. *Indian J Ophthalmol*. 2019 Oct;67(10):1729. doi: 10.4103/ijo.IJO_811_19. PubMed PMID: 31546538; PubMed Central PMCID: PMC6786189.

185: Sharma A, Sinha M, Pandey NN, Chandrashekhara SH. Stem cell therapy in critical limb ischemia: Current scenario and future trends. *Indian J Radiol Imaging*. 2019 Oct-Dec;29(4):397-403. doi: 10.4103/ijri.IJRI_385_19. Epub 2019 Dec 31. PubMed PMID: 31949342; PubMed Central PMCID: PMC6958876.

Critical limb ischemia (CLI) represents the most severe manifestation of peripheral arterial disease (PAD). It imposes a huge economic burden and is associated with high short-term mortality and adverse cardiovascular outcomes. Prompt recognition and early revascularization, surgical or endovascular, with the aim of improving the inline bloodflow to the ischemic limb, are currently the standard of care. However, this strategy may not always be feasible or effective; hence, evaluation of newer pharmacological or angiogenic therapies for alleviating the symptoms of this alarming condition is of utmost importance. Cell-based therapies have shown promise in smaller studies; however, large-scale studies, demonstrating definite survival benefits, are entailed to ascertain their role in the management of CLI.

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DOI: 10.4103/ijri.IJRI_385_19

PMCID: PMC6958876

PMID: 31949342

186: Sharma A, Bhatia P, Vyas V. Should We Use DSI or not-What does the PADIS 2018 Guidelines Recommend? *Indian J Crit Care Med*. 2019 Oct;23(10):491. doi: 10.5005/jp-journals-10071-23272. PubMed PMID: 31749562; PubMed Central PMCID: PMC6842840.

187: Sharma A, Goel AD, Sharma PP, Vyas V, Agrawal SP. The Effect of Transversus Abdominis Plane Block for Analgesia in Patients Undergoing Liver Transplantation: A Systematic Review and Meta-Analysis. *Turk J Anaesthesiol Reanim*. 2019 Oct;47(5):359-366. doi: 10.5152/TJAR.2019.60251. Epub 2019 Apr 24. Review. PubMed PMID: 31572985; PubMed Central PMCID: PMC6756312.

Objective: Ultrasound-guided regional anaesthesia using transversus abdominis plane (TAP) block is a newer and safer method that can be used in patients undergoing liver transplant surgeries. This systematic review and meta-analysis was done to quantify the analgesic potential and opioid-sparing capability of TAP block in these patients.

Methods: The studies comparing TAP-block to conventional analgesic regimens for liver transplant were searched. The studies evaluating the comparative 24-h morphine consumption during postoperative period in patients undergoing liver transplant surgeries were searched and included as the primary outcome in the

analysis.

Results: We found two randomised controlled trials and two retrospective studies that on meta-analysis showed that TAP block group had significantly lower requirement of morphine (WMD=27.59 mg; 95% CI: 33.47-21.70) at 24 h for pain mitigation. Also, postoperative nausea and vomiting was lower (RR=0.76; 95% CI: 0.47-1.22) but not statistically significant.

Conclusion: Ultrasound-guided TAP block provides postoperative analgesic efficacy in patients undergoing liver transplant surgeries. This study was registered in International prospective register of systematic reviews [PROSPERO: CRD42018094595].

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DOI: 10.5152/TJAR.2019.60251

PMCID: PMC6756312

PMID: 31572985

188: Sharma A. Current review with evolving management strategies in critical limb ischemia. *Indian J Radiol Imaging*. 2019 Jul-Sep;29(3):258-263. doi: 10.4103/ijri.IJRI_208_19. Epub 2019 Oct 30. PubMed PMID: 31741593; PubMed Central PMCID: PMC6857262.

Critical limb ischemia represents the end stage of peripheral artery disease, which is associated with impaired quality of life and considerable morbidity and mortality. Economical impact of the disease is huge with a substantial burden on patients, healthcare providers, and resources. Varied therapeutic strategies have been employed in the management of these patients. These patients usually have complex multilevel occlusive arteriopathy with significant comorbidities, rendering surgical interventions undesirable in many cases. Recent therapeutic advances with evolving endovascular techniques and gene or cell-based therapies have the potential to dramatically change the therapeutic outlook in these patients.

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DOI: 10.4103/ijri.IJRI_208_19

PMCID: PMC6857262

PMID: 31741593

189: Sharma A, Tyagi S, Gautam SK, Abid M, Kanga U. HLA-A*33:03:01:06 allele identified in an individual from the Kashmiri Brahmin population of North India. *HLA*. 2019 Dec;94(6):524-526. doi: 10.1111/tan.13703. Epub 2019 Oct 7. PubMed PMID: 31576660.

190: Sharma M, Gogia A, Deo SSV, Mathur S. Role of rebiopsy in metastatic breast cancer at progression. *Curr Probl Cancer*. 2019 Oct;43(5):438-442. doi: 10.1016/j.currproblcancer.2018.12.001. Epub 2018 Dec 10. PubMed PMID: 30559028.

Alteration of biomarkers is well-documented in breast cancer at locoregional recurrence or metastasis attributed to tumor heterogeneity and change in biology. There is a lack of literature on alteration of biomarkers in metastatic breast cancer (MBC) at progression. We included 32 patients of upfront MBC. Estrogen receptor, progesterone receptor, and human epidermal growth factor receptor 2/neu documented at baseline and at progression. Median age was 46 (range 26-72) years. Estrogen receptor altered in 6 (18.75%) patients [4 (12.5%) positive to negative and 2 (6.25%) from negative to positive], progesterone receptor altered in 8 (25.3%) patients (6 [18.75%] positive to negative and 2 [6.25%] negative to

positive) and human epidermal growth factor receptor 2/neu altered in 5 (15.6%) patients (all were positive to negative). Therapy was changed as per new receptor status. Documentation of change in receptor status may be justified to determine further therapy and prognosis in MBC at progression.

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DOI: 10.1016/j.currproblcancer.2018.12.001

PMID: 30559028

191: Sharma P, Jain KG, Pandey PM, Mohanty S. In vitro degradation behaviour, cytocompatibility and hemocompatibility of topologically ordered porous iron scaffold prepared using 3D printing and pressureless microwave sintering. Mater Sci Eng C Mater Biol Appl. 2020 Jan;106:110247. doi: 10.1016/j.msec.2019.110247. Epub 2019 Oct 14. PubMed PMID: 31753401.

Biodegradable porous iron having topologically ordered porosity and tailorable properties as per the required application has been the major requirement in the field of biodegradable biomaterials. Hence, in the present study, iron scaffolds with the topologically ordered porous structure were developed and for the first time, the effect of the variation in the topology on the in vitro degradation behaviour, cytocompatibility and hemocompatibility were investigated. Iron scaffold samples were fabricated using a novel process based on the combination of 3D printing and pressureless microwave sintering. To investigate the effect of topology, two different types of topological structures namely Truncated Octahedron (TO) (with variable strut size) and Cubic (C) were used. From the morphological characterization, it was found that fabricated iron scaffold possessed interconnected porosity varying from 50.70%-80.97% which included the random microporosities in the strut and designed macroporosity. Furthermore, it was inferred that the topology of the iron scaffold significantly affected its degradation properties and cytocompatibility. Increase in the weight loss, corrosion rate and reduction in cell viability with the reduction in porosity were obtained. The maximum corrosion rate and weight loss achieved was 1.64 mmpy and 6.4% respectively. Direct cytotoxicity test results revealed cytotoxicity, while prepared iron scaffold samples exhibited excellent hemocompatibility and anti-platelet adhesion property. A comparative study with relevant literature was performed and it was established that the developed iron scaffold exhibited favorable degradation and biological properties which could be tailored to suit appropriate bone tissue engineering applications.

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PMID: 31753401

192: Sharma R, Deepak KK, Gaur P, Joshi D. An optimal interval type-2 fuzzy logic control based closed-loop drug administration to regulate the mean arterial blood pressure. Comput Methods Programs Biomed. 2019 Oct 31;185:105167. doi: 10.1016/j.cmpb.2019.105167. [Epub ahead of print] PubMed PMID: 31715333.

BACKGROUND AND OBJECTIVE: The main aim of this work is to present an optimal and robust controller design in order to improve the drug infusion to the automatic control of mean arterial blood pressure in conditions like critically-ill or post-operative or anaesthesia administration. The physiological systems also have uncertainty issues such as parameter variations with time or external disturbances and noise. Therefore, a controlled drug administration is necessary to regulate the mean arterial blood pressure of a person during surgery/observation. Over the years, the proportional-integral-derivative (PID)

controller is the most commonly used controller in industries due to its easy structure and simplicity. However, this controller does not meet the desired performance with the complex and uncertain plants. Therefore, a robust controller is required to regulate the physiological variables that are uncertain in nature and can affect the human life.

METHODS: In this work, a hybrid control scheme consisting of an interval type-2-fuzzy logic controller which acts as pre-compensator to the traditional PID controller is presented, to regulate the mean arterial blood pressure of a patient by administering the drug sodium nitroprusside in a controlled manner. An effective and well-established nature-inspired optimization technique namely cuckoo search algorithm is employed for obtaining the optimal parameters for the presented scheme.

