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1: Abhishek KS, Chakravarti A. Simultaneous detection of IgM antibodies against dengue and chikungunya: Coinfection or cross-reactivity? *J Family Med Prim Care*. 2019 Jul;8(7):2420-2423. doi: 10.4103/jfmprc.jfmprc_365_19. PubMed PMID: 31463269; PubMed Central PMCID: PMC6691432.

Background: Dengue and chikungunya sharing same mosquito vector are two most important arboviruses circulating in northern India including Delhi and are responsible for frequent outbreaks. Antigen and antibodies detection ELISA kits are the major tool to diagnose these viral illnesses, and are sometimes associated with cross-reactivity, giving a false picture of coinfection, although simultaneous harboring of both the viruses is not uncommon. Various studies have reported coinfection up to 25% from the same region.

Procedure: This study was conducted in the Department of Microbiology, Maulana Azad Medical College, New Delhi, during the month of September 2016 which included 200 blood samples from clinically suspected cases attending Medicine OPD of associated Lok Nayak Hospital, New Delhi. Diagnosis of dengue and chikungunya was made using NS-1 antigen and IgM MAC ELISA for dengue and IgM MAC ELISA for chikungunya as per manufacturer's instructions.

Results: Out of 200 suspected cases, 34 (17%) were positive for dengue serology, 77 (38.5%) were positive for chikungunya serology, and 29.9% of positive chikungunya cases were simultaneously affected with dengue. This higher percentage of coinfection might be because of cross-reactivity of the ELISA kits.

Discussion: India being a hyperendemic region for dengue and chikungunya, frequent outbreaks are quite common. Circulation of both the virus and huge susceptible population are the major causes for frequent outbreaks. Restricting our attention to diagnose one of them is not sufficient, and coinfection further complicates the illness.

Conclusion: Simultaneous diagnosis of dengue and chikungunya is need of time to diagnose dual infection and prevent complications by starting supportive treatment well in time. Molecular technique if ever possible should be employed whenever the coinfection number is higher than expected to rule out cross-reactivity.

2: Abhyankar YS, Dev S, Sarun OS, Saxena A, Joshi R, Darbari H, Sajish C, Sonavane UB, Gavane V, Deshpande A, Dixit T, Harsh R, Badwe R, Rath GK, Laskar S, Faddegon B, Perl J, Paganetti H, Schuemann J, Srivastava A, Obcemea C, Nath AK, Sharma A, Buchsbaum J. Monte Carlo Processing on a Chip (MCoaC)-preliminary experiments toward the realization of optimal-hardware for TOPAS/Geant4 to drive discovery. *Phys Med*. 2019 Aug;64:166-173. doi: 10.1016/j.ejmp.2019.06.016. Epub 2019 Jul 16. PubMed PMID: 31515016.

Amongst the scientific frameworks powered by the Monte Carlo (MC) toolkit Geant4 (Agostinelli et al., 2003), the TOPAS (Tool for Particle Simulation) (Perl et al., 2012) is one. TOPAS focuses on providing ease of use, and has significant implementation in the radiation oncology space at present. TOPAS functionality extends across the full capacity of Geant4, is freely available to non-profit users, and is being extended into radiobiology via TOPAS-nBIO (Ramos-Mendez et al., 2018). A current "grand problem" in cancer therapy is to convert the dose of treatment from physical dose to biological dose, optimized ultimately to the individual context of administration of treatment. Biology MC calculations are some of the most complex and require significant computational resources. In order to enhance TOPAS's ability to become a critical tool to explore the definition and application of biological dose in radiation therapy, we chose to explore the use of Field Programmable Gate Array (FPGA) chips to speedup the Geant4 calculations at the heart of TOPAS, because this approach called "Reconfigurable Computing" (RC), has proven able to produce significant (around 90x) (Sajish et al., 2012) speed increases in scientific computing. Here, we

describe initial steps to port Geant4 and TOPAS to be used on FPGA. We provide performance analysis of the current TOPAS/Geant4 code from an RC implementation perspective. Baseline benchmarks are presented. Achievable performance figures of the subsections of the code on optimal hardware are presented; Aspects of practical implementation of "Monte Carlo on a chip" are also discussed.

Published by Elsevier Ltd.

DOI: 10.1016/j.ejmp.2019.06.016
PMID: 31515016

3: Acharya AM, Ravikiran N, Jayakrishnan KN, Bhat AK. The role of pedicled abdominal flaps in hand and forearm composite tissue injuries: Results of technical refinements for safe harvest. *J Orthop.* 2019 May 3;16(4):369-376. doi: 10.1016/j.jor.2019.04.008. eCollection 2019 Jul-Aug. PubMed PMID: 31193279; PubMed Central PMCID: PMC6525282.

We evaluated the outcome of new technical refinements in abdominal flap coverage of major defects in upper limb for its reliability and safety. 68 patients were assessed for indications, additional procedures, complications and DASH questionnaire evaluation at the end of a year. The mean size of flap was 56cm² (range 6-250cm²). Median DASH score was 11.5 (range: 0-63). Hand stiffness was observed in 39% of patients. However, this was absent in whom prophylactic pinning of metacarpophalangeal joints were done in James position. Abdominal flaps give satisfactory results in hand injuries. Competent hand therapy program is essential to get best results.

DOI: 10.1016/j.jor.2019.04.008
PMCID: PMC6525282 [Available on 2020-07-01]
PMID: 31193279

4: Agarwal A, Jindal D, Ajay VS, Kondal D, Mandal S, Ghosh S, Ali M, Singh K, Huffman MD, Tandon N, Prabhakaran D. Association between socioeconomic position and cardiovascular disease risk factors in rural north India: The Solan Surveillance Study. *PLoS One.* 2019 Jul 8;14(7):e0217834. doi: 10.1371/journal.pone.0217834. eCollection 2019. PubMed PMID: 31283784; PubMed Central PMCID: PMC6613705.

BACKGROUND: Although most Indians live in rural settings, data on cardiovascular disease risk factors in these groups are limited. We describe the association between socioeconomic position and cardiovascular disease risk factors in a large rural population in north India.

METHODS: We performed representative, community-based sampling from 2013 to 2014 of Solan district in Himachal Pradesh. We used education, occupation, household income, and household assets as indicators of socioeconomic position. We used tobacco use, alcohol use, low physical activity, obesity, hypertension, and diabetes as risk factors for cardiovascular disease. We performed hierarchical multivariable logistic regression, adjusting for age, sex and clustering of the health sub-centers, to evaluate the cross-sectional association of socioeconomic position indicators and cardiovascular disease risk factors.

RESULTS: Among 38,457 participants, mean (SD) age was 42.7 (15.9) years, and 57% were women. The odds of tobacco use was lowest in participants with graduate school and above education (adjusted OR 0.11, 95% CI 0.09, 0.13), household income >15,000 INR (adjusted OR 0.35, 95% CI 0.29, 0.43), and highest quartile of assets (adjusted OR 0.28, 95% CI 0.24, 0.34) compared with other groups but not occupation (skilled worker adjusted OR 0.93, 95% CI 0.74, 1.16). Alcohol use was lower among individuals in the higher quartile of income (adjusted OR 0.75, 95% CI 0.64, 0.88) and assets (adjusted OR 0.70, 95% CI 0.59, 0.82). The odds of

obesity was highest in participants with graduate school and above education (adjusted OR 2.33, 95% CI 1.85, 2.94), household income > 15,000 Indian rupees (adjusted OR 1.89, 95% CI 1.63, 2.19), and highest quartile of household assets (adjusted OR 2.87, 95% CI 2.39, 3.45). The odds of prevalent hypertension and diabetes were also generally higher among individuals with higher socioeconomic position.

CONCLUSIONS: Individuals with lower socioeconomic position in Himachal Pradesh were more likely to have abnormal behavioral risk factors, and individuals with higher socioeconomic position were more likely to have abnormal clinical risk factors.

DOI: 10.1371/journal.pone.0217834
PMCID: PMC6613705
PMID: 31283784

5: Agrawal M, Phalak M, Panda S, Kale SS. Spontaneous Resolution of Brain Abscess by Rupture into Middle Ear. *Asian J Neurosurg.* 2019 Jul-Sep;14(3):1011-1012. doi: 10.4103/ajns.AJNS_85_18. PubMed PMID: 31497154; PubMed Central PMCID: PMC6703073.

Intracranial abscesses are uncommon, serious, and life-threatening infections, with mortality rate of about 15%. Surgical treatment is warranted for an abscess size more than 2.5 cm. We present an unusual case with spontaneous resolution of a large abscess through the middle ear without any surgical intervention.

DOI: 10.4103/ajns.AJNS_85_18
PMCID: PMC6703073
PMID: 31497154

6: Ahmed AS, Ghati N, Sharma G, Malhi AS. Supreme dominance of right coronary artery in a patient with typical angina. *BMJ Case Rep.* 2019 Jul 27;12(7). pii: e230278. doi: 10.1136/bcr-2019-230278. PubMed PMID: 31352394.

A 50-year-old woman presented to our hospital with Canadian Cardiovascular Society grade III angina of 4 months duration. Coronary angiography of the patient showed the absence of left main coronary artery from the left coronary sinus. There was a single right coronary artery (RCA) with a super dominant course from right coronary sinus. It also showed a left main coronary and left anterior descending artery arising separately from proximal RCA, with retroaortic and prepulmonic course, respectively. There was another independently arising small septal branch from the proximal RCA that supplied the proximal interventricular septum. The patient was managed with optimal medical therapy and had symptomatic relief.

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DOI: 10.1136/bcr-2019-230278
PMID: 31352394

7: Ahuja A, Tyagi S, Pati HP, Saxena R, Somasundaram V, Manivannan P, Tripathi P, Chandra D. Utility of Lupus Anticoagulant Assays (APTT-LA, KCT, DPT and DRVVT) in Detection of Antiphospholipid Syndrome (APS) in High Risk Pregnancy Cases. *Indian J Hematol Blood Transfus.* 2019 Jul;35(3):478-484. doi: 10.1007/s12288-018-01072-8. Epub 2019 Jan 23. PubMed PMID: 31388260; PubMed Central PMCID: PMC6646618.

Routine investigation for recurrent pregnancy loss includes measurement of antiphospholipid antibodies. The lupus anticoagulant has long been associated

with increased risks for thrombosis and adverse obstetric outcomes. But there are some disadvantages with lupus anticoagulant (LAC) tests which includes varied sensitivity of different clot based assays. ISTH recommends only 2 assays (preferably DRVVT and APTT-LA) for the identification of lupus anticoagulant but there are some studies which don't support this contention. Our study analyzed 526 samples from high risk pregnancy cases for APLA by all four LAC tests from tertiary centre of northern India. Among all the cases studied 65 cases were positive for lupus anticoagulant 25 of this became negative after 12 weeks. Among the 40 repeated positive assays, dRVVT could able to diagnose 36 cases followed by APTT-LA which could able to diagnose 28 cases, while KCT could able to diagnose 23 cases and dPT could able to diagnose only 14 cases. There were 12 cases in whom all lupus assays were positive. Our study thus concluded that DRVVT was the most sensitive followed by APPT-LA, KCT, dPT. The combination of dRVVT with APTT-LA or KCT appeared to be superior to other combinations. No individual test per se is 100% sensitive for the diagnosis of APLA in high risk pregnancy cases. Further results confirmed that repeated LAC result is required even in a high-risk setting. Positive LAC assay in majority were not associated with exclusively recurrent pregnancy loss but were associated with sporadic stillbirth and thrombosis.

DOI: 10.1007/s12288-018-01072-8
PMCID: PMC6646618 [Available on 2020-07-01]
PMID: 31388260

8: Anand S, Dhua AK. Penile Tourniquet Syndrome in a Child with Nocturnal Enuresis. *J Indian Assoc Pediatr Surg.* 2019 Jul-Sep;24(3):231-232. doi: 10.4103/jiaps.JIAPS_193_18. PubMed PMID: 31258282; PubMed Central PMCID: PMC6568163.

9: 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.

10: Angmo D, Dewan L, Behera A, Gagrani M. Aniridia with lenticular and choroidal coloboma. *Eur J Ophthalmol.* 2019 Jul 25;1120672119866106. doi: 10.1177/1120672119866106. [Epub ahead of print] PubMed PMID: 31342778.

This case report presents a rare association of a complete aniridia with lenticular and choroidal coloboma. An 8-year-old female patient was referred to our glaucoma clinic with aniridia, nystagmus and bilateral corneal opacity with right eye being phthisical. Ultrasonography of the phthisical eye revealed the presence of an old closed funnel retinal detachment. Further examination under anaesthesia revealed lens coloboma in the inferonasal quadrant and presence of a choroidal coloboma in the left eye. The intraocular pressure was 28mmHg with a central corneal thickness of 693µm. A macula sparing laser barrage around the colobomatous area was done in the left eye and topical ocular hypotensives were started.

DOI: 10.1177/1120672119866106
PMID: 31342778

11: Arif N, Khullar S, Kumar R, Choudhary SK, Kapil A, Dhawan B. Pleural effusion due to *Chryseobacterium indologenes*: Case report and review of literature. *J Lab Physicians.* 2019 Jul-Sep;11(3):284-286. doi: 10.4103/JLP.JLP_57_19. PubMed PMID: 31579226; PubMed Central PMCID: PMC6771326.

Chryseobacterium indologenes is found ubiquitously in the environment; it rarely causes human disease. Hence, we report a case of *C. indologenes*-associated

pleural effusion in a patient with aortic dissection. Postoperatively, the patient developed massive right-sided pleural effusion with underlying consolidated lung. Culture of the pleural fluid yielded pure growth of *C. indologenes* which was susceptible to cotrimoxazole, minocycline, and tigecycline. Therapy was modified; tigecycline and cotrimoxazole were started following which the patient showed improvement, and subsequent cultures of the pleural fluid were sterile. This report promotes awareness of this organism as an emerging pathogen in lung infections and emphasizes the importance of targeted therapy.

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DOI: 10.4103/JLP.JLP_57_19
PMCID: PMC6771326
PMID: 31579226

12: Azad C, Jat KR, Kaur J, Guglani V, Palta A, Tiwari A, Bansal D. Vitamin B(12) status and neurodevelopmental delay in Indian infants: a hospital-based cross-sectional study. *Paediatr Int Child Health*. 2019 Jul 3:1-7. doi: 10.1080/20469047.2019.1638130. [Epub ahead of print] PubMed PMID: 31267850.

Background: Vitamin B12 deficiency owing to a vegetarian diet is common in India and is associated with neurodevelopmental disorders. Objective: To investigate the prevalence of vitamin B12 deficiency in infants aged 1-12 months and to correlate the results with neurodevelopment. Methods: A cross-sectional study of 200 infants aged 1-12 months presenting to the emergency department or ward and requiring blood sampling or intravenous cannulation was undertaken in a tertiary-care centre of Northern India. Patients' serum vitamin B12 levels were correlated with Denver development screening test II (DDST II). Results: Of 200 infants recruited, 43 (22%) were vitamin B12-deficient (<211 pg/ml). After excluding 16 (8%) infants who were unsuitable for DDST screening, 21/39 (54%) and 22/145 (15%) were DDST-suspect in the vitamin B12-deficient and sufficient groups, respectively ($p = 0.0001$). There was a statistically significant correlation between B12 deficiency and an abnormal DDST ($p < 0.0001$). Conclusion: In India, vitamin B12 deficiency is prevalent in infancy and is associated with neurodevelopmental delay.

DOI: 10.1080/20469047.2019.1638130
PMID: 31267850

13: Bagchi S, Behera V, Agarwal SK. ACTH (corticotrophin) therapy in resistant primary membranous nephropathy. *Kidney Int*. 2019 Jul;96(1):250-251. doi: 10.1016/j.kint.2019.04.018. PubMed PMID: 31229041.

14: Bagri NK. Cyclosporine for Systemic Onset Juvenile Idiopathic Arthritis: Current Stand and Future Directions. *Indian J Pediatr*. 2019 Jul;86(7):576-577. doi: 10.1007/s12098-019-02985-6. Epub 2019 Jun 1. Review. PubMed PMID: 31154576.

15: Bahadur A, Chawla L, Bhattacharya N, Prateek S, Kumar A, Omar BJ, Jindal A, Singh A, Kapoor N. Hydatid disease: A parasitic inundation. *J Turk Ger Gynecol Assoc*. 2019 Jul 12. doi: 10.4274/jtggg.galenos.2019.2019.0048. [Epub ahead of print] PubMed PMID: 31298511.

16: Bajaj J, Chandra SP, Ramanujam B, Girishan S, Doddamani R, Tripathi M. Need of Immediate Drug Reduction after Epilepsy Surgery - A Prospective Observational Study. *Neurol India*. 2019 Jul-Aug;67(4):1050-1053. doi: 10.4103/0028-3886.266282. PubMed PMID: 31512632.

Background: Patients undergoing epilepsy surgery are on polytherapy. Drug

tapering is usually done after 1 year in adults and after 6 months in children. Sometimes, drugs have to be altered during the perioperative period, which is more commonly seen in hemispherotomy (HS) patients. The present study was done to compare perioperative drug alterations between HS and temporal (TL) lobectomy patients.

Materials and Methods: Prospective analysis of postoperative HS and TL patients was done. Primary outcomes were drug number, dosage changes, and seizure outcome. Secondary outcome studied was a change in intelligence quotient (IQ) in the two groups.

Results: A total of 71 patients were included. Perioperative drug stopping (clobazam - CLB) was needed in 3/38 patients in the HS group, due to sedation. Dosage was reduced in 23/38 (60.52%) in HS group, and in 2/33 (6%) in TL group $P < 0.001$. The most common drug was CLB, with reduction in 21/27 (77.77%) patients, with a mean reduction of $41.21 \pm 4.01\%$. Two patients required drug substitution in the HS group. About 64/71 (90.1%) patients achieved Class I outcome at a 1-year postoperative time point (TL - 90.9%, HS - 89.47%). There was no change in IQ in any of the groups.

Conclusion: Perioperative drug alteration is often needed in the HS patients as compared to TL patients. Benzodiazepines have to be reduced to maintain alertness in the HS patients. The increased sedation postoperatively can be due to decreased cortical drive over the reticular activating system, gamma-aminobutyric acid (GABA) receptor denervation hypersensitivity, or increased activity of drugs over the remaining active hemisphere.

DOI: 10.4103/0028-3886.266282

PMID: 31512632

17: 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

18: Basu K, Maurya N, Kaur J, Saxena R, Gupta V, Sihota R, Ghosh I. Possible role of differentially expressing novel protein markers (ligatin and fibulin-7) in human aqueous humor and trabecular meshwork tissue in glaucoma progression. *Cell Biol Int*. 2019 Jul;43(7):820-834. doi: 10.1002/cbin.11138. Epub 2019 May 18. PubMed PMID: 30958601.

The pathological mechanism underlying glaucoma has always been a complex aspect of this permanently blinding disease but proteomic studies have been helpful in elucidating it to a great extent in several studies. This study was designed to evaluate the expression and to get an idea about the function of two novel markers (ligatin and fibulin-7) identified in human aqueous humor (hAH) in relation to glaucomatous progression. A significant increase in the protein content of glaucomatous hAH compared to that of non-glaucomatous controls (NG-Ctrls) was observed. Ligatin, fibulin-7, and its proteolysis were revealed in hAH of primary open angle glaucoma (POAG), primary angle closure glaucoma (PACG) and NG-Ctrls. Quantification confirmed no significant difference in expression of ligatin, whereas fibulin-7 was significantly ($P < 0.05$) low in hAH of PACG in comparison to NG-Ctrls and POAG. Importantly the immunohistochemical assay for both indicated their possible involvement in the maintenance of the appropriate structure of TM in vivo. Since oxidative stress is a major contributor to glaucomatous pathogenesis, in vitro analysis of nuclear and cytoplasmic fractions indicated intracellular changes in localization and expression of ligatin upon oxidative insult of human trabecular meshwork (TM) cells. While no such changes were found for fibulin-7 expression. This was also corroborated with the immunocytochemical assay. Though a study with a small sample size, this is the first report which confirms the presence of ligatin and fibulin-7 in hAH, quantified their differential expression, and indicated the possibility of their involvement in the maintenance of the TM structure.

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DOI: 10.1002/cbin.11138

PMID: 30958601

19: Batra A, Patel A, Gupta VG, Mehta P, Tvsvvk T, Biswas B, Pramanik R, Das CK, Srivastava P. Oncotype DX: Where Does It Stand in India? *J Glob Oncol*. 2019 Jul;5:1-2. doi: 10.1200/JGO.19.00151. PubMed PMID: 31310569; PubMed Central PMCID: PMC6690658.

20: Benjafield AV, Ayas NT, Eastwood PR, Heinzer R, Ip MSM, Morrell MJ, Nunez CM, Patel SR, Penzel T, PÅ@pin JL, Peppard PE, Sinha S, Tufik S, Valentine K, Malhotra A. Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis. *Lancet Respir Med*. 2019 Aug;7(8):687-698. doi: 10.1016/S2213-2600(19)30198-5. Epub 2019 Jul 9. PubMed PMID: 31300334.