RESULTS: Simulation results are presented to show the effectiveness and robustness of proposed interval type-2-fuzzy logic controller based PID controller scheme, for maintaining the mean arterial pressure to 100mmHg within considerable limit through SNP infusion. The results are further compared with other two controllers namely type-1 fuzzy logic based PID and traditional PID controllers for the parameter variations and external noise.

CONCLUSION: In this study, the proposed interval type-2-fuzzy logic controller pre-compensator based PID controller provides an effective control than traditional type-1 fuzzy logic based control scheme and PID controller in terms of overshoot, settling-time and error which are the prime performance objectives of the closed-loop controlled drug delivery of human blood pressure. The presented study provides a firm base for initial design considerations for development of a low-cost closed-loop drug delivery system for blood pressure regulation.

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193: Sharma R. Continuous Metabolic Syndrome Score in Children: How Useful is it? *Indian J Pediatr.* 2019 Oct;86(10):881-882. doi: 10.1007/s12098-019-03047-7. Epub 2019 Aug 3. PubMed PMID: 31378001.

194: Sharma S, Gupta DK. Tissue Engineering and Stem Cell Therapy in Pediatric Urology. *J Indian Assoc Pediatr Surg.* 2019 Oct-Dec;24(4):237-246. doi: 10.4103/jiaps.JIAPS_77_18. Review. PubMed PMID: 31571753; PubMed Central PMCID: PMC6752070.

The rapidly expanding field of tissue engineering along with stem cell therapy has a promising future in pediatric urological conditions. The initial struggle seemed difficult in renal regeneration but a functional biounit has been developed. Urine excretion has been demonstrated successfully from stem cell-generated embryonic kidneys. Three-dimensional (3D) stem cell-derived organoids are the new paradigm in research. Techniques to regenerate bladder tissue have reached the clinic, and the urethra is close behind. 3D bioprinted urethras would soon be available. Artificial germ cells produced from mouse pluripotent stem cells have been shown to give rise to live progeny. Myoblast and fibroblast therapy has been safely and effectively used for urinary incontinence. Stress urinary incontinence has been clinically treated with muscle-derived stem cells. Skeletal muscle-derived stem cells have been shown to get converted into smooth muscle cells when implanted into the corpora cavernosa in animal models. This review encompasses the various experimental and clinical developments in this field that can benefit pediatric urological conditions with the contemporary

developments in the field.

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DOI: 10.4103/jiaps.JIAPS_77_18

PMCID: PMC6752070

PMID: 31571753

195: Sharma V, Vanidassane I. Erdafitinib in Urothelial Carcinoma. *N Engl J Med*. 2019 Oct 17;381(16):1593-1594. doi: 10.1056/NEJMc1911187. PubMed PMID: 31618551.

196: Shekhar S, Dey S. Induction of p73, Δ 133p53, Δ 160p53, pAKT lead to neuroprotection via DNA repair by 5-LOX inhibition. *Mol Biol Rep*. 2020 Jan;47(1):269-274. doi: 10.1007/s11033-019-05127-5. Epub 2019 Oct 28. PubMed PMID: 31659693.

The inflammatory process plays a key role in neurodegenerative disorder. The inflammatory molecule, 5-lipoxygenase (5-LOX), protein is involved in the pathologic phenotype of AD which includes A β amyloid deposition and tau hyperphosphorylation. This study aims to identify the mechanistic role in neuroprotection by 5-LOX inhibitor in neurotoxic SH-SY5Y cell line model by evaluating different cell survival pathway. The neurotoxic SH-SY5Y cells were developed by the treatment of A β 25-35. The cells were then treated with 5-LOX peptide inhibitor, YWCS to prevent neurotoxicity reported earlier from our lab. The effect of 5-LOX inhibition on cell survival pathways were determined by western blot experiment with different doses of peptide by using polyclonal antibody of p53, anti-Akt and anti-phosphorylated Akt. Immunoprecipitation and mass spectroscopic studies were done to identify the altered proteins appeared on the blot. Over expression of phosphorylated Akt and 3 bands on p53 lane blot other than p53 were observed. Three bands were identified as isoforms of p53 which correspond to p73, Δ 133p53 and Δ 160p53 in the cells treated only with 80 μ M of YWCS compare to untreated cells. However, no alteration of total p53 and Akt were observed in treated cells. The results exposed the novel mechanistic pathway of neuroprotection by 5-LOX inhibition is likely to be mediated by DNA DSB repair through p53 isoforms and PI3K/Akt pathway. Our finding has opened a new window in the therapeutic approach for the prevention of AD.

DOI: 10.1007/s11033-019-05127-5

PMID: 31659693

197: Shivasabesan G, O'Reilly GM, Mathew J, Fitzgerald MC, Gupta A, Roy N, Joshipura M, Sharma N, Cameron P, Fahey M, Howard T, Cheung Z, Kumar V, Jarwani B, Soni KD, Patel P, Thakor A, Misra M, Gruen RL, Mitra B; Australia-India Trauma Systems Collaboration (AITSC). Establishing a Multicentre Trauma Registry in India: An Evaluation of Data Completeness. *World J Surg*. 2019 Oct;43(10):2426-2437. doi: 10.1007/s00268-019-05039-2. PubMed PMID: 31222639.

BACKGROUND: The completeness of a trauma registry's data is essential for its valid use. This study aimed to evaluate the extent of missing data in a new multicentre trauma registry in India and to assess the association between data completeness and potential predictors of missing data, particularly mortality. **METHODS:** The proportion of missing data for variables among all adults was determined from data collected from 19 April 2016 to 30 April 2017. In-hospital physiological data were defined as missing if any of initial systolic blood pressure, heart rate, respiratory rate, or Glasgow Coma Scale were missing. Univariable logistic regression and multivariable logistic regression, using manual stepwise selection, were used to investigate the association between

mortality (and other potential predictors) and missing physiological data. RESULTS: Data on the 4466 trauma patients in the registry were analysed. Out of 59 variables, most (n=51; 86.4%) were missing less than 20% of observations. There were 808 (18.1%) patients missing at least one of the first in-hospital physiological observations. Hospital death was associated with missing in-hospital physiological data (adjusted OR 1.4; 95% CI 1.02-2.01; p=0.04). Other significant associations with missing data were: patient arrival time out of hours, hospital of care, 'other' place of injury, and specific injury mechanisms. Assault/homicide injury intent and occurrence of chest X-ray were associated with not missing any of first in-hospital physiological variables. CONCLUSION: Most variables were well collected. Hospital death, a proxy for more severe injury, was associated with missing first in-hospital physiological observations. This remains an important limitation for trauma registries.

DOI: 10.1007/s00268-019-05039-2

PMID: 31222639 [Indexed for MEDLINE]

198: Shroff M, Gupta AK. Enhancing Treatment and Care of Children Using Pediatric Radiology. *Indian J Pediatr.* 2019 Oct;86(10):921-922. doi: 10.1007/s12098-019-02965-w. Epub 2019 Apr 26. PubMed PMID: 31028532.

199: Shukla D, Mandal PK, Tripathi M, Vishwakarma G, Mishra R, Sandal K. Quantitation of in vivo brain glutathione conformers in cingulate cortex among age-matched control, MCI, and AD patients using MEGA-PRESS. *Hum Brain Mapp.* 2020 Jan;41(1):194-217. doi: 10.1002/hbm.24799. Epub 2019 Oct 4. PubMed PMID: 31584232.

Oxidative stress (OS) plays an important role in Alzheimer's disease (AD) and glutathione (GSH) mitigates this effect by maintaining redox-imbalance and free-radical neutralization. Quantified brain GSH concentration provides distinct information about OS among age-matched normal control (NC), mild cognitive impairment (MCI) and AD patients. We report alterations of in vivo GSH conformers, along with the choline, creatine, and N-acetylaspartate levels in the cingulate cortex (CC) containing anterior (ACC) and posterior (PCC) regions of 64 (27 NC, 19 MCI, and 18 AD) participants using MEScher-GARwood-Point-RESolved spectroscopy sequence. Result indicated, tissue corrected GSH depletion in PCC among MCI (p = .001) and AD (p = .028) and in ACC among MCI (p = .194) and AD (p = .025) as compared to NC. Effects of the group, region, and group×region on GSH with age and gender as covariates were analyzed using a generalized linear model with Bonferroni correction for multiple comparisons. A significant effect of group with GSH depletion in AD and MCI was observed as compared to NC. Receiver operator characteristic (ROC) analysis of GSH level in CC differentiated between MCI and NC groups with an accuracy of 82.8% and 73.5% between AD and NC groups. Multivariate ROC analysis for the combined effect of the GSH alteration in both ACC and PCC regions provided improved diagnostic accuracy of 86.6% for NC to MCI conversion and 76.4% for NC to AD conversion. We conclude that only closed GSH conformer depletion in the ACC and PCC regions is critical and constitute a potential biomarker for AD.

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DOI: 10.1002/hbm.24799

PMID: 31584232

200: Siddharth V, Gupta SK, Agarwala S, Satpathy S, Goel P. Outcome of Care Provided in Neonatal Surgery Intensive Care Unit of a Public Sector Tertiary Care Teaching Hospital of India. *J Indian Assoc Pediatr Surg.* 2019

Oct-Dec;24(4):257-263. doi: 10.4103/jiaps.JIAPS_177_18. PubMed PMID: 31571756; PubMed Central PMCID: PMC6752072.

Aims: There is limited literature on the outcome of care in intensive care units (ICUs), especially when it comes to neonatal surgical units. Hence, this study was aimed to observe the outcome of care provided in the neonatal surgery ICU (NSICU) at an apex tertiary care teaching institute of North India.

Methods: A descriptive, observational study was carried out through retrospective medical record analysis of all the patients admitted in NSICU from January to June 2011.

Results: In NSICU, from January to June 2011, 85 patients were admitted. More than two-third (69.9%) patients were admitted through the emergency department. Of the total admitted patients, 69.9% were male. Mean and median age of the admitted patients were 6.31 and 2 days (range 0-153 days), respectively. The most common diagnosis was esophageal atresia with tracheoesophageal fistula (36.1%). Within a day of admission at NSICU, 88% patients underwent surgical intervention. Of the total admitted patients, 56.6% required mechanical ventilation with 3.57 days (range 0-31 days) of mean duration of mechanical ventilation. Reintubation rate (within 48 h of extubation) was observed to be 15.7%, and 27.7% (23) of the patients required vasopressor support during their NSICU stay. Patients who developed postoperative complications were 34.25%, with the most common being wound infection/discharge/dehiscence. Two patients were readmitted within 72 h of their discharge/transfer out from the NSICU.

Conclusion: NSICU survival rate was 85.5% and net death rate was observed to be 14.5%. Sepsis was the major reason for mortality in NSICU.

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PMCID: PMC6752072
PMID: 31571756

201: Sidharth, Sharma S, Jain P, Mathur SB, Malhotra RK, Kumar V. Status Epilepticus in Pediatric patients Severity Score (STEPSS): A clinical score to predict the outcome of status epilepticus in children- a prospective cohort study. *Seizure*. 2019 Oct;71:328-332. doi: 10.1016/j.seizure.2019.09.005. Epub 2019 Sep 11. PubMed PMID: 31536850.

PURPOSE: In adults, the Status Epilepticus Severity Score (STESS), a clinical score, has been shown to be a good predictor of outcome and treatment response. We devised a pediatric modification of this score: the Status Epilepticus in Pediatric patients Severity Score (STEPSS) and evaluated it in children with status epilepticus.

METHODS: In this prospective study, children aged 1 month to 18 years presenting with seizure duration \geq 5min or actively convulsing to the emergency room were enrolled. STEPSS score was calculated at the time of admission. Outcomes included death, the Pediatric Overall Performance Category (POPC) at discharge and treatment response. The diagnostic utility of the STEPSS score to predict unfavourable outcome was evaluated.

RESULTS: One-hundred and forty children (mean age 5.8 years) were enrolled. Seven children died and overall 15 children had an unfavourable outcome. The predictive accuracy of STEPSS at a cut-off of >3 : for unfavourable outcome (POPC score \geq 3) - sensitivity (0.93 [95% CI: 68, 99.8]), specificity (0.81 [95% CI: 0.73, 0.87]), PPV (0.37 [95% CI: 0.22, 0.54]), NPV (0.99 [95% CI: 0.95-1.0]), positive likelihood ratio (4.86), F1 score (0.530); for death - sensitivity (0.86 [95% CI: 0.42, 0.99]), specificity (0.76 [95% CI: 0.68-0.83]), PPV (0.16 [95% CI: 0.06, 0.31]), NPV (0.99 [95% CI: 0.95, 1.0]), F1 score (0.270).

CONCLUSIONS: The STEPSS, a simple bedside clinical score, was found to be useful

to predict the outcome and treatment response in children with status epilepticus.

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PMID: 31536850

202: Sikka K, Singh CA, Agrawal R, Kumar R, Thakar A, Sharma SC. Acquired Non-malignant Cervical Trachea-Esophageal Fistula: A Case Series. *Indian J Otolaryngol Head Neck Surg.* 2019 Oct;71(Suppl 1):286-290. doi: 10.1007/s12070-018-1281-z. Epub 2018 Mar 13. PubMed PMID: 31741974; PubMed Central PMCID: PMC6848704.

Acquired non-malignant trachea-esophageal fistula (TEF) of cervical oesophagus is rare. Surgical closure of fistula is the standard treatment of choice. Our experience in management of such cases is presented. Five cases of acquired cervical TEF of varying etiology were retrospectively analysed. Two patients had history of migrated endoluminal stent. All the patients were treated by trans-cervical repair with muscle interposition. Tracheal Stenosis in two patients was managed concurrently. Successful repair was achieved in four cases. One patient with chronic obstructive pulmonary disease and active leprosy has residual fistula. Of the two patients with tracheal stenosis correction one was decannulated 6 month later and second has stent in situ. Post-operative vocal cord palsy occurred in one patient. Transcervical repair with muscle interposition is treatment of choice in cases of acquired nonmalignant cervical tracheoesophageal fistulas. Endoluminal stents have high tendency to migrate and are not recommended.

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DOI: 10.1007/s12070-018-1281-z
PMCID: PMC6848704 [Available on 2020-10-01]
PMID: 31741974

203: Singal AK, Ramakrishnan S, Bhargava B. An Historic ECG From the Past. *Circulation.* 2019 Oct 22;140(17):1437-1440. doi: 10.1161/CIRCULATIONAHA.119.042892. Epub 2019 Oct 21. PubMed PMID: 31634008.

204: Singh A, Kumar R, Bhalla AS, Goyal A, Sagar P. Transverse Cervical Artery Pseudoaneurysm: An Unusual Delayed Complication of Radical Neck Dissection. *Indian J Otolaryngol Head Neck Surg.* 2019 Oct;71(Suppl 1):348-351. doi: 10.1007/s12070-018-1305-8. Epub 2018 Mar 20. PubMed PMID: 31741984; PubMed Central PMCID: PMC6848560.

Pseudoaneurysm formation in the transverse cervical artery, post radical neck dissection, leading to massive hemorrhage, is a rare but life threatening occurrence. We report a patient with pseudoaneurysm of transverse cervical artery, post salvage radical neck dissection, presenting with recurrent and significant hemorrhage after 3 weeks of surgery. A pseudoaneurysm involving transverse cervical artery was revealed by digital subtraction angiography and treated by endovascular coil embolization.

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DOI: 10.1007/s12070-018-1305-8

PMCID: PMC6848560 [Available on 2020-10-01]
PMID: 31741984

205: Singh A, Vanathi M, Kishore A, Gupta N, Tandon R. Evaluation of strip meniscometry, tear meniscus height and depth in the diagnosis of dry eye disease in asian Indian eyes. *Ocul Surf.* 2019 Oct;17(4):747-752. doi: 10.1016/j.jtos.2019.07.002. Epub 2019 Jul 3. PubMed PMID: 31276830.

PURPOSE: Evaluate role of Strip Meniscometry (SMT) and lower tear meniscus [height (LTMH) & depth (LTMD)] in diagnosis of Dry Eye Disease (DED) and its comparison with TBUT.

METHODS: In a prospective observational cross-sectional study of 120 eyes [60 eyes of 30 DED (Group 1) & 60 eyes of 30 controls (Group 2)] TBUT, Schirmer's, SMT, LTMH and LTMD was done. Subjects >18 years diagnosed with DED (aqueous deficient) as per Tear film and Ocular surface society-Dry Eye Workshop (TFOS DEWS) II protocol and Ocular surface disease Index (OSDI) questionnaire, with no associated systemic risk factor and previous ocular medical/surgical treatment were included as cases and subjects with no history of ocular surface disease as controls. The data was analyzed using t-test & receiver operating characteristic curve.

RESULTS: TBUT & Schirmer's values were significantly lower in group 1 ($p < 0.05$). SMT was 2.28 ± 1.28 (Range 0-6) & 8.11 ± 1.39 (Range 3-10) in group 1 & 2 respectively ($p < 0.05$). LTMH was $169.32 \pm 29.84 \mu\text{m}$ (Range 85.78-209.11) and $234.41 \pm 19.51 \mu\text{m}$ (Range 203.89-289.53) in Group 1 & 2 respectively ($p < 0.05$). LTMD was $144.32 \pm 33.60 \mu\text{m}$ (Range 57.49-190.12) and $206.69 \pm 14.17 \mu\text{m}$ (Range 187.12-251.50) in Group 1 & 2 respectively ($p < 0.05$). The SMT, LTMH and LTMD showed a cutoff value of $< 5\text{mm}$ (AUC 0.994, sensitivity 96.7%, specificity 96.7%), $204.96 \mu\text{m}$ (AUC 0.998, sensitivity 98.3%, specificity 96.7%) & $190 \mu\text{m}$ (AUC 0.995, sensitivity 96.7%, specificity 95%) respectively.

CONCLUSION: SMT, ASOCT, LTMD & LTMH are useful non invasive diagnostic tests for DED comparable with TBUT.

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DOI: 10.1016/j.jtos.2019.07.002
PMID: 31276830

206: Singh D, Ganger A, Gupta N, Vanathi M, Khadgawat R, Tandon R. Primary Bullous Keratopathy in a Patient With Werner Syndrome Treated With Corneal Transplant. *Exp Clin Transplant.* 2019 Oct;17(5):699-701. doi: 10.6002/ect.2017.0163. Epub 2018 Mar 9. PubMed PMID: 29534662.