BACKGROUND: There is a scarcity of published data on the global prevalence of obstructive sleep apnoea, a disorder associated with major neurocognitive and

cardiovascular sequelae. We used publicly available data and contacted key opinion leaders to estimate the global prevalence of obstructive sleep apnoea. **METHODS:** We searched PubMed and Embase to identify published studies reporting the prevalence of obstructive sleep apnoea based on objective testing methods. A conversion algorithm was created for studies that did not use the American Academy of Sleep Medicine (AASM) 2012 scoring criteria to identify obstructive sleep apnoea, allowing determination of an equivalent apnoea-hypopnoea index (AHI) for publications that used different criteria. The presence of symptoms was not specifically analysed because of scarce information about symptoms in the reference studies and population data. Prevalence estimates for obstructive sleep apnoea across studies using different diagnostic criteria were standardised with a newly developed algorithm. Countries without obstructive sleep apnoea prevalence data were matched to a similar country with available prevalence data; population similarity was based on the population body-mass index, race, and geographical proximity. The primary outcome was prevalence of obstructive sleep apnoea based on AASM 2012 diagnostic criteria in individuals aged 30-69 years (as this age group generally had available data in the published studies and related to information from the UN for all countries).

FINDINGS: Reliable prevalence data for obstructive sleep apnoea were available for 16 countries, from 17 studies. Using AASM 2012 diagnostic criteria and AHI threshold values of five or more events per h and 15 or more events per h, we estimated that 936 million (95% CI 903-970) adults aged 30-69 years (men and women) have mild to severe obstructive sleep apnoea and 425 million (399-450) adults aged 30-69 years have moderate to severe obstructive sleep apnoea globally. The number of affected individuals was highest in China, followed by the USA, Brazil, and India.

INTERPRETATION: To our knowledge, this is the first study to report global prevalence of obstructive sleep apnoea; with almost 1 billion people affected, and with prevalence exceeding 50% in some countries, effective diagnostic and treatment strategies are needed to minimise the negative health impacts and to maximise cost-effectiveness.

FUNDING: ResMed.

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DOI: 10.1016/S2213-2600(19)30198-5
PMID: 31300334

21: Bhakuni T, Singhal R, Annarapu GK, Sharma A, Mahapatra M, Saxena R, Guchhait P. Unique case of autoantibody mediated inactivation of ADAMTS13 in an Indian TTP patient. *Blood Cells Mol Dis.* 2019 Jul;77:29-33. doi: 10.1016/j.bcnd.2019.03.003. Epub 2019 Mar 23. PubMed PMID: 30953939.

A young Indian female visited hospital as a suspected case of thrombotic thrombocytopenic purpura (TTP) with relapsed thrombotic complications with low platelet counts, infarct in middle cerebral artery and thrombi in microvessels. We first confirmed the deficiency of ADAMTS13 metalloprotease in this patient showing improper cleavage of vWF multimers by her plasma unlike her parents and brother. Although patient had very less ADAMTS13 antigen in plasma, but it did not appear to be the cause of deficiency of the enzyme, because her father had similarly low antigen level and he never had prothrombotic complications. While investigating the genetic change in ADAMTS13, we observed four homozygous-SNPs (g.420T>C, g.1342C>G, g.1716G>A and g.2280T>C) in exon 5, 12, 15 and 19 respectively in patient and her father unlike the heterozygous form of same SNPs in mother and brother. Further to investigate the cause of ADAMTS13 deficiency, we observed an elevated level of antibody against ADAMTS13 in patient unlike her father and other family members. Our study therefore provides the molecular approach of diagnosis of TTP in this patient and also highlights the use of such

techniques in India. More importantly, study provides the clue of alternate treatment such as immunosuppressant therapy to this patient.

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DOI: 10.1016/j.bcnd.2019.03.003

PMID: 30953939

22: Bhandari A, Bansal A, Singh A, Gupta RK, Sinha N. Comparison of transport of chemotherapeutic drugs in voxelized heterogeneous model of human brain tumor. *Microvasc Res.* 2019 Jul;124:76-90. doi: 10.1016/j.mvr.2019.03.003. Epub 2019 Mar 26. PubMed PMID: 30923021.

Systemic administration of chemotherapeutic drugs is widely used in the treatment of cancer. However, a good understanding of drug transport barriers that influence the treatment efficacy is still lacking. In this study, a voxelized numerical model based on dynamic contrast enhanced-magnetic resonance imaging (DCE-MRI) and computational fluid dynamics (CFD) is employed to study the transport and efficacy of three different chemotherapeutic drugs, namely methotrexate, doxorubicin and cisplatin in human brain tumors. DCE-MRI data provides realistic heterogeneous vasculature of the tumor, the permeability of tissue to contrast agent, interstitial volume fraction (porosity) of the tissue and patient-specific arterial input function (AIF). The permeability of tissue to aforementioned drugs is determined by correlating it with the permeability of tissue to the contrast agent. The model is employed to simulate drug concentration in the tissue and compare the effect of heterogeneous vasculature on the distribution of the drugs in the tumor. The drug accumulation is observed to be higher in high permeability areas initially, and in higher porosity areas at later times. Furthermore, it is observed that methotrexate remains in the interstitial space of the tumor in higher concentration for a longer duration as compared to other two drugs, facilitating more tumor cell killing.

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DOI: 10.1016/j.mvr.2019.03.003

PMID: 30923021 [Indexed for MEDLINE]

23: Bharath G, Kumar P, Makkar N, Singla P, Soneja M, Biswas A, Wig N. Mortality in systemic lupus erythematosus at a teaching hospital in India: A 5-year retrospective study. *J Family Med Prim Care.* 2019 Jul;8(7):2511-2515. doi: 10.4103/jfmpc.jfmpc_362_19. PubMed PMID: 31463286; PubMed Central PMCID: PMC6691451.

Objective: Systemic lupus erythematosus (SLE) is an autoimmune disease with an unknown etiology that can be life threatening. This study aimed to study the cause of mortality among admitted SLE patients over a period of 5 years at a teaching hospital in India.

Methods: A 5-year retrospective analysis of mortality in SLE patients admitted under department of medicine of our institute was done. The presenting complaints, treatment history, clinical parameters, laboratory investigations, organ involvement, systemic lupus erythematosus disease activity index (SLEDAI), and cause of mortality were collected from the medical records on a predesigned proforma. A further analysis of two groups based on the cause of mortality was done.

Results: In total, 53 death records were analyzed. Mortality in 28 SLE patients was due to high disease activity (Group I) and mortality in 25 patients was attributed due to both high disease activity and concomitant infection (Group II). Most of the patients were female (98%) and mean age of patient was 30.6

years. About 19 patients (35.8%) were diagnosed with SLE during hospital admission. Fever was the most common presenting complaint (69.8%) and lupus nephritis was the most common organ dysfunction seen (84.9%). Myocarditis was observed in 11 patients and 9 patients had cerebrovascular accident. The mean hemoglobin was lower in Group II (7.4 vs. 8.7 g/dL, $P = 0.02$). The median total leukocyte count was significantly higher in Group II (10,200 vs. 6600, $P = 0.02$). The mean serum urea and creatinine levels were also significantly higher in Group II (141.41 vs. 87.8 mg/dL, $P = 0.006$ and 4.7 vs. 1.7, $P = 0.0001$), respectively. The mean SLEDAI in Group I was 20.8 ± 8.9 and in Group II was 17.7 ± 7.5 . Bacterial pneumonia (17) was the most common infection, followed by tuberculosis (2) and fungal infection (2).

Conclusion: Mortality among SLE patients could be due to disease flare or concomitant infection. Lung is the most common organ affected by infection in these patients.

DOI: 10.4103/jfmpe.jfmpe_362_19

PMCID: PMC6691451

PMID: 31463286

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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 still 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 initially guidelines published in 2014 together with the update. Moreover, the presented update includes also techniques which were not known 3 years before.

DOI: 10.1007/s00464-019-06908-6

PMID: 31292742

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Hypoglycaemia in infants and children is caused by a number of endocrine and metabolic defects, some of which are unique to this age group. Growth hormone deficiency (GHD) has been rarely reported as a cause of recurrent fasting hypoglycaemia in children. An 18-month-old male child presented to us for evaluation of neuroglycopenic symptoms caused by recurrent episodes of fasting hypoglycaemia. Laboratory evaluation revealed ketotic hypoinsulinaemic hypoglycaemia. The child was diagnosed to have GHD on the basis of two failed stimulation tests. A detailed work-up for metabolic and other hormonal causes of hypoglycaemia was negative. We present the case for its rarity and to highlight the importance of a detailed metabolic and hormonal assessment in evaluation of childhood hypoglycaemia.

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DOI: 10.1136/bcr-2019-231056

PMID: 31352401

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Singh CM, Gope R, Nath V, Sareen N, De Wagt A, Unisa S. WASH practices and its association with nutritional status of adolescent girls in poverty pockets of eastern India. *BMC Womens Health*. 2019 Jul 5;19(1):89. doi: 10.1186/s12905-019-0787-1. PubMed PMID: 31277634; PubMed Central PMCID: PMC6612154.

BACKGROUND: Water, Sanitation, and Hygiene (WASH) practices may affect the growth and nutritional status among adolescents. Therefore, this paper assesses WASH practices and its association with nutritional status among adolescent girls.

METHODS: As a part of an intervention programme, this study is based on baseline cross-sectional data. It was conducted between May 2016-April 2017 in three Indian states (Bihar, Odisha, and Chhattisgarh). From a sample of 6352 adolescent girls, information on WASH practices, accessibility to health services and anthropometric measurements (height, weight and mid upper arm circumference (MUAC)) was collected. Descriptive statistics were used to examine WASH practices, and nutritional status among adolescent girls. Determinants of open defecation and menstrual hygiene were assessed using logistic regression. Association between WASH and nutritional status of adolescent girls was determined using linear regression.

RESULTS: Findings showed 82% of the adolescent girls were practicing open defecation and 76% were not using sanitary napkins. Significant predictors of open defecation and non use of sanitary napkin during menstruation were non Hindu households, households with poorer wealth, non availability of water within household premise, non visit to Anganwadi Centre, and non attendance in Kishori group meetings. One-third of adolescent girls were stunted, 17% were thin and 20% had MUAC <19cm. Poor WASH practices like water facility outside the household premise, unimproved sanitation facility, non use of soap after defecation had significant association with poor nutritional status of adolescent girls.

CONCLUSIONS: Concerted convergent actions focusing on the provision of clean water within the household premise, measures to stop open defecation, promotion of hand washing, accessibility of sanitary napkins, poverty alleviation and behavior change are needed. Health, nutrition and livelihood programmes must be interspersed, and adolescents must be encouraged to take part in these programmes.

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PMCID: PMC6612154

PMID: 31277634

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AIMS AND OBJECTIVES: The study aimed to assess and compare fractional anisotropy (FA) in bilateral superior longitudinal fasciculi (SLF) and arcuate fasciculi (AF) across schizophrenia with auditory hallucinations (AH), without AH, and healthy controls using diffusion tensor imaging (DTI) tractography.