Here, we present, to the best of our knowledge, the first case of Werner syndrome with corneal blindness due to bilateral primary bullous keratopathy. Werner syndrome is a rare autosomal recessive disorder characterized by features of premature aging, insulin-dependent diabetes mellitus, osteoporosis, atherosclerosis, hypergonadotrophic hypogonadism, hypertriglyceridemia, scleroderma-like skin changes, and sarcomas. Among ocular manifestations, cataracts, cystoid macular edema, and retinal detachment have been reported. Because these patients show features of premature aging, they have decreased corneal endothelial function and delayed fibroblast growth. To date, there are few reports of wound dehiscence, bleb formation, and bullous keratopathy following surgical insult that have usually occurred after cataract surgery in patients with Werner syndrome. There have been no reports in the literature regarding Werner syndrome presenting with primary corneal decompensation without any inciting factor. Our patient with Werner syndrome had primary bilateral bullous keratopathy and bilateral corneal blindness for 10 years and was

eventually rehabilitated by corneal transplant. Hence, this case highlights the importance of early referral of such patients to the ophthalmologist for prompt diagnosis and early treatment so that blindness could be avoided.

DOI: 10.6002/ect.2017.0163

PMID: 29534662

207: Singh MK, Singh L, Chosdol K, Pushker N, Saini N, Meel R, Bakhshi S, Sen S, Kashyap S. Differential expression of p52 and RelB proteins in the metastatic and non-metastatic groups of uveal melanoma with patient outcome. *J Cancer Res Clin Oncol*. 2019 Dec;145(12):2969-2982. doi: 10.1007/s00432-019-03052-5. Epub 2019 Oct 14. PubMed PMID: 31612319.

PURPOSE: Non-canonical NFκB (NC-NFκB) pathway plays an influential role in metastasis, which promotes cancer proliferation and progression. The aim of the study was to examine the expression of NC-NFκB proteins and their correlation with clinicopathological factors associated with metastatic cases of uveal melanoma (UM) and with the patient outcome.

METHOD: Expression of NC-NFκB proteins (p52, RelB, and co-expression of p52/RelB) was evaluated in 75 formalin-fixed cases of uveal melanoma by immunohistochemistry. Validation of nuclear immunoreactivity was done by western blotting. Transcriptional status of NC-NFκB genes was assessed in 60 fresh tumor tissues by quantitative real-time PCR. Co-immunoprecipitation was performed to determine the presence of native p52/RelB heterodimer in UM. Prognostic relevance was determined using Cox proportional hazard and Kaplan-Meier methods.

RESULTS: Immunohistochemical expression of p52, RelB, and their co-expression was observed in 81%, 68.7%, 56.2% of metastatic cases, respectively, while their expression was seen only in 38%, 33% and 30% of non-metastatic cases. Loss of BAP-1 was correlated with expression of p52 and RelB proteins.

Co-immunoprecipitation assay confirmed the putative interaction of p52 with RelB protein in metastatic cases of uveal melanoma. Co-expression of p52/RelB and expression of p52 protein was significantly correlated with decreased metastasis-free survival (MFS) ($p=0.004$; $p=0.002$) and overall survival (OS) ($p=0.004$; $p=0.032$), while the RelB expression only correlated with reduced MFS ($p=0.003$).

CONCLUSION: Our data showed that non-canonical NFκB proteins were significantly higher in metastatic cases and associated with poor outcome of the patients. Furthermore, the p52 protein could be used as a potential therapeutic biomarker for metastatic cases in uveal melanoma.

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PMID: 31612319 [Indexed for MEDLINE]

208: Singh NK, Sharma V, Trikha V, Gamanagatti S, Roy A, Balawat AS, Aravindh P, Diwakar AR. Is PFNA-II a better implant for stable intertrochanteric fractures in elderly population? A prospective randomized study. *J Clin Orthop Trauma*. 2019 Oct;10(Suppl 1):S71-S76. doi: 10.1016/j.jcot.2019.02.004. Epub 2019 Feb 7. PubMed PMID: 31700206; PubMed Central PMCID: PMC6823828.

Introduction: Intertrochanteric fracture is one of the most common and severe fractures occurring in the elderly population. We conducted a randomized prospective study to compare the functional and radiological outcome of Proximal Femoral Nail anti-rotation-Asia (PFNA-II) and Dynamic Hip screw (DHS) used in fixation of stable (AO type 31 A1-A2.1) intertrochanteric fractures in elderly. **Methods:** 60 elderly patients with stable intertrochanteric fractures treated with DHS and PFNA-II between August 2014 to Dec 2016 were enrolled in the study. Intraoperative variables-surgical time, blood loss, fluoroscopy time and post-operative variables-union rate, change in neck shaft angle (NSA), functional

outcome in terms of Modified Harris Hip Score (HHS) & SF-12, complication rate and mortality at one year were studied and compared between both the groups.

Results: The mean age of patients in our study was 70.96 years. We found patients treated with DHS required significantly longer surgical time and had more blood loss compared to PFNA-II group. However, there was no significant difference in both the groups in terms of intra-operative fluoroscopy time, change in neck shaft angle, union rate, complication rate and Modified Harris Hip Score & SF-12 at three months; six months and one year follow-up.

Conclusions: Both DHS and PFNA-II can be used effectively in the treatment of elderly patients with stable intertrochanteric fracture with comparable outcome. However, in high-risk elderly patients requiring shorter surgical time and less blood loss, PFNA-II can be used.

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PMCID: PMC6823828 [Available on 2020-10-01]

PMID: 31700206

209: Singh S, Madan R, Singh MK, Thakar A, Sharma SC. Head-and-neck paragangliomas: An overview of 54 cases operated at a tertiary care center. *South Asian J Cancer*. 2019 Oct-Dec;8(4):237-240. doi: 10.4103/sajc.sajc_339_18. PubMed PMID: 31807486; PubMed Central PMCID: PMC6852631.

Background: Head-and-neck paragangliomas (HNP's) are rare autonomic neoplasms associated with high morbidity and mortality. We aimed to study epidemiology, clinicopathological correlation, and management of HNP to assist clinicians in advocating the most appropriate therapy.

Materials and Methods: Epidemiological parameters, including age and sex distribution, clinical presentation, tumor classification, familial predisposition, multicentricity, and treatment modalities adopted, were analyzed in this retrospective analysis of 54 patients of HNP.

Results: Age ranged from 15 to 85 years, with a female preponderance. Among all HNP, carotid body tumor (CBT) (48.1%) was the most common, followed by Glomus Jugulare (24.1%). Majority of the patients presented with neck swelling associated with nerve palsies. A preoperative neurological deficit was most commonly observed with Glomus jugulotympanicum (68.4%).

Conclusion: CBT is the largest and most common paraganglioma in our study. The familial occurrence warrants meticulous screening for multifocality. Tumor location, neurovascular involvement, malignant potential, and patient factors should guide the designing of management options.

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DOI: 10.4103/sajc.sajc_339_18

PMCID: PMC6852631

PMID: 31807486

210: Singh V, Guleria P, Malik PS, Mohan A, Thulkar S, Pandey RM, Luthra K, Arava S, Ray R, Jain D. Epidermal growth factor receptor (EGFR), KRAS, and BRAF mutations in lung adenocarcinomas: A study from India. *Curr Probl Cancer*. 2019 Oct;43(5):391-401. doi: 10.1016/j.currproblcancer.2018.12.003. Epub 2018 Dec 17. PubMed PMID: 30591192; PubMed Central PMCID: PMC6579716.

Mitogen-Activated Protein (MAP) Kinase pathway involves several oncogenic genes which can serve as potential targets for therapy. Therefore, aim of the present study is to analyze mutations in the MAP Kinase pathway in pulmonary adenocarcinoma (ADCA) of Indian patients along with clinico-pathologic

correlation and determination of the survival status in patients receiving therapy. Blocks and slides of 125 pulmonary ADCA of last 5 years were retrieved. Histo-morphology and tumor content were determined. EGFR, KRAS, BRAF and MEK1 genes were analyzed using Sanger sequencing and Real-time polymerase chain reaction (PCR). Clinico-pathologic correlation and survival analysis were performed. Fifty-eight (46.4%) patients harbored genetic mutations of which 49 had single somatic mutations, 5 had multiple exonic and 4 showed coexisting EGFR and KRAS mutations. EGFR mutations were seen in 24.8%, KRAS in 19.2% and BRAF (non-V600E) in 2.4% cases. There was no difference in progression-free survival of wild-type/single mutations when compared with multiple/ coexisting mutations (P=0.09). However, the P value may indicate borderline correlation. To conclude, EGFR and KRAS mutations may coexist in the same patient in lung ADCA. Multiple exonic mutations of KRAS gene formed substantial percentage of our cohort, requiring further exploration. Lung ADCA harbouring BRAF mutations are commonly non-V600E. Testing of all major genetic driver mutations of lung ADCA irrespective of histology and other demographic characteristics is necessary.

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DOI: 10.1016/j.currproblcancer.2018.12.003

PMCID: PMC6579716

PMID: 30591192

211: Singhal D, Nagpal R, Maharana PK. Comment on: "Outcomes of a Modified Technique for Successful Pneumatic Dissection in Pediatric Eyes With Corneal Scars". *Cornea*. 2019 Oct;38(10):e43. doi: 10.1097/ICO.0000000000002056. PubMed PMID: 31299667.

212: Singhal S, Kumar S, Sharma DN, Mathur S. Peritoneal metastasis in Stage IB1 adenocarcinoma cervix: A rare entity. *J Cancer Res Ther*. 2019 Oct-Dec;15(6):1415-1417. doi: 10.4103/jcrt.JCRT_830_18. PubMed PMID: 31898685.