METHODOLOGY: Right-handed adult (18-50 years) individuals with DSM-5 diagnosis of schizophrenia with AH (group-I; n=30) were compared to those without lifetime AH (group-II; n=32) and healthy controls (group-III; n=30). Severity of psychosis in groups-I and II was assessed using SAPS, SANS, and CGI-SCH, and psychopathology

was assessed using PSYRATS. The FA was calculated for all images on DTI studio-version 3.0 using tractography technique.

RESULTS: All three groups were comparable for age, gender, education and illness-severity. Schizophrenia subjects with AH had significantly lower FA values in bilateral SLF and AF compared to those without AH and healthy controls. No difference was observed in corresponding FA values between schizophrenia without AH and healthy controls.

CONCLUSION: White matter disruptions in bilateral SLF and AF appear to be specific to schizophrenia with AH and must be explored further as potential marker of AH, pending replication in other studies.

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DOI: 10.1016/j.ajp.2019.07.043

PMID: 31398683

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BACKGROUND: Platelet-rich plasma (PRP) has emerged as the forerunner among disease-modifying treatment options for early osteoarthritis (OA) of the knee. However, no consensus is available regarding optimum dosing schedules.

PURPOSE: To determine whether multiple injections of PRP (3 injections) provide better short-term and long-term results than a single injection of PRP in a guinea pig model of knee OA.

STUDY DESIGN: Controlled laboratory study.

METHODS: 36 Dunkin-Hartley guinea pigs (weighing ~600-800 g) were chosen for this study. The animals were assigned to group DC (disease control group), group G1 (single-PRP group), and group G2 (multiple-PRP group) containing 10, 10, and 12 animals, respectively. Another 4 animals were used for preparation of allogenic PRP. Groups G1 and G2 received 1 and 3 injections of PRP, respectively, at weekly intervals in the intervention knee while the contralateral knee was injected with normal saline. Group DC received no intervention in either knee. Half of the animals from each group (subgroups DC.3, G1.3, and G2.3) were sacrificed at 3 months, and the remaining half (subgroups DC.6, G1.6, and G2.6) were sacrificed at 6 months after intervention. Both knee joints were harvested for histological assessment of articular cartilage and synovium.

RESULTS: The mean synovial scores for groups G1 and G2 were significantly better than those for group DC at 3 months. No difference was found between groups G1 and G2 at 3 months. At 6 months, group G2 had significantly better mean synovial scores than group G1 and group DC. The mean articular cartilage scores in group G2 were significantly better than those in group DC at 3 months. However, at 6 months, no significant difference was found among any of the groups in terms of mean articular scores.

CONCLUSION: Both single and multiple injections of PRP exert similar anti-inflammatory effects on the synovium in the short term. However, this effect

is sustained in the long term only for multiple injections. Multiple injections of PRP exert a chondroprotective effect, but only in the short term. This effect is not seen with a single injection of PRP.

CLINICAL RELEVANCE: This study provides insight into the histological basis for the superiority of multiple injections of PRP.

DOI: 10.1177/0363546519856605

PMID: 31268737

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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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DOI: 10.1016/j.wneu.2019.06.218

PMID: 31295593

37: Dahiya B, Khan A, Mor P, Kamra E, Singh N, Gupta KB, Sheoran A, Sreenivas V, Mehta PK. Detection of Mycobacterium tuberculosis lipoarabinomannan and CFP-10 (Rv3874) from urinary extracellular vesicles of tuberculosis patients by immuno-PCR applicable to this manuscript. *Pathog Dis.* 2019 Jul 1;77(5). pii: ftz049. doi: 10.1093/femspd/ftz049. PubMed PMID: 31549171.

Extracellular vesicles (EVs), the small circulating vesicles released from urine samples of tuberculosis (TB) patients, contain a pool of biomarkers. We recently detected Mycobacterium tuberculosis lipoarabinomannan (LAM) and CFP-10 (Rv3874) biomarkers from the urinary EVs of pulmonary TB (PTB) and extrapulmonary TB (EPTB) patients by immuno-polymerase chain reaction (I-PCR) assay and the results were compared with the analogous enzyme-linked immunosorbent assay (ELISA). The detection limits of both purified LAM and CFP-10 were determined to be 1 fg/mL with I-PCR, which was 106 times lower than ELISA. Detection of LAM and CFP-10 biomarkers in urinary EVs of TB patients by I-PCR showed superiority over ELISA.

Notably, LAM I-PCR revealed sensitivities of 74.3 and 67.9% in PTB (n = 74) and EPTB (n = 53) patients, respectively, with specificities of 91.5-92.8% (n = 116). Moreover, the sensitivities attained with LAM I-PCR were significantly higher (P < 0.01) than with CFP-10 I-PCR. After further improving the sensitivity and specificity of the assay, our I-PCR based on LAM detection in urinary EVs may be used as an adjunct test for rapid diagnosis of TB.

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DOI: 10.1093/femspd/ftz049

PMID: 31549171

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BACKGROUND/AIMS: The existing histological classifications for the interpretation of small intestinal biopsies are based on qualitative parameters with high intraobserver and interobserver variations. We have developed and propose a quantitative histological classification system for the assessment of intestinal mucosal biopsies.

METHODS: We performed a computer-assisted quantitative histological assessment of digital images of duodenal biopsies from 137 controls and 124 patients with celiac disease (CeD) (derivation cohort). From the receiver-operating curve analysis, followed by multivariate and logistic regression analyses, we identified parameters for differentiating control biopsies from those of the patients with CeD. We repeated the quantitative histological analysis in a validation cohort (105 controls and 120 patients with CeD). On the basis of the results, we propose a quantitative histological classification system. The new classification was compared with the existing histological classifications for interobserver and intraobserver agreements by a group of qualified pathologists.

RESULTS: Among the histological parameters, intraepithelial lymphocyte count of $\geq 25/100$ epithelial cells, adjusted villous height fold change of ≤ 0.7 , and crypt depth-to-villous height ratio of ≥ 0.5 showed good discriminative power between the mucosal biopsies from the patients with CeD and those from the controls, with 90.3% sensitivity, 93.5% specificity, and 96.2% area under the curve. Among the existing histological classifications, our quantitative histological classification showed the highest intraobserver (69.7%-85.03%) and interobserver (24.6%-71.5%) agreements.

CONCLUSIONS: Quantitative assessment increases the reliability of the histological assessment of mucosal biopsies in patients with CeD. Such a classification system may be used for clinical trials in patients with CeD. (*Intest Res*, Published online).

DOI: 10.5217/ir.2018.00167

PMCID: PMC6667359

PMID: 30996219

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The ridged skin of the palms and soles has several unique features: (i) presence of dermatoglyphics created by alternating ridges and grooves forming a unique

pattern, (ii) presence of the highest density of eccrine sweat glands and absence of pilosebaceous units, and (iii) differential expression of keratins compared to the glabrous skin. These features explain the preferential localization of palmoplantar keratoderma (PPK) and several of its characteristic clinical features. PPK develops as a compensatory hyperproliferation of the epidermis and excessive production of stratum corneum in response to altered cornification of the palmoplantar skin due to mutations in the genes encoding several of the proteins involved in it. PPK can manifest as diffuse, focal, striate, or punctate forms per se or as a feature of several dermatological or systemic diseases. There is a wide genetic and phenotypic heterogeneity in hereditary PPK, due to which reaching an accurate diagnosis only on the basis of clinical features may be sometimes challenging for the clinicians in the absence of molecular studies. Nevertheless, recognizing the clinical patterns of keratoderma, extent of involvement, degree of mutilation, and associated appendageal and systemic involvement may help in delineating different forms. Molecular studies, despite high cost, are imperative for accurate classification, recognizing clinical patterns in resource poor settings is important for appropriate diagnosis, genetic counseling, and management. This review intends to develop a practical approach for clinical diagnosis of different types of hereditary PPK with reasonable accuracy.

DOI: 10.4103/idoj.IDOJ_367_18
PMCID: PMC6615398
PMID: 31334055

40: Dhamija E, Deshmukh A, Meena P, Kumar M, Bhatnagar S, Thulkar S. Complementary Role of Intervention Radiology in Palliative Care in Oncology Setting. *Indian J Palliat Care*. 2019 Jul-Sep;25(3):462-467. doi: 10.4103/IJPC.IJPC_24_19. PubMed PMID: 31413465; PubMed Central PMCID: PMC6659525.

Owing to advances in treatment of cancer, there has been increase in life expectancy. Palliative care aims at improving quality of life of patients suffering from malignancy and is now recognized as a separate subspecialty. Management of cancer patients needs a multidisciplinary approach, and radiology has a key role to play at every step of it. Interventional radiology has broadened its scope immensely over the last decade with development of newer and less invasive applications useful in oncology and palliative care. The role of interventional radiologists begins from obtaining tissue for histopathological examination and extends to controlling disease spread with ablation or chemoembolization, to managing the tumor-related complications and relieving stressful symptoms such as dyspnea and pain. This article aims to review the interventional radiologist's arsenal in managing patients with malignancies with a special emphasis on palliative care, providing a more holistic approach in improving the quality of life of cancer patients.

DOI: 10.4103/IJPC.IJPC_24_19
PMCID: PMC6659525
PMID: 31413465

41: Dhiman Y, Hans R, Sharma RR, Malhotra P, Marwaha N. Comparison of efficacy of low and high dose prophylactic platelet transfusion therapy in thrombocytopenic haemato-oncology patients. *Transfus Apher Sci*. 2019 Jul 10. pii: S1473-0502(19)30141-7. doi: 10.1016/j.transci.2019.06.033. [Epub ahead of print] PubMed PMID: 31345687.

INTRODUCTION: To determine an optimal platelet dose in thrombocytopenic patients is important for their judicious use. Transfusing platelets in different doses and comparing their post transfusion response can achieve this.

AIM: To compare the efficacy of low and high dose single donor apheresis platelets (SDAP) with standard dose transfusions in terms of Corrected Count Increment (CCI), Percent Platelet Recovery (PPR) and transfusion free interval.

METHOD: It was a prospective case control study done from January 2016 to April 2017. Twenty-eight hemato-oncology patients with CCI ≥ 5000 at 20-24 hours after standard dose (3×10^{11} /unit), received low dose (1.5×10^{11} platelets/unit) and high dose ($>4 \times 10^{11}$ platelets/unit) SDAP. CCI and PPR were calculated after 20 to 24 hours of transfusion. Transfusion free interval and bleeding episodes were also noted. Grading was done according to WHO bleeding scale.

RESULT: There was no statistical difference in CCI and PPR when standard dose was compared with low dose (CCI: $p=0.92$, PPR: $p=0.89$). When standard and high dose was compared, standard dose gave better results than the high dose in terms of CCI ($p=0.006$) and PPR ($p=0.008$) although the post transfusion increments were comparable ($p=0.938$). High dose gave better ($p=0.005$) platelet count increments than low dose but CCI ($p=0.04$) and PPR ($p=0.05$) was significantly less than the low dose. The difference in transfusion free intervals after three doses was not significant. Donor exposure to the patients was significantly ($p=0.000$) reduced to 17.5%.