The presence of ovarian or peritoneal metastasis in early-stage cervical malignancy is a rare entity. It often poses a diagnostic challenge whether it is a synchronous primary tumor or a metastatic lesion. A 63-year-old postmenopausal woman presented with Stage 1B1 carcinoma cervix with ascites, and a 5.8 cm × 4.2 cm × 3.5 cm left solid adnexal mass. She underwent Type III radical hysterectomy, excision of peritoneal mass, with bilateral pelvic and paraaortic lymphadenectomy and infracolic omentectomy. On histopathology, cervix showed features of adenocarcinoma, and the peritoneal mass revealed similar histomorphology as cervical growth with metastatic tumor deposits in omentum. Immunohistochemistry (IHC) was utilized to determine the origin of mass. The early stage disease and histology may not always predict the distant metastasis. Therefore, a thorough pretreatment evaluation, meticulous intraoperative assessment, and IHC are mandatory for optimum management and prognostication.

DOI: 10.4103/jcrt.JCRT_830_18

PMID: 31898685

213: Sinha M, Pandey NN, Sharma A. Anomalies of the Coronary Sinus and Its Tributaries: Evaluation on Multidetector Computed Tomography Angiography. *J Thorac Imaging*. 2019 Oct 29. doi: 10.1097/RTI.0000000000000456. [Epub ahead of print] PubMed PMID: 31688460.

Imaging of the coronary sinus and its tributaries has gained increasing significance consequent to the development of an array of electrophysiological and interventional procedures using the cardiac venous system, including ablation

for arrhythmias, left ventricular pacing, and in the administration of retrograde cardioplegia. Knowledge of the normal anatomy and the possible anomalies and their clinical significance is imperative to circumvent possible complications. A number of coronary sinus (CS) anomalies, both symptomatic and asymptomatic, have been observed with the widespread use of noninvasive cross-sectional imaging for the imaging of the heart. However, it should be kept in mind that even clinically occult lesions of the CS can cause disastrous complications in specific interventions. Hence, a thorough knowledge of the expected anatomy and the possible anomalies involving the CS along with their clinical significance is imperative for the reporting radiologists and the concerned physicians. In this review, we briefly describe the relevant anatomy and embryology and describe the gamut of anomalies pertaining to the CS and its draining veins on multidetector computed tomography angiography along with their clinical importance.

DOI: 10.1097/RTI.0000000000000456

PMID: 31688460

214: Sinha M, Pandey NN, Rajagopal R, Sharma A. A rare configuration of a complete vascular ring with the ductus arteriosus arising from the aberrant subclavian artery. *BMJ Case Rep.* 2019 Oct 23;12(10). pii: e232668. doi: 10.1136/bcr-2019-232668. PubMed PMID: 31645389.

215: Sinha M, Pandey NN, Sharma A. Unique subaortic course of anomalous left circumflex artery associated with double chamber right ventricle. *BMJ Case Rep.* 2019 Oct 23;12(10). pii: e232664. doi: 10.1136/bcr-2019-232664. PubMed PMID: 31645388.

216: Sinha R, Ray BR, Sharma A, Pandey RK, Punj J, Darlong V, Trikha A. Comparison of the C-MAC video laryngoscope size 2 Macintosh blade with size 2 C-MAC D-Blade for laryngoscopy and endotracheal intubation in children with simulated cervical spine injury: A prospective randomized crossover study. *J Anaesthesiol Clin Pharmacol.* 2019 Oct-Dec;35(4):509-514. doi: 10.4103/joacp.JOACP_106_18. PubMed PMID: 31920236; PubMed Central PMCID: PMC6939578.

Background and Aims: CMAC video laryngoscope size 2 D-Blade has been recently introduced for management of pediatric difficult airway. Our primary outcome was to compare glottic view, intubation time, and ease of intubation with the size 2 Macintosh versus D-Blade of C-MAC video laryngoscope in simulated cervical injury in children.

Material and Methods: This randomized crossover study was conducted in a tertiary care hospital of Northern India. Forty children of 4-14 years of age were enrolled in this study. After induction of anesthesia, video laryngoscopy was performed either with size 2 CMAC Macintosh (group M) or D-Blade (group D) with manual in-line stabilization. After removal of the first blade, second video laryngoscopy was performed with the alternative blade. Endotracheal intubation was done with the second laryngoscopy. Best glottic view, time for best glottic view, and difficulty in blade insertion were recorded during both the video laryngoscopies. During second video laryngoscopy, difficulty of tube insertion and time for intubation were noted.

Results: The glottic view grade was significantly better in group D compared with the group M ($P = 0.0002$). Insertion of D-Blade was more difficult than Macintosh blade ($P = 0.0007$). There was no statistical difference in terms of time for best glottic view in group M and group D (13.40 ± 4.90 vs 13.62 ± 5.60 s) and endotracheal tube insertion time (24.80 ± 7.90 vs 27.90 ± 10.90 s), respectively. Number of intubation attempts was similar in both the groups.

Conclusions: Size 2 D-Blade of C-MAC video laryngoscope provided a better glottic view in children with simulated cervical spine injury as compared with CMAC Macintosh blade. Success of intubation, intubation time, and ease of intubation were comparable with both the blades.

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DOI: 10.4103/joacp.JOACP_106_18

PMCID: PMC6939578

PMID: 31920236

217: Sokhal S, Goyal K, Sokhal N, Kumar N, Kedia S. Intraoperative Management of a Patient for Deep Brain Stimulation with Severe Dyskinesia and Tremors: Ketamine to the Rescue! *Asian J Neurosurg*. 2019 Nov 25;14(4):1275-1276. doi: 10.4103/ajns.AJNS_47_18. eCollection 2019 Oct-Dec. PubMed PMID: 31903377; PubMed Central PMCID: PMC6896633.

The loss of dopaminergic neurons from the substantia nigra pars compacta characterizes the classical pathology of Parkinson's disease (PD). Deep brain stimulation (DBS) has become an increasingly common treatment for PD. Sometimes excessive tremors due to exacerbated PD hinder the surgery and may almost make it impossible. This is a case report highlights use of IV ketamine for intraoperative sedation of a patient with PD, with severe dyskinesia & tremors, posted for DBS. IV ketamine resulted in prompt abolition of tremors and dyskinesia, which were unresponsive to previous traditional sedative drugs.

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DOI: 10.4103/ajns.AJNS_47_18

PMCID: PMC6896633

PMID: 31903377

218: Sondhi P, Singh S, Khandpur S, Agarwal S. A case of disseminated histoplasmosis presenting with facial and laryngeal involvement. *Indian J Dermatol Venereol Leprol*. 2019 Oct 18. doi: 10.4103/ijdv.IJDVL_707_17. [Epub ahead of print] PubMed PMID: 31650978.

219: Soni P, Punj J. Regarding the paper published 'Ultrasound-guided lumbar transforaminal injection through interfacet approach'. *Saudi J Anaesth*. 2019 Oct-Dec;13(4):398-399. doi: 10.4103/sja.SJA_465_19. PubMed PMID: 31572101; PubMed Central PMCID: PMC6753768.

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Cognitive deficits in Schizophrenia interfere with everyday functioning and social functioning. Strong familial associations in schizophrenia might serve to establish cognitive impairments as endophenotypic markers. Therefore, visuo-spatial working memory simulating day-to-day activities at high memory load was assessed in patients with schizophrenia, their first-degree relatives and healthy controls to explore pre-trial and pre-response EEG microstates and their intracranial generators. Twenty-eight patients with schizophrenia, first-degree relatives and matched healthy controls participated in the study. Brain activity during visuo-spatial working memory task was recorded using 128-channel

electroencephalography. Pre-trial and pre-response microstate maps of correct and error trials were clustered across groups according to their topography. Microstate map parameters and underlying cortical sources were compared among groups. Pre-trial (correct) microstate Map 1 was significantly different between controls and patients which could qualify it as a state marker with its intracranial generator localized to right inferior frontal gyrus (rIFG). Pre-response (correct) microstate map was significantly different between controls and first-degree relatives which could be considered an endophenotypic marker for schizophrenia. No significant differences were observed for error trials between groups. rIFG which is involved in the execution of multi-component behaviour and selective inhibitory control could distinguish patients with schizophrenia from their first-degree relatives and healthy controls. Further, microstate based biomarkers have the potential to facilitate diagnosis of schizophrenia at a preclinical stage resulting in efficient diagnosis and better prognosis.

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PMID: 31129232

221: Soni S, Agarwal A, Singh A, Gupta V, Khadgawat R, Chaturvedi PK, Ahuja V, Makharia GK. Prevalence of thyroid autoimmunity in first-degree relatives of patients with celiac disease. *Indian J Gastroenterol*. 2019 Oct;38(5):450-455. doi: 10.1007/s12664-019-00990-3. Epub 2019 Nov 8. PubMed PMID: 31705459.

AIM: Patients with celiac disease (CeD) are prone to develop other autoimmune diseases such as autoimmune thyroid disease and type 1 diabetes. While 7.5% of first-degree relatives (FDRs) of patients with CeD develop CeD, it is not clear whether FDRs of patients with CeD are at higher risk of developing autoimmune thyroid disease.