CONCLUSION: Possibility of low dose as an alternative to standard dose can be considered in view of comparable platelet response indicators and significantly reduced donor exposure.

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DOI: 10.1016/j.transci.2019.06.033
PMID: 31345687

42: Dhiman Y, Patidar GK, Hazarika A. Consecutive reactive results in screening of transfusion transmitted infections: Family history of blood donors is also important. *Transfus Apher Sci.* 2019 Aug;58(4):464-467. doi: 10.1016/j.transci.2019.05.013. Epub 2019 Jul 10. PubMed PMID: 31324573.

BACKGROUND: Enzyme linked immunosorbent assay (ELISA) test is used for screening of transfusion transmitted infections (TTI) in blood donors. Consecutive reactive results in ELISA is due to sample/reagent carryover or donor related. In this study we tried to find out the possibilities of family history/close contacts with patients of hepatitis among these consecutive reactive donors.

AIM: To analyze the consecutive reactive results in ELISA tests for TTI testing on samples of healthy blood donors.

MATERIAL AND METHODS: A retrospective observational study was conducted from January 2016 to July 2018 in a tertiary care hospital, North India. Consecutive reactive results by fourth generation ELISA for TTIs screening were evaluated for possible reasons. Confirmation tests were not done. Reactive donors were contacted telephonically for relevant history of close contact with infected personnel.

RESULTS: Out of 53,740 donations 1,061 were reactive for TTIs during our study period. Prevalence of Hepatitis B (HBV), Human Immunodeficiency (HIV) and Hepatitis C (HCV) virus infection in blood donors were 1.27%, 0.20% and 0.50% respectively. Consecutive reactive results for HBV were 9.20% (63/685), for HCV 6.0% (16/266) and nil for HIV. There was no sample carryover in this. Out of 79 consecutive reactive donors 69 donated for same patients and 32 were related with infected patient which are statistically significant ($p < 0.0001$).

DISCUSSION: This study recommends that in analysis of consecutive positive results in ELISA along with looking for procedure/sample error, there is also a need to take retrospective history of donors for close contact with infected patients.

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DOI: 10.1016/j.transci.2019.05.013

PMID: 31324573

43: Dhochak N, Jat KR, Lodha R, Kabra SK. Lentil aspiration leading to likely hypersensitivity pneumonitis. *Pediatr Pulmonol.* 2019 Nov;54(11):1781-1786. doi: 10.1002/ppul.24463. Epub 2019 Jul 25. PubMed PMID: 31347305.

RATIONALE: A variety of inhaled antigens have been implicated to cause hypersensitivity pneumonitis (HP). We observed that children force-fed with lentil-based weaning food had persistent respiratory symptoms and radiology similar to HP.

OBJECTIVES: To describe the clinical features of lentil HP.

METHODS: We conducted a retrospective review of records of children with lentil HP attending Pediatric Chest Clinic at a tertiary care hospital in North India from 2008-2018. We included case records with elevated immunoglobulin G (IgG) specific for lentil antigen.

MEASUREMENTS AND MAIN RESULTS: Nine children (seven boys) were identified with median (IQR) age of onset of symptoms and diagnosis at 9 (6, 12) and 11 (10, 16) months, respectively. Chronic cough (100%), shortness of breath (89%), fever (78%), vomiting (56%), and wheezing (33%) were common symptoms. Fine crackles were heard in 33% of children, none had clubbing. CT scans showed nodular opacities and consolidation in 78% and 67% children, respectively. Bronchoalveolar lavage showed increased neutrophils and lymphocytes (67% and 33%, respectively). All children showed rapid remission with systemic steroids (prednisolone), starting at a median dose of 1 (1, 1.1) mg/kg-1 day-1. One child had a clinical relapse which was treated with oral steroids again. IgG specific to lentil antigens was elevated in children with lentil HP (21->200mgA/L) compared with children with other chronic respiratory illnesses (n=7, <2-11.4mgA/L).

CONCLUSIONS: Lentil aspiration is an important cause of HP in infants of weaning age with force-feeding practices. Further studies are needed to identify aspirated antigens which cause HP in aspiration prone children.

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DOI: 10.1002/ppul.24463

PMID: 31347305

44: Dhooria S, Mehta RM, Madan K, Vishwanath G, Sehgal IS, Chhajed PN, Prakash G, Gupta N, Bal A, Agarwal R. A Multicenter Study on the Utility of EBUS-TBNA and EUS-B-FNA in the Diagnosis of Mediastinal Lymphoma. *J Bronchology Interv Pulmonol.* 2019 Jul;26(3):199-209. doi: 10.1097/LBR.0000000000000552. PubMed PMID: 31238329.

BACKGROUND: There is conflicting data on the utility of endobronchial ultrasound (EBUS)-guided transbronchial needle aspiration (TBNA) for the detection and subtyping of lymphomas. Herein, we present our experience with EBUS-TBNA in suspected lymphoma.

METHODS: This was a multicenter retrospective study of subjects with suspected lymphoma who underwent EBUS-TBNA (July 2011 to June 2017). The performance characteristics of EBUS-TBNA were calculated separately for suspected new-onset and recurrent lymphoma as well as for subtyping. We also analyzed the factors predicting the yield of EBUS-TBNA in suspected lymphoma.

RESULTS: Among the 4803 EBUS procedures performed, 92 (1.9%) subjects had either suspected or proven lymphoma; 48 were finally diagnosed to have lymphoma. The diagnostic sensitivities of EBUS-TBNA in new-onset and recurrent lymphomas were

72.7% and 73.3%, respectively. Only 24.2% (8/33) subjects with new-onset lymphoma could be appropriately subtyped. This low yield was possibly due to inadequate material for cell block in 10 subjects, and performance of immunophenotyping and flow cytometry in only 5 and 1 subjects, respectively. Among the suspected cases of recurrence, EBUS-TBNA was sufficient for management in 81.8% (18/22). On a multivariate analysis, no factor (rapid onsite evaluation, needle size, number of lymph nodes sampled, passes per node, and size of the largest lymph node sampled) predicted the diagnostic yield.

CONCLUSION: EBUS-TBNA is a useful investigation in the diagnostic algorithm of suspected lymphoma as it helps avoid other invasive diagnostic procedures. The sensitivity of EBUS-TBNA in subtyping new-onset mediastinal lymphoma depends on the adequacy of cell aspirate and the judicious utilization of pathologic techniques.

DOI: 10.1097/LBR.0000000000000552

PMID: 31238329

45: Dua S, Singh SP, Chawla A, Mohan L, Bhattacharya A, Basannar DR. Ventilatory parameters at rest after months of stay at 3300 m: A comparison between acclimatized lowlanders and natives at Leh. *Med J Armed Forces India*. 2019 Jul;75(3):274-281. doi: 10.1016/j.mjafi.2018.03.008. Epub 2018 Jul 4. PubMed PMID: 31388229; PubMed Central PMCID: PMC6676317.

Background: Increased pulmonary ventilation helps lowlanders and natives to maintain arterial oxygenation at high altitudes. Natives of Ladakh have been shown to have similar ventilatory parameters as Tibetans at 3300 m. But there is limited literature comparing these parameters in Ladakhi natives with acclimatized lowland sojourners.

Methods: End-tidal carbon dioxide partial pressure (EtCO₂), blood oxygen saturation (SpO₂) and hemoglobin concentration (Hb) were measured in 276 participants, 126 native highlanders (NHL - 40 females, 86 males) and 150 acclimatized lowlanders (ALL - 60 females, 90 males).

Results: EtCO₂ was greater in the NHL compared to the ALL, (33.8 ± 3.3 vs 31 ± 2.5 mmHg) although SpO₂ was lower (90.9 ± 2.4 vs 91.7 ± 2.3%). When grouped by sex, NHL males had significantly greater EtCO₂ than NHL females, ALL males and ALL females. Hb and calculated arterial oxygen content was similar in Ladakhis and acclimatized lowlanders, although greater in males compared to females. Systemic blood pressure, heart rate and the proportion of hypertensives was significantly greater in the ALL.

Conclusion: Native Ladakhis, have a significantly greater resting EtCO₂ (especially in males) and lower SpO₂ than acclimatized lowlanders. Blood Hb concentration and oxygen content is, however, similar in natives and acclimatized lowlanders of the same sex.

DOI: 10.1016/j.mjafi.2018.03.008

PMCID: PMC6676317 [Available on 2020-07-01]

PMID: 31388229

46: Dubey M, Nongkynrih B, Gupta SK, Kalaivani M, Goswami AK, Salve HR. Sleep Quality Assessment of Adolescents Residing in an Urban Resettlement Colony, New Delhi, India. *Indian J Community Med*. 2019 Jul-Sep;44(3):271-276. doi: 10.4103/ijcm.IJCM_87_19. PubMed PMID: 31602118; PubMed Central PMCID: PMC6776952.

Background: Sleep is essential for physical and psychological development of children as well as adolescents. Poor sleep has been noted to lead to poor diet, obesity, stunted growth, mental health issues, and substance abuse. Despite the knowledge regarding the importance of sufficient sleep, the prevalence of insufficient sleep has been noted to increase among children and adolescents.

Objective and Aim: The aim of the study was to determine the prevalence of poor sleep quality among adolescents of an urban resettlement colony and to evaluate the association of poor sleep quality with the correlates.

Materials and Methods: A community-based cross-sectional study was conducted including 620 adolescents aged 10-19 years, in an Urban Resettlement Colony, Dakshinpuri Extension, New Delhi. A self-reported interview was conducted with the pretested, semi-structured interview schedule. The interview focused on sociodemographic variable, sleep quality using Pittsburgh sleep quality index, Perceived stress scale, screen time, and anthropometric measurements.

Results: The mean of Pittsburgh sleep quality index total score was 2.3 (standard deviation = 1.9). Among the adolescents, 7.3% of them were found to be poor sleepers. Poor sleep quality was observed to be higher during school days as compared to vacation (9.3%, 6.5%, respectively). Adolescents of age group equal to and > 15 years have higher odds of having poor sleep quality than those younger than 15 years of age (odds ratio = 4.9; 95% confidence interval: 2.2, 10.8).

Conclusion: Significant difference in sleep duration was noted among adolescents of age ≥ 15 years as compared to the younger group in the present study.

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DOI: 10.4103/ijcm.IJCM_87_19

PMCID: PMC6776952

PMID: 31602118

47: Dudi P, Goyal B, Saxena V, Rabari K, Mirza AA, Naithani M, Kumar T, Goyal R. Single point insulin sensitivity estimator as an index for insulin sensitivity for metabolic syndrome: A study in North Indian population. *J Lab Physicians*. 2019 Jul-Sep;11(3):244-248. doi: 10.4103/JLP.JLP_163_18. PubMed PMID: 31579190; PubMed Central PMCID: PMC6771329.