METHODS: In this prospective case-control study, we recruited 194 FDRs (males 53.1%) of 91 patients with CeD and 140 age-matched healthy controls (males 76.4%). They were screened for CeD using anti-tissue transglutaminase antibodies (anti-tTG Ab) and thyroid disease using a symptom questionnaire, anti-thyroid peroxidase antibodies (anti-TPO) and serum thyroid-stimulating hormone (TSH). Subjects having positive anti-TPO but a normal TSH were classified as having thyroid autoimmunity and those with elevated TSH with or without positive anti-TPO Ab were classified as having autoimmune thyroid dysfunction.

RESULTS: The prevalence of thyroid autoimmunity and autoimmune thyroid dysfunction in FDRs was significantly higher than that in healthy controls (17.5% vs. 5.0%, $p < 0.01$; 11.8% vs. 3.5%, $p < 0.01$), respectively. A significantly higher number of FDRs had a positive anti-tTG Ab in comparison with controls (13.9% vs. 2.2%, $p < 0.001$). Amongst FDRs having thyroid autoimmunity, 44.1%, 47.0% and 8.8% were siblings, parents and children of patients with CeD, respectively. Familial clustering was seen only in 1 family.

CONCLUSION: FDRs of patients with CeD have 3-fold higher risk of developing autoimmune thyroid disorders and associated thyroid dysfunction. Therefore, it is advisable for early screening of FDRs for CeD and associated thyroid autoimmunity through screening measures.

DOI: 10.1007/s12664-019-00990-3

PMID: 31705459

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Cardiac tamponade is a condition produced by the rapid accumulation of pericardial fluid, which restricts the filling of the heart. Often the forensic pathologist comes across different naturally occurring sudden deaths. Cardiovascular causes are the most common. Death due to cardiac tamponade can cause sudden cardiac death. Acute cardiac tamponade is almost invariably fatal, unless the pressure is relieved by removing the pericardial fluid, either by needle pericardiocentesis or surgical procedures. Cardiac tamponade is more commonly associated with cases of trauma, operative procedures, secondary to myocardial infarction or intra pericardial rupture of great vessels. Previous literature showed an association of cardiac tamponade with many other pathological conditions such as malignancy, central venous catheterisation, open heart surgery, dissecting aneurysm of the aorta, myocardial abscess, infective endocarditis, etc. We report a series of three cases where cardiac tamponade was given as the cause of death on autopsy secondary to post-myocardial infarction wall rupture.

DOI: 10.1177/0025817219867268

PMID: 31584847

223: Sood M, Mahapatra A, Chadda RK. Use of mobile phones by patients with serious mental illness attending a general hospital psychiatric outpatient service in India. *Asian J Psychiatr*. 2019 Oct;45:61-62. doi: 10.1016/j.ajp.2019.08.015. Epub 2019 Aug 28. PubMed PMID: 31518958.

224: Swami P, Bhatia M, Tripathi M, Chandra PS, Panigrahi BK, Gandhi TK. Selection of optimum frequency bands for detection of epileptiform patterns. *Healthc Technol Lett*. 2019 Jul 26;6(5):126-131. doi: 10.1049/htl.2018.5051. eCollection 2019 Oct. PubMed PMID: 31839968; PubMed Central PMCID: PMC6849498.

The significant research effort in the domain of epilepsy has been directed toward the development of an automated seizure detection system. In their usage of the electrophysiological recordings, most of the proposals thus far have followed the conventional practise of employing all frequency bands following signal decomposition as input features for a classifier. Although seemingly powerful, this approach may prove counterproductive since some frequency bins may not carry relevant information about seizure episodes and may, instead, add noise to the classification process thus degrading performance. A key thesis of the work described here is that the selection of frequency subsets may enhance seizure classification rates. Additionally, the authors explore whether a conservative selection of frequency bins can reduce the amount of training data needed for achieving good classification performance. They have found compelling evidence that using spectral components with <25 Hz frequency in scalp electroencephalograms can yield state-of-the-art classification accuracy while reducing training data requirements to just a tenth of those employed by current approaches.

DOI: 10.1049/htl.2018.5051

PMCID: PMC6849498

PMID: 31839968

225: Tajamul S, Hadda V, Madan K, Tiwari P, Mittal S, Khan MA, Mohan A, Guleria R. Neurally-Adjusted Ventilatory Assist Versus Noninvasive Pressure Support Ventilation in COPD Exacerbation: The NAVA-NICE Trial. *Respir Care*. 2020 Jan;65(1):53-61. doi: 10.4187/respcare.07122. Epub 2019 Oct 22. PubMed PMID: 31641071.

BACKGROUND: This study was conducted to compare the effectiveness of noninvasive

ventilation (NIV) with pressure support (NIV-PSV) to noninvasive neurally-adjusted ventilatory assist (NIV-NAVA) during COPD exacerbation. METHODS: In this study, 40 subjects with COPD and acute hypercapnic respiratory failure were randomized to receive either NIV-NAVA (n = 20) or NIV-PSV (n = 20) via a critical care ventilator. Subjects' vital parameters, arterial blood gas values, patient-ventilator asynchrony events, and asynchrony index were noted at specific time intervals in both groups. The duration of NIV, rate of NIV failure, and length hospital stay were also recorded for these 2 modes of NIV. RESULTS: NIV-NAVA significantly reduced the total number (median [interquartile range]) of asynchrony events compared to NIV-PSV: 22 (15-32.5) versus 65 (50.75-104.25), respectively, $P = .002$. Severe asynchrony defined as asynchrony index $> 10\%$ was also significantly lower in NIV-NAVA than in NIV-PSV ($P < .001$). There was no significant difference between the 2 groups regarding improvement in gas exchange and vital parameters. Rate of failure of NIV ($P = .73$), duration of the requirement of ventilatory support ($P = .40$), and hospital length of stay ($P = .46$) were also comparable between the 2 modes of ventilation. CONCLUSIONS: Compared to NIV-PSV, NIV-NAVA was associated with better patient-ventilator synchrony and a reduction in the number of asynchrony events in subjects with an exacerbation of COPD, with similar effects on improvement in gas exchange, duration of NIV, hospital length of stay, and rate of NIV failure. (Clinicaltrials.gov registration NCT02912689.).

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DOI: 10.4187/respcare.07122

PMID: 31641071

226: Takkar B, Gaur N, Saluja G, Rathi A, Sharma B, Venkatesh P, Kumar A. Evaluation of the vitreous chamber depth: An assessment of correlation with ocular biometrics. *Indian J Ophthalmol.* 2019 Oct;67(10):1645-1649. doi: 10.4103/ijo.IJO_56_19. PubMed PMID: 31546500; PubMed Central PMCID: PMC6786230.

Purpose: The mechanism of ocular growth eludes us and research on vitreous chamber depth (VCD) is lacking. The purpose of this study was to evaluate the role of VCD and its ratio to axial length (AL) in relation to ocular biometry. Methods: This retrospective study of patients planned for cataract surgery was performed at a tertiary center. Data regarding AL, anterior chamber depth (ACD), lens thickness (LT), and central corneal thickness (CCT) of 640 eyes was noted. Anterior segment (AS) was measured as sum of CCT, ACD, and LT, while VCD was calculated as the difference between AL and AS. Correlation of VCD and VCD: AL with ocular biometry was the primary outcome measure. Three groups were formed on the basis of AL and Pearson correlation coefficient (R) was applied. Results: Mean VCD was 15.38 \pm 1.14 mm. Mean VCD: AL was 0.66 \pm 0.02. VCD had a very strong relation with AL ($R = 0.9$, $P < 0.001$) only, whereas VCD: AL had a good--strong relation with AL ($R = 0.5$, $P < 0.001$), AS ($R = 0.7$, $P < 0.001$), ACD ($R = 0.3$, $P < 0.001$), and LT ($R = 0.5$, $P < 0.001$). The relation of VCD: AL with AS was very strong across all groups ($R \leq -0.8$, $P < 0.001$ in all groups). 85% of eyes in group with AL < 22 mm had VCD: AL < 0.67 , conversely 85% of eyes with AL > 24.5 mm had VCD: AL > 0.67 . Conclusion: : We found VCD to have the strongest relation with AL. VCD: AL was more consistent and showed a strong relation to ocular biometry across all ALs. This suggests the possible utility of the ratio VCD: AL while evaluating ocular growth, refractive status, and myopia-related complications.

DOI: 10.4103/ijo.IJO_56_19

PMCID: PMC6786230

PMID: 31546500

227: Tarik M, Ramakrishnan L, Sinha S, Sachdev HPS, Tandon N, Roy A, Bhargava SK. Association of birth outcomes and postnatal growth with adult leukocyte telomere length: Data from New Delhi Birth Cohort. *Matern Child Nutr.* 2019 Oct;15(4):e12857. doi: 10.1111/mcn.12857. Epub 2019 Jul 17. PubMed PMID: 31216382.

Born small for gestational age due to undernutrition in utero and subsequent catch-up growth is associated with risk of developing chronic diseases in adulthood. Telomere length has been shown to be a predictor of these age-related diseases and may be a link between birth size, a surrogate for foetal undernutrition, and adult chronic diseases. We assessed the relationship of leukocyte telomere length in adult life with birth outcomes and serial change in body mass index (BMI) from birth to adulthood. Leukocyte relative telomere length (RTL) was measured by MMqPCR in 1,309 subjects from New Delhi Birth Cohort who participated in two phases of the study between 2006–2009 (Phase 6) and 2012–2015 (Phase 7) at a mean age of 39.08 (± 3.29), and its association with birth outcomes and conditional BMI gain at 2, 11, and 29 years was assessed in a mixed regression model. We did not find any significant association of RTL with body size at birth including birthweight, birth length, and birth BMI. Gestational age was positively associated with RTL ($P = .017$, multivariate model: $P = .039$). Conditional BMI gain at 2 and 11 years was not associated with RTL. BMI gain at 29 year was negatively associated with RTL in multivariate model ($P = .015$). Born small for gestational age was not associated with RTL in adulthood. Leukocyte telomere attrition was observed in those born before 37 weeks of gestational age as well as in those who gained weight as adults, which may predispose to chronic diseases.