BACKGROUND: Various indices for estimating insulin sensitivity, based on glucose tolerance test and fasting insulin levels, have been devised. However, they are laborious, time-consuming, and costly. Recently, a new index, single point insulin sensitivity estimator (SPISE) based on TG, high-density lipoproteins (HDL), and body mass index (BMI) was proposed in the European population and was found comparable to gold standard test. Decreased insulin sensitivity is a hallmark of metabolic syndrome (MetS). Hence, the current study was planned to determine the optimal cutoff of SPISE with high sensitivity and specificity in MetS patients of the North Indian population.

MATERIALS AND METHODS: A community-based cross-sectional study including 229 MetS cases and 248 controls was conducted. MetS was defined according to the South Asian Modified National Cholesterol Education Program criteria. SPISE index was calculated for cases and controls using the formula devised by Paulmichl et al.: $SPISE = 600 \times HDL-C0.185 / (TG0.2 \times BMI1.338)$. Receiver operating characteristic (ROC) curve was plotted for determining optimal cutoff for SPISE in MetS.

RESULTS: SPISE was significantly lower in MetS patients (5.35 ± 1.35) than that for controls (7.45 ± 2) with $P < 0.05$ (confidence interval [CI]: 1.79-2.41). ROC curve showed area under the curve = 0.83 for SPISE ($P < 0.05$, CI: 0.79-0.86), showing SPISE to have good predictive ability to discriminate MetS cases from controls. The cutoff value of SPISE index for predicting insulin sensitivity in MetS was found out to be 5.82 with sensitivity and specificity of 73% and 80%, respectively. This cutoff is lower than the European population (6.61), indicating higher insulin resistance (IR) in the study population.

CONCLUSION: SPISE could be a useful potential low-cost indicator with high sensitivity and specificity for predicting IR in MetS.

Copyright: © 2019 Journal of Laboratory Physicians.

DOI: 10.4103/JLP.JLP_163_18
PMCID: PMC6771329
PMID: 31579190

48: Elavarasi A, Goyal V, Singh MB, Padma Srivastava MV. Is Triamcinolone an Easy and Efficient Way to Treat Meralgia Paresthetica? A Cohort Study. *Ann Indian Acad Neurol*. 2019 Jul-Sep;22(3):308-310. doi: 10.4103/aian.AIAN_432_18. PubMed PMID: 31359943; PubMed Central PMCID: PMC6613404.

Introduction: Meralgia paresthetica (MP) is a painful mononeuropathy of the lateral femoral cutaneous nerve. It is usually idiopathic and can be treated with drugs used for neuropathic pain such as pregabalin, gabapentin, and amitriptyline.

Objectives: This study was done to study the effect of triamcinolone acetone on drug refractory MP.

Methods: This study was a retrospective case file review.

Results: Eight patients were treated with local injections of triamcinolone. The patients were followed up for a period of 4 months to 54 months. There was significant symptomatic improvement with six patients having complete improvement and all patients reporting >50% improvement. Patients who had recurrence of symptoms on follow up received up to four injections as per their requirement and repeated injections also produced >50% symptom relief.

Conclusion: Triamcinolone acetone injected locally seems to be an effective and safe treatment for refractory MP. A randomized control trial has been planned to look for efficacy and safety.

DOI: 10.4103/aian.AIAN_432_18
PMCID: PMC6613404
PMID: 31359943

49: Faruq M, Kumar D, Wadhwa S, Shamim U, Mathur A, Parveen S, Garg A, Srivastava AK. Intrafamilial variable spastic paraplegia/ataxia/ALS phenotype linked to a novel KIF5A mutation. *Clin Genet*. 2019 Sep;96(3):271-273. doi: 10.1111/cge.13585. Epub 2019 Jul 8. PubMed PMID: 31286494.

50: Gamanagatti S. Necessity of Image Guidance for Subclavian Catheterization to Improve Patient Safety. *Indian J Pediatr*. 2019 Jul 26. doi: 10.1007/s12098-019-03039-7. [Epub ahead of print] PubMed PMID: 31346970.

51: Garg B. Legends in Orthopedics: Prof. A K Gupta. *Indian J Orthop*. 2019 Jul-Aug;53(4):582. doi: 10.4103/ortho.IJOrtho_612_18. PubMed PMID: 31303677; PubMed Central PMCID: PMC6590013.

52: Garg M, Garg K, Singh PK, Satyarthee GD, Agarwal D, Mahapatra AK, Sharma BS. Neurogenic Fever in Severe Traumatic Brain Injury Treated with Propranolol: A Case Report. *Neurol India*. 2019 Jul-Aug;67(4):1097-1099. doi: 10.4103/0028-3886.266258. PubMed PMID: 31512644.

The causes of intractable fever in severe traumatic brain injury (TBI) patients can be diverse. Neurogenic fever (NF) which is a rare entity can develop due to autonomic dysregulation in the absence of infection or any other cause of fever. It manifests as fever, tachycardia, paroxysmal hypertension, dilated pupils, tachypnea, and extensor posturing in cases of severe TBI, brain neoplasms or brain haemorrhage. We found propranolol to be effective in controlling many of the manifestations of neurogenic fever in our patients with severe TBI. Fever in severe TBI patients is not an uncommon phenomenon, but when intractable with negative fever workup, a central cause should be considered. Propranolol is deemed as one of the most efficacious drugs for managing NF due to dysautonomia.

We want to apprise the readers about this entity and its treatment with beta-blockers.

DOI: 10.4103/0028-3886.266258
PMID: 31512644

53: Garg R. Emergency surgical access in complete ventilation failure or CICO: The right time! *J Anaesthesiol Clin Pharmacol*. 2019 Jul-Sep;35(3):324-325. doi: 10.4103/joacp.JOACP_310_18. PubMed PMID: 31543579; PubMed Central PMCID: PMC6747988.

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55: Garg Y, Jain S, Kumar A. A rare case of clomiphene-induced leukocytoclastic vasculitis. *J Basic Clin Physiol Pharmacol*. 2019 Jul 18;30(4). pii: /j/jbcpp.2019.30.issue-4/jbcpp-2018-0183/jbcpp-2018-0183.xml. doi: 10.1515/jbcpp-2018-0183. PubMed PMID: 31343980.

Clomiphene citrate is a first-line drug for the induction of ovulation in infertility cases. Leukocytoclastic vasculitis (LCV) is an extremely rare serious adverse drug reaction to clomiphene. We report here the case of a 30-year-old Indian female patient who presented with generalized petechiae and palpable purpura without fever and sparing the mucosa, temporally related to clomiphene intake and consistent with LCV histologically. Clomiphene was stopped and the patient was treated symptomatically with prednisolone 40 mg/day, oral levocetirizine 5 mg twice daily, and emollients and calamine lotion topically. The patient improved over 3-4 weeks. The prednisolone dose was tapered weekly and withdrawn gradually. To date, drug-induced LCV has not been previously reported with clomiphene. Although rare, clomiphene could be considered a potential cause of drug-induced cutaneous LCV in the differential diagnosis of erythematous rash with non-blanching petechiae and purpura.

DOI: 10.1515/jbcpp-2018-0183
PMID: 31343980

56: Gautam D, Pande A, Malhotra R. Fatal Cobalt Cardiomyopathy Following Revision Total Hip Arthroplasty - A Brief Report with Review of Literature. *Arch Bone Jt Surg*. 2019 Jul;7(4):379-383. PubMed PMID: 31448317; PubMed Central PMCID: PMC6686060.

Ceramic bearing surfaces are being increasingly used in young patients undergoing total hip arthroplasty. However, failures have been reported including fractures even with the newer third generation ceramics. The recommended treatment for fracture of ceramic bearing surfaces is complete synovectomy and revision total hip arthroplasty. However, disappointing results have also been reported with this approach. The residual ceramic particles may lead to complications. We report a fatal case of cobalt toxicity leading to cardiomyopathy secondary to the catastrophic failure of a Cobalt-Chrome femoral head, which followed the revision of a fractured ceramic-on-ceramic total hip arthroplasty.

PMCID: PMC6686060
PMID: 31448317

57: Gehani M, Kapur S, Bhardwaj P, Nag V, Balasubramaniam SM, Kammili N, Madhuri SD. Unmet Need of Antenatal Screening for Asymptomatic Bacteriuria: A Risk Factor

for Adverse Outcomes of Pregnancy. Indian J Community Med. 2019 Jul-Sep;44(3):193-198. doi: 10.4103/ijcm.IJCM_355_18. Review. PubMed PMID: 31602101; PubMed Central PMCID: PMC6776957.

Recommended urine culture is unsuitable for screening pregnant women for asymptomatic bacteriuria due to long turn-around time, unaffordability, and user-unfriendliness. The objective of this review was to evaluate the suitability of various tests for this purpose. A PubMed-based systematic review of published articles irrespective of year and language was done. Search terms included asymptomatic bacteriuria, screening test, urinary tract infection, and diagnostic test. Diagnostic accuracy studies conducted on human populations comparing tests with urine culture were included. One author extracted predefined data fields, including quality indicators, another validated it. Of 78 records, 25 studies describing 15 tests were included. All tests were rapid, seven were valid and two of them were affordable and easy-to-use. No test provided comprehensive identification with antibiotic susceptibility. Despite publication bias, no test was found suitable for screening asymptomatic bacteriuria antenatally and providing evidence-based prescription. Further research is needed to develop tests which suit this purpose.

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DOI: 10.4103/ijcm.IJCM_355_18
PMCID: PMC6776957
PMID: 31602101

58: Ghosh-Jerath S, Downs S, Singh A, Paramanik S, Goldberg G, Fanzo J. Innovative matrix for applying a food systems approach for developing interventions to address nutrient deficiencies in indigenous communities in India: a study protocol. BMC Public Health. 2019 Jul 15;19(1):944. doi: 10.1186/s12889-019-6963-2. PubMed PMID: 31307415; PubMed Central PMCID: PMC6631988.

BACKGROUND: Indigenous communities retain knowledge of the land and food resources rooted in historical continuity within their region of residence. Food systems research can be leveraged to identify strategies to encourage sustainable use of complex multi-species agroforestry systems by indigenous communities contributing to nutritional needs while simultaneously preserving the ecosystems and their benefits to society. Till date, the analyses of food systems have predominantly focused on high income countries often overlooking the alternatives (dietary and production) that would be most relevant to low and middle income countries (LMIC). Thus, innovative methodological approaches are needed to comprehensively characterize diverse food systems in LMICs with special reference to indigenous communities.