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PMID: 31216382

228: Thota RS, Ramkiran S, Garg R, Goswami J, Baxi V, Thomas M. Opioid free onco-anesthesia: Is it time to convict opioids? A systematic review of literature. *J Anaesthesiol Clin Pharmacol.* 2019 Oct-Dec;35(4):441-452. doi: 10.4103/joacp.JOACP_128_19. Review. PubMed PMID: 31920226; PubMed Central PMCID: PMC6939563.

The epidemic of opioid crisis started getting recognised as a public health emergency in view of increasing opioid-related deaths occurring due to undetected respiratory depression. Prescribing opioids at discharge has become an independent risk factor for chronic opioid use, following which, prescription practices have undergone a radical change. A call to action has been voiced recently to end the opioid epidemic although with the pain practitioners still struggling to make opioids readily available. American Society of Anesthesiologist (ASA) has called for reducing patient exposure to opioids in the surgical setting. Opioid sparing strategies have emerged embracing loco-regional techniques and non-opioid based multimodal pain management whereas opioid free anesthesia is the combination of various opioid sparing strategies culminating in complete elimination of opioid usage. The movement away from opioid usage perioperatively is a massive but necessary shift in anesthesia which has rationalised perioperative opioid usage. Ideal way moving forward would be to adapt selective low opioid effective dosing which is both procedure and patient specific while reserving it as rescue analgesia, postoperatively. Many unknowns persist in the domain of immunologic effects of opioids, as complex interplay of factors gets associated during real time surgery towards outcome. At present it would be too premature to conclude upon opioid-induced immunosuppression from the existing evidence. Till evidence is established, there are no recommendations to

change current clinical practice. At the same time, consideration for multimodal opioid sparing strategies should be initiated in each patient undergoing surgery.

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DOI: 10.4103/joacp.JOACP_128_19

PMCID: PMC6939563

PMID: 31920226

229: Titiyal JS, Kaur M. Commentary: Femtosecond laser assisted cataract surgery in cataract with phakic intraocular lenses in situ. *Indian J Ophthalmol.* 2019 Oct;67(10):1746-1747. doi: 10.4103/ijo.IJO_1173_19. PubMed PMID: 31546551; PubMed Central PMCID: PMC6786168.

230: Tousifullah M, Gupta AK, Meena JP, Seth R. B cell acute lymphoblastic leukaemia presenting with isolated soft tissue tumours: the non-myeloid sarcoma. *BMJ Case Rep.* 2019 Oct 5;12(10). pii: e230982. doi: 10.1136/bcr-2019-230982. PubMed PMID: 31586956.

Soft tissue leukaemic masses are a well-described clinical feature of myeloid haematological neoplasms. In paediatric acute lymphoblastic leukaemia (ALL), such soft tissue leukaemic sarcomas have not been reported as a presenting feature. Here we report a 3-year-old boy with ALL who presented to us with isolated soft tissue swellings for a duration of 9 months. The significance of these 'non-myeloid' sarcomas in paediatric ALL is uncertain.

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DOI: 10.1136/bcr-2019-230982

PMID: 31586956

231: Tripathy S, Damle NA, Naranje P, Shamim SA, Tripathi M, Bal C. Leptomeningeal Metastasis in Carotid Body Paraganglioma: Findings on 68Ga DOTANOC PET-CT. *Clin Nucl Med.* 2019 Oct;44(10):e583-e585. doi: 10.1097/RLU.0000000000002744. PubMed PMID: 31348087.

Carotid body paragangliomas are mostly benign tumors with very rare propensity to metastasize to lymph nodes, bones, liver, and lungs. Leptomeningeal metastasis from a carotid body paraganglioma is a very rare phenomenon. We describe Ga-DOTANOC PET-CT findings of a 33-year-old man, a known case of metastatic paraganglioma who underwent scan for response assessment to everolimus therapy.

DOI: 10.1097/RLU.0000000000002744

PMID: 31348087 [Indexed for MEDLINE]

232: Tyagi A, Dass C, Rao NT, Soni KD. Emergency anesthetic management of an achondroplastic elderly gravida with polytrauma. *Int J Crit Illn Inj Sci.* 2019 Oct-Dec;9(4):191-193. doi: 10.4103/IJCIIS.IJCIIS_56_19. Epub 2019 Dec 11. PubMed PMID: 31879607; PubMed Central PMCID: PMC6927133.

A 42-year-old pregnant female, diagnosed with achondroplasia, presented to our trauma center with multiple injuries after being involved in a motor vehicle accident. During her hospitalization, she underwent multiple surgeries and required admission in the intensive care unit. We describe the emergency anesthetic management of this patient, highlighting the effects of skeletal dysplasia on airway, cardiorespiratory system, and ventilatory mechanics. These

effects, when superimposed upon with physiological changes of pregnancy, can lead to an unanticipated ventilatory challenge as we describe in this report.

Copyright: © 2019 International Journal of Critical Illness and Injury Science.

DOI: 10.4103/IJCIIS.IJCIIS_56_19

PMCID: PMC6927133

PMID: 31879607

233: Vaithiyam V, Jadon RS, Ray A, Manchanda S, Meena VP, Ranjan P, Vikram NK. Metronidazole induced encephalopathy: A rare side effect with a common drug. *Indian J Radiol Imaging*. 2019 Oct-Dec;29(4):431-434. doi: 10.4103/ijri.IJRI_330_19. Epub 2019 Dec 31. PubMed PMID: 31949347; PubMed Central PMCID: PMC6958887.

In hospitals, seizures and encephalopathy are one of the common complications observed in critically ill patients. Drug intoxication, metabolic derangements, and anatomical abnormalities can cause altered mental status. We encountered an uncommon case with a diagnostic dilemma due to persistent encephalopathy, where metronidazole toxicity was an etiological factor. A 45-year-old male, who was admitted with the diagnosis of ruptured amoebic liver abscess. During the course of his management, he developed seizures and altered sensorium. After excluding other etiologies for in-hospital de novo seizure, a suspicion of metronidazole toxicity was considered. MRI brain was done which suggested the same.

Metronidazole induced encephalopathy (MIE) is an uncommon adverse effect of treatment with metronidazole. Diagnosis is made by identifying specific radiological findings. It characteristically affects the cerebellum and subcortical structures. While the clinical and neuroimaging changes are usually reversible, persistent encephalopathy with poor outcomes may occur as seen in our case.

Copyright: © 2019 Indian Journal of Radiology and Imaging.

DOI: 10.4103/ijri.IJRI_330_19

PMCID: PMC6958887

PMID: 31949347

234: Vanidassane I, Gogia A, Mallick S. Adult ALK-positive diffuse large B-cell lymphoma: A limited institutional experience. *Indian J Cancer*. 2019 Oct-Dec;56(4):373-374. doi: 10.4103/ijc.IJC_705_18. PubMed PMID: 31607713.

235: Vashist A, Ghosal A, Vashist A, Kaushik A, Gupta YK, Nair M, Ahmad S. Impact of Nanoclay on the pH-Responsiveness and Biodegradable Behavior of Biopolymer-Based Nanocomposite Hydrogels. *Gels*. 2019 Oct 16;5(4). pii: E44. doi: 10.3390/gels5040044. PubMed PMID: 31623182; PubMed Central PMCID: PMC6955902.

This research work deployed free radical polymerization for the development of pH-responsive hybrid nanocomposite hydrogels (NCHs) with the formation of improved interpenetrating networks (IPN). The crosslinked biopolymeric system was composed of (chitosan (CH)/guar gum (GG)/polyol) and a nanofiller (Cloisite 30B). The study was aimed to investigate the role of Cloisite 30B as a nanofiller and linseed oil-derived polyol to induce stable interpenetrating networks in chitosan-guar gum-based hydrogels. FT-IR analysis confirmed the formation of crosslinked networks with the formation of hydrogen bonds in the synthesized NCHs. Thermogravimetric analysis and differential scanning calorimetry revealed high thermal stability of the NCHs. The hydrolytic and soil burial degradation

tests confirmed the biodegradability of the synthesized NCHs. An extraordinarily high swelling capacity in a buffer solution of pH 4.0 and 7.4 demonstrated their pH-responsive behavior. It has been demonstrated that even the minimal addition of polyol to the guar gum-based hydrogels has influenced the stability and characteristic features such as high swelling capacity owing to the formation of interpenetrating networks and the biodegradability of the hydrogels.

DOI: 10.3390/gels5040044

PMCID: PMC6955902

PMID: 31623182

236: Vibha D. Infection and Epilepsy: Current Dilemma. *Ann Indian Acad Neurol*. 2019 Oct-Dec;22(4):514-515. doi: 10.4103/aian.AIAN_519_18. Epub 2019 Oct 25. PubMed PMID: 31736588; PubMed Central PMCID: PMC6839313.