DESIGN: This protocol paper describes a food systems approach that will be employed to understand diverse and dynamic food systems of vulnerable tribal communities of Jharkhand, India and leverage their agroforestry systems to improve dietary diversity, nutrition status and address food security. Four tribal groups namely Santhal, Ho, Munda and Sauria Paharia of Godda, West Singhbhum and Khunti districts of Jharkhand would be studied. This will be an exploratory cross-sectional study design, along with a longitudinal component to capture seasonality in dietary intake and agricultural diversity. A mixed methods approach will be used based on a conceptual framework on drivers of food systems, food supply chain, food environment (both wild & cultivated, and market food environments), as well as consumer behaviour and maternal and child health outcomes in tribal communities. The quantitative surveys will be conducted on socio-economic, demographic profile of households, their availability of, access to and utilization of food environment and nutritional status of reproductive age

group women and children under 5 years. Qualitative enquiries will examine barriers and facilitators to increase sustainable production, procurement and consumption of indigenous foods. The final outcome would be development of interventions to promote indigenous food consumption.

DISCUSSION: By utilizing a combination of value chain analysis and 'Optifoods linear programming software' that will use above information on indigenous community, dietary intake, nutritional status and food environment, evidence based interventions promoting indigenous food systems aimed at addressing food and nutritional security of tribal communities will be developed.

DOI: 10.1186/s12889-019-6963-2

PMCID: PMC6631988

PMID: 31307415 [Indexed for MEDLINE]

59: Giridhar P, Gupta P, Mallick S, Upadhyay AD, Rath GK. Impact of adjuvant therapy on survival in patients with myoepithelial carcinoma: A systematic review and individual patient data analysis of 691 patients. *Radiother Oncol.* 2019 Jul 2;140:125-130. doi: 10.1016/j.radonc.2019.06.017. [Epub ahead of print] PubMed PMID: 31276988.

INTRODUCTION: Myoepithelial carcinoma (MEC) is an extremely rare low grade salivary gland neoplasm [1-4]. A surgical resection is considered as corner stone of therapy. Role of adjuvant therapy is not clear.

METHODOLOGY: We performed systematic review and individual patient data analysis of 691 patients to look into the impact of adjuvant therapy and different prognostic variable for MEC.

RESULTS: Data of 691 individual patients were retrieved from 340 publications. Median age of presentation was 56 years (Range: 0-103 years) with a trend of increasing incidence for increase in age. Major salivary glands (36.4%) were the commonest sub-site followed by minor salivary glands, skin and soft tissue, and breast. Median PFS and OS of entire cohort was 48 months (95% CI: 30-65 months) and 167 months (95% CI: 82-251 months). In univariate analysis A R0 resection was associated with significantly better PFS and OS. Median PFS and OS were significantly worse for patients with tumour size >5 cm compared to smaller tumours and for patients with a mitotic index >10/10 high power field (hpf) compared to lower mitotic index. Adjuvant radiation was found to reduce loco-regional recurrence. Adjuvant radiation and chemotherapy both were associated with negative impact on survival in univariate analysis. This negative impact on survival was lost in multivariate analysis.

CONCLUSION: MEC appears to be a low grade malignancy with good survival outcome. A R0 resection should be the standard of care. Adjuvant radiation should be considered for patients with adverse risk features to improve loco-regional disease control.

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DOI: 10.1016/j.radonc.2019.06.017

PMID: 31276988

60: Goda R, Sharma R, Katiyar V, Singla R, Borkar S, Vora Z. Early Outcome Following Decompressive Craniectomy for Traumatic Brain Injury: A Prediction Model. *World Neurosurg.* 2019 Jul;127:656. doi: 10.1016/j.wneu.2019.02.253. PubMed PMID: 31266111.

61: Goel AD, Gosain M, Amarchand R, Sharma H, Rai S, Kapoor SK, Krishnan A. Effectiveness of a Quality Improvement Program Using Difference-in-Difference Analysis for Home Based Newborn Care - Results of a Community Intervention Trial. *Indian J Pediatr.* 2019 Jul 19. doi: 10.1007/s12098-019-03012-4. [Epub ahead of

print] PubMed PMID: 31325100.

OBJECTIVE: To present evaluation of a quality improvement program for Accredited Social Health Activists (ASHAs).

METHODS: This community intervention trial was conducted in Ballabgarh, India during 2012-2014 with two Primary Health Center (PHC) areas being the intervention areas and two PHC areas being non-intervention areas receiving standard care. Interventions included two-day training in technical and communication skills of ASHAs followed by supportive supervision in the field. Intervention was evaluated by comparing pre and post training scores, feedback from postnatal mothers and a difference-in-difference (DID) analysis on baseline and endline knowledge-practice survey of recently delivered mothers with 95% confidence intervals.

RESULTS: Only 11.1% ASHAs addressed specific barriers for adopting healthy behaviors. Sixty eight (91.8%) ASHAs attended the training after which knowledge improved by 33.3% ($p < 0.001$). ASHAs in intervention areas were rated by mothers ($n=69$) to have better communication skills (81.2% vs. 59.7%, $p=0.005$), make more postnatal visits (52.2% vs. 22.2%; $p < 0.001$), give advice on newborn care (64% vs. 50.5%; $p < 0.001$) as compared to standard care area ASHAs. Endline survey ($n=1360$) showed a significant improvement in frequency of antenatal visits (0.26;0.19-0.33), knowledge about free transport (0.12;0.05-0.18), better cord-care practices (0.15;0.07-0.22), kangaroo mother care (0.19;0.13-0.25), delayed first bath (0.13;0.06-0.20), restrictive handling (0.11;0.06-0.15) and hand-washing (0.19;0.13-0.25).

CONCLUSIONS: Quality improvement program can help improve ASHA's performance which in turn can address higher neonatal mortality in India.

DOI: 10.1007/s12098-019-03012-4

PMID: 31325100

62: Goel P, Jain S, Bajpai M, Khanna P, Jain V, Yadav DK. Does caudal analgesia increase the rates of urethrocutaneous fistula formation after hypospadias repair? Systematic review and meta-analysis. *Indian J Urol.* 2019 Jul-Sep;35(3):222-229. doi: 10.4103/iju.IJU_252_18. PubMed PMID: 31367075; PubMed Central PMCID: PMC6639986.

Introduction: Caudal block analgesia is administered to lower the requirements of systemic and inhaled anesthetic drugs during hypospadias surgery. However, recent reports, all clustered in a short time-span have generated controversial and mutually opposing results while evaluating caudal block as an independent risk factor for urethroplasty-related complications after hypospadias repair. There is no consensus statement on the role of caudal block analgesia in formation of urethrocutaneous fistula (UCF) after hypospadias surgery. We performed a systematic review and meta-analysis of the studies evaluating the relative rates of UCF formation after hypospadias surgery in patients who were administered caudal block analgesia versus in those who were not.

Methods: Electronic searches were performed using PubMed, PubMed Central, Google Scholar, Ovid, and the Cochrane library. Statistical analysis was performed using a fixed-effect model, odds ratios, risk ratios (RR), and heterogeneity (I²) were calculated. Funnel plot was used to assess for publication bias.

Results: Seven studies with 1706 patients were included. Caudal block analgesia is associated with a significantly higher risk of UCF formation (RR: 1.81; 95% confidence interval [CI]: 1.30-2.53), ($P = 0.0004$) and other urethroplasty-related complications (RR 2.01; 95% CI: 1.48-2.74), ($P < 0.00001$) after hypospadias surgery. Funnel plots indicate some publication bias.

Conclusions: In patients undergoing hypospadias repair, administration of caudal analgesia is associated with a higher risk of UCF formation and other urethroplasty-related complications.

DOI: 10.4103/iju.IJU_252_18
PMCID: PMC6639986
PMID: 31367075

63: Goel P, Bajpai M, Damle NA, Naranje P, Tripathi M. Bowel Excretion of Technetium-(99m)L, L-Ethylene Dicysteine Masquerading as a Dilated Ureter in a Case of Pelvi-Ureteric Junction Obstruction: Case Report and Review. *J Indian Assoc Pediatr Surg.* 2019 Jul-Sep;24(3):222-224. doi: 10.4103/jiaps.JIAPS_124_18. PubMed PMID: 31258277; PubMed Central PMCID: PMC6568147.

The treatment plan and the decision for surgery in a significant proportion of patients with pelvi-ureteric junction (PUJ) obstruction type of hydronephrosis are dependent on the findings of renal scintigraphy. We report a case of a 3.5-year-old girl with right-sided PUJ obstruction, wherein the tracer excretion into the cecum and ascending colon complicated the clinical picture thereby misleading the final diagnosis or treatment plan and blurring the distinction between hydronephrosis and hydroureteronephrosis. Additional investigations may be required in such cases to reach a conclusion. The authors considered reporting this case in view of the deep-rooted clinical implications toward making a correct diagnosis. Besides, the possible mechanisms to explain the presence of the tracer inside the bowel have been discussed.

DOI: 10.4103/jiaps.JIAPS_124_18
PMCID: PMC6568147
PMID: 31258277

64: Goel S, Kumar A, Ravani RD, Chandra P, Chandra M, Kumar V. Comparison of ranibizumab alone versus ranibizumab with targeted retinal laser for branch retinal vein occlusion with macular edema. *Indian J Ophthalmol.* 2019 Jul;67(7):1105-1108. doi: 10.4103/ijo.IJO_1364_18. PubMed PMID: 31238421; PubMed Central PMCID: PMC6611316.

Purpose: To determine the effect of ultra-widefield fluorescein angiography (UWFFA)-guided targeted retinal photocoagulation (TRP) in branch retinal vein occlusion (BRVO) with macular edema after intravitreal Ranibizumab (RBZ).
Methods: 33 eyes of 32 treatment naïve patients diagnosed as BRVO with macular edema were prospectively randomized to 0.5 mg Ranibizumab only (RBZ group) (n = 17) or Ranibizumab with UWFFA-guided laser (RBZ + TRP group) (n = 16). Both groups received three injections at monthly intervals and PRN henceforth. RBZ + TRP group additionally underwent UWFFA-guided TRP of peripheral capillary nonperfusion areas 1 week post injection. Outcome measures included improvement in visual acuity, central subfoveal thickness (CST), and the number of injections required with a minimum follow-up of 9 months.

Results: Both groups showed significant improvement in mean BCVA (25.7 ± 8.19 letters, $P < 0.001$ vs. 23.38 ± 7.56 letters, $P < 0.001$; in RBZ and RBZ + TRP group, respectively) and reduction in mean central subfoveal thickness ($379.12 \pm 242.7 \mu\text{m}$, $P < 0.001$ vs. $253.75 \pm 137.9 \mu\text{m}$, $P < 0.001$ in RBZ and RBZ + TRP group, respectively) at 9 months. The number of injections in the RBZ group (5.76 ± 1.3) was significantly greater than RBZ + TRP (4.06 ± 0.99) ($P < 0.001$). Both groups had significant improvement in contrast sensitivity and mean deviation on visual fields; however, the difference between the groups was not significant ($P = 0.62$ and $P = 0.79$, respectively).