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Background: Breast cancer is the most common malignancy among women. Chronic pain after breast surgeries is a well-known entity and is mainly neuropathic in nature. The primary aim of this study was to assess the effect of pregabalin given as preventive analgesic on the incidence of chronic postmastectomy pain. **Methods:** A randomized control trial (RCT) was performed on 80 patients. Patients were allocated into two groups. Group 1 received pregabalin (Lyrica, Pfizer) 75 mg. BD starting from the morning of surgery and continued for 1 week. Group 2 received placebo capsules at identical time intervals. Patients were followed up for 3 months postoperatively. Incidence, severity, and location of chronic pain were recorded. The primary objective was to evaluate the effect of perioperative oral pregabalin on the incidence of chronic postmastectomy pain (at 3 months postoperatively).

Results: Of the 80 patients enrolled, 71 patients completed the study and were assessed for final outcomes. Incidence of chronic pain was comparable in both groups, with 16 out of 35 patients in Group 1 (44.7%) and 20 out of 36 patients in Group 2 (55.6%) reported chronic pain ($P = 0.407$). There was no difference between the severity of chronic pain (numeric rating scale ≥ 4) in both groups ($P = 0.307$). Incidence of adverse effects was comparable in both groups.

Conclusion: This RCT shows that perioperative pregabalin may not have a role in the prevention of chronic pain after breast surgeries.

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DOI: 10.4103/IJPC.IJPC_85_19

PMCID: PMC6812425

PMID: 31673203

238: Yadav CS, Mittal S, Singh S, Gamanagatti S, Anand S, Kumar A. A novel single myocapsular sleeve (SMS) repair technique to reduce dislocation in posterior approach to the hip: A clinico-radiographic study. *J Clin Orthop Trauma*. 2019 Oct;10(Suppl 1):S247-S251. doi: 10.1016/j.jcot.2019.03.014. Epub 2019 Mar 22. PubMed PMID: 31700214; PubMed Central PMCID: PMC6823894.

Background: To assess a new modification of posterior approach to the hip and its effect on stability and functional outcome in total hip arthroplasty.

Material & Methods: A comparative retrospective study was done to assess the

functional outcome and rate of dislocation among 233 hips (Group A) operated by conventional posterior approach and 567 hips (Group B) by our novel modified posterior approach. In this technique, 2-3 stay sutures are applied in external rotators, then a single conjoint-myocapsular sleeve is raised linearly over the capsule with adherent fibers of gluteus minimus to piriformis tendon, short rotators and part of quadratus for exposure of femoral head. After inserting the definite prosthesis, upper part of sleeve (capsule, piriformis tendon) is sutured at the lower part of tip of greater trochanter & lower part with lateral trochanteric bone. Fifty patients, using randomised tables, in group B underwent MRI to evaluate the efficacy of the repair at 1 and 12 weeks postoperatively. Results: Average Harris hip score at minimum 3.9 year follow up was 83.2 in Group A & 88.7 in Group B. Group B had only one dislocation (0.176%) while Group A had 12 dislocations (5.15%). MRI showed intact repair in 47 patients (94%); fibrous continuity in 2 patients (6%) in group B patients. Conclusion: Intermediate results shows that this technique provides enhanced stability and improved functional outcome. But more prospective and randomised controlled studies with long term followup are required to confirm its role in prevention of hip dislocations.

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DOI: 10.1016/j.jcot.2019.03.014
PMCID: PMC6823894 [Available on 2020-10-01]
PMID: 31700214

239: Yadav D, Sharma A, Agarwal S, Gupta V. Hypereosinophilic dermatitis: generalised lichenification and gyrate erythema as the sole manifestation of idiopathic hypereosinophilic syndrome. *BMJ Case Rep.* 2019 Oct 15;12(10). pii: e232142. doi: 10.1136/bcr-2019-232142. PubMed PMID: 31619402.

A 22-year-old female presented with generalised lichenification and severe pruritus, along with multiple annular papules and concentric plaques over trunk and extremities for the last 3 years. Her haematological investigations revealed leucocytosis with peripheral blood eosinophilia and raised serum IgE levels. Skin biopsy showed perivascular and interstitial infiltrate of eosinophils and lymphocytes in the dermis. Bone marrow examination showed myeloid hypercellularity with increased number of eosinophils, but no atypical cells. Cytogenetic studies did not reveal any chromosomal alterations. No systemic involvement was found on imaging. A diagnosis of idiopathic skin-limited hypereosinophilic syndrome was made. She was treated with tapering doses of oral prednisolone and weekly methotrexate with significant improvement in skin lesions and pruritus in 2 months, which was maintained at 7-month follow-up.

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DOI: 10.1136/bcr-2019-232142
PMID: 31619402

240: Yadav R, Nayak M, Maredupaka S, Sadiq M, Farooque K. Combined Olecranon Osteotomy and the Posterior Minimal Invasive Plate Osteosynthesis Approach for a Concomitant Injury of the Humeral Shaft and a Distal Intraarticular Humerus Fracture. *Cureus.* 2019 Oct 22;11(10):e5966. doi: 10.7759/cureus.5966. PubMed PMID: 31799100; PubMed Central PMCID: PMC6863588.

A complex fracture involving the distal humerus is a difficult fracture to treat and more so when it is involved with the ipsilateral shaft of the humerus. Open reduction and internal fixation of the humeral shaft with articular

reconstruction have been described for a successful outcome of these complex fractures. However, it has drawbacks, especially in terms of soft tissue dissection and subsequent scarring and non-union. A 42-year-old female presented to the emergency department with a fracture of the intercondylar humerus with an ipsilateral shaft of the left humerus. Combined olecranon osteotomy with posterior minimal plate osteosynthesis was used to treat this fracture. At the one-year follow-up at the postoperative fracture clinic, there was no pain, the range of motion (ROM) of the elbow was 10 degrees to 140 degrees and the radiograph showed a healed fracture with the implant in situ. We present and review a novel technique to treat complex humerus fractures. Articular fragments can be directly visualized and fixed simultaneously. This approach allows for the biological fixation of the fracture and forms a reliable option for treating such complex fractures.

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DOI: 10.7759/cureus.5966

PMCID: PMC6863588

PMID: 31799100

241: Yadav V, Deka D, Aparna S, Dadhwal V. NT-proBNP: A Useful Biochemical Marker for Prognosis in Rh-Isoimmunized Pregnancies. *J Obstet Gynaecol India*. 2019 Oct;69(Suppl 2):128-132. doi: 10.1007/s13224-018-1180-y. Epub 2018 Oct 1. PubMed PMID: 31686745; PubMed Central PMCID: PMC6801230.

Background: Rh incompatibility sometimes results in life-threatening conditions in fetus like severe anemia and jaundice, leading to kernicterus and even death. Even after an uneventful intrauterine transfusion (IUT), fetus may not survive despite correction of the fetal anemia. Finding appropriate markers may help in determining the prognosis of such cases. The N-terminal prohormone of brain natriuretic peptide (NT-proBNP) suggests some degree of heart failure.

Objective: Present study was planned to evaluate its role in predicting the outcome of fetus in Rh-isoimmunized pregnant woman.

Methods: This prospective study consisted of total 40 pregnant patients: 10 pregnant Rh-isoimmunized women with hydropic fetuses, 10 with non-hydropic fetuses and 20 control group. If the MCA-PSV was >1.5 MOM, cord blood sampling and IUT was done and sent for fetal hematocrit and NT-proBNP.

Results: The levels of NT-proBNP at various periods of gestation in hydropic, non-hydropic and control group fetuses showed positive correlation with the degree of fetal anemia.

Conclusion: Correlation of high levels of NT-proBNP to fetal anemia proves that hydrops fetalis is probably due to progressive high cardiac output myocardial failure, increased capillary permeability and perhaps reduced coronary flow.

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PMCID: PMC6801230 [Available on 2020-10-01]

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PURPOSE: Spinal Cord Society (SCS) and Spine Trauma Study Group (STSG)

established a panel tasked with reviewing management and prognosis of acute traumatic cervical central cord syndrome (ATCCS) and recommend a consensus statement for its management.

METHODS: A systematic review was performed according to the PRISMA 2009 guidelines. Delphi method was used to identify key research questions and achieve consensus. PubMed, Scopus and Google Scholar were searched for corresponding keywords. The initial search retrieved 770 articles of which 37 articles dealing with management, timing of surgery, complications or prognosis of ATCCS were identified. The literature review and draft position statements were compiled and circulated to panel members. The draft was modified incorporating relevant suggestions to reach consensus.

RESULTS: Out of 37 studies, 15 were regarding management strategy, ten regarding timing of surgery and 12 regarding prognosis of ATCCS.

CONCLUSION: There is reasonable evidence that patients with ATCCS secondary to vertebral fracture, dislocation, traumatic disc herniation or instability have better outcomes with early surgery (<24 h). In patients of ATCCS secondary to extension injury in stenotic cervical canal without fracture/fracture dislocation/traumatic disc herniation/instability, there is requirement of high-quality prospective randomized controlled trials to resolve controversy regarding early surgery versus conservative management and delayed surgery if recovery plateaus or if there is a neurological deterioration. Until such time decision on surgery and its timing should be left to the judgment of physician, deliberating on pros and cons relevant to the particular patient and involving the well-informed patient and relatives in decision making. These slides can be retrieved under Electronic Supplementary Material.

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