Conclusion: UWFFA-guided TRP reduced the number of injections of Ranibizumab in patients having BRVO with macular edema, while maintaining similar benefits in the improvement of BCVA, central subfoveal thickness without deleterious effect on the visual field, and contrast sensitivity.

DOI: 10.4103/ijo.IJO_1364_18

PMCID: PMC6611316

PMID: 31238421 [Indexed for MEDLINE]

65: Goswami C, Poonia S, Kumar L, Sengupta D. Staging System to Predict the Risk of Relapse in Multiple Myeloma Patients Undergoing Autologous Stem Cell Transplantation. *Front Oncol.* 2019 Jul 12;9:633. doi: 10.3389/fonc.2019.00633. eCollection 2019. PubMed PMID: 31355145; PubMed Central PMCID: PMC6640159.

Over the last decade autologous stem cell transplantation (ASCT) has emerged as the standard of care in the management of Multiple Myeloma (MM). However, the cases of early relapse (within 36 months) after the stem cell rescue remains a significant challenge. For a lot of practical purposes, it is crucial to identify whether a patient undergoing ASCT falls into the high-risk group (likely to relapse within 36 months) or a low risk one. Our analysis showed that existing MM staging systems (International Staging System or ISS and Durie Salmon Staging or DSS) are not sufficient to discriminate between the risk groups significantly. To address this, we gathered a total of 39 clinical and laboratory parameters of 347 patients from the Department of Medical Oncology of All India Institute of Medical Sciences (AIIMS). We employed a stacked machine learning model consisting spectral clustering and Fast and Frugal Tree (FFT) technique to come up with a 3-factor multivariate 2-stage staging scheme, which turns out to be extremely decisive about the outcome of the stem cell rescue. Our model comes up with a three-factor (1. if patients has relapsed following remission, 2. response to induction, 3. pre-transplant Glomerular Filtration Rate or GFR) staging scheme. The resulting model stratifies patients into high-risk and low-risk groups with markedly distinct progression-free (median survival-24 months vs. 91 months) and overall survival (median survival-51 months vs. 135 months) patterns.

DOI: 10.3389/fonc.2019.00633

PMCID: PMC6640159

PMID: 31355145

66: Govindaswamy A, Bajpai V, Khurana S, Batra P, Mathur P, Malhotra R. Prevalence and Characterization of Carbapenemase-producing *Escherichia coli* from a Tertiary Care Hospital in India. *J Glob Infect Dis.* 2019 Jul-Sep;11(3):123-124. doi: 10.4103/jgid.jgid_68_18. PubMed PMID: 31543655; PubMed Central PMCID: PMC6733190.

The purpose of this study was to estimate the prevalence and to characterize the carbapenemase-producing *Escherichia coli* by various phenotypic antimicrobial susceptibility testing methods, and its performance was compared to the gold standard genotypic method. The prevalence of carbapenemase-resistant *E. coli* was found to be 65%. The phenotypic methods evaluated are cost-effective and can be used in resource-limited laboratories to rule out carbapenem resistance.

DOI: 10.4103/jgid.jgid_68_18

PMCID: PMC6733190

PMID: 31543655

67: Govindaswamy A, Bajpai V, Singh P, Lohiya A, Ayyanar M, Gupta DK, Bindra A, Singh GP, Mathur P. Prevalence and Antibiotic Resistance Profile of Cerebrospinal Fluid Pathogens from Neurosurgical Patients from Level 1 Trauma Center in India. *Asian J Neurosurg.* 2019 Jul-Sep;14(3):834-838. doi: 10.4103/ajns.AJNS_268_18. PubMed PMID: 31497110; PubMed Central PMCID: PMC6703012.

Introduction: The purpose of this study was to investigate the prevalence of Postoperative central nervous system infections (PCNSIs) and antibiotic resistance profiles of causative organisms in trauma patients following

neuroinvasive procedures.

Materials and Methods: This was a retrospective study conducted over a period of 4 years (2013–2017). All in-patients admitted under a neurotrauma unit meeting the inclusion criteria of PCNSIs were included in the study. Surgical site infections (SSIs) were defined according to the Centers for Disease Control and Prevention 2018 (CDC) criteria. We retrospectively examined the demographic characteristics, type of neurosurgery performed, laboratory data, causative organisms, and antimicrobial susceptibility testing results of patients who had positive cerebrospinal fluid cultures following craniotomy between January 2013 and December 2017.

Results: Of total 2500 patients operated during the study, 961 patients were screened for PCNSIs. The estimated prevalence (95% confidence interval) of PCNSIs which is a type of organ/space SSI was 7.2% (6.3–8.3). Males were predominantly affected (85.0%). The mean age (standard deviation) of patients was 31.9 (16.5) years. Of all the cultures sent for microbiological examination, 18.6% were positive. The proportion of Gram-negative bacteria causing PCNSIs was 91.6%. Multidrug-resistant (MDR) *Acinetobacter baumannii* (41%) was the most common organism isolated. Among Gram-positive bacteria, the most common organism was *Staphylococcus aureus* (5.5%). All the Gram-positive isolates were susceptible to vancomycin, teicoplanin, and linezolid.

Conclusion: There is a high burden of PCNSI caused by MDR *Acinetobacter baumannii* can pose a major clinical challenge with only few antimicrobials left in the pipeline.

DOI: 10.4103/ajns.AJNS_268_18

PMCID: PMC6703012

PMID: 31497110

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Steroid 11-beta-hydroxylase deficiency is a relatively rare form of congenital adrenal hyperplasia (CAH). We describe the case of a 46,XX child, reared as a male, who first presented to us at the age of three years with features of peripheral precocity and hypokalemic hypertension. Based on the clinical and biochemical profile, a diagnosis of 11-beta-hydroxylase deficiency CAH was established, and physiological glucocorticoid replacement was begun. Both hypertension and hypokalemia improved with glucocorticoid supplementation, and at eight years of age, antihypertensives were successfully withdrawn. Regression of left ventricular hypertrophy was also noted at this time. In keeping with the male gender identity, the child underwent hysterectomy, oophorectomy and breast reduction surgery at 13 years of age. We conclude that both hypertension and end-organ damage due to 11-beta-hydroxylase CAH may get reversed following optimal glucocorticoid treatment. Detailed genital examination at birth may help in early diagnosis of this rare disorder, thereby preventing the deleterious consequences of longstanding mineralocorticoid excess.

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DOI: 10.7759/cureus.5248

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PMID: 31572633

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BACKGROUND: The Indian population is facing highest dengue burden worldwide supporting an urgent need for vaccines. For vaccine introduction, evaluation and interpretation it is important to gain a critical understanding of immune memory induced by natural exposure. However, immune memory to dengue remains poorly characterized in this region.

METHODS: We enumerated levels of dengue specific memory B cells (MBC), neutralizing (NT) and binding antibodies in healthy adults (n=70) from New Delhi. **RESULTS:** NT-antibodies, binding antibodies and MBC were detectable in 86%, 86.56% and 81.63% of the subjects respectively. Among the neutralizing positive subjects, 58%, 27%, 5% and 10% neutralized all four, any three, any two and any one dengue serotypes respectively. The presence of the neutralizing antibodies was associated with the presence of the MBC and binding antibodies. However, a massive interindividual variation was observed in the levels of the neutralizing antibodies (range, <1:50-1:30,264), binding antibodies (range, 1:3,000-1:134,000,) as well as the MBC (range=0.006%-5.05%).

CONCLUSION: These results indicate that a vast majority of the adults are immune to multiple dengue serotypes and show massive interindividual variation in neutralizing/binding antibodies and MBCs - emphasizing the importance of monitoring multiple parameters of immune memory in order to properly plan, evaluate and interpret dengue vaccines.

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DOI: 10.1016/j.ijid.2019.01.018
PMID: 30658170

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Amyloidosis secondary to juvenile idiopathic arthritis is a known complication of poorly controlled systemic juvenile idiopathic arthritis (SJIA), occurring in 1-2% of the patients. The IL-6 inhibitor tocilizumab is effective in controlling systemic signs and symptoms of SJIA and may be of therapeutic benefit in secondary amyloidosis. Herein, we report the clinical timeline of a 10-year boy with SJIA and secondary amyloidosis, who showed a sustained improvement of systemic symptoms and a reduction in proteinuria with tocilizumab. Compared to the data on adult patients affected with the secondary amyloidosis, there are very few reports on therapeutic options for the children affected with SJIA and secondary amyloidosis in the paediatric population. While doing a systematic

literature search for writing this review, we could only retrieve nine case reports and one case series of the children affected with SJIA and secondary amyloidosis, including five cases which were treated with tocilizumab. We also looked into the clinical and biochemical response to various agents that have been used in the previous cases, including tocilizumab. The available literature and the present case report suggest that tocilizumab may be considered as a safe and effective option to treat SJIA-related secondary amyloidosis.

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PMID: 31273457

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Background and objective: Dopamine plays an important role in the disease pathology of Parkinson's disease and schizophrenia. These two neuropsychiatric disorders represent disease end points of the dopaminergic spectrum where Parkinson's disease represents dopamine deficit and schizophrenia represents dopamine hyperactivity in the mid-brain. Therefore, current treatment strategies aim to restore normal dopamine levels. However, during treatment patients develop adverse effects due to overshooting of physiological levels of dopamine leading to psychosis in Parkinson's disease, and extrapyramidal symptoms in schizophrenia. Absence of any laboratory tests hampers modulation of pharmacotherapy. Apolipoprotein E and α -synuclein have an important role in the neuropathology of these two diseases. The objective of this study was to evaluate cerebrospinal fluid (CSF) concentrations of apolipoprotein E and α -synuclein in patients with these two diseases so that they may serve as biomarkers to monitor therapy in Parkinson's disease and schizophrenia.

Methods: Drug-naïve Parkinson's disease patients and Parkinson's disease patients treated with dopaminergic therapy, neurological controls, schizophrenic patients treated with antidopaminergic therapy, and drug-naïve schizophrenic patients were recruited for the study and CSF was collected. Enzyme-linked immunosorbent assays were carried out to estimate the concentrations of apolipoprotein E and α -synuclein. Pathway analysis was done to establish a possible role of these two proteins in various pathways in these two dopamine dictated diseases.

Results: Apolipoprotein E and α -synuclein CSF concentrations have an inverse correlation along the entire dopaminergic clinical spectrum. Pathway analysis convincingly establishes a plausible hypothesis for their co-regulation in the pathogenesis of Parkinson's disease and schizophrenia. Each protein by itself or as a combination has encouraging sensitivity and specificity values of more than 55%.

Conclusion: The dynamic variation of these two proteins along the spectrum is ideal for them to be pursued as pharmacotherapeutic biomarkers in CSF to monitor pharmacological efficacy in Parkinson's disease and schizophrenia.

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Background: Corticosteroids are the most common agents used in the treatment of alopecia areata (AA), however, their long-term use is associated with severe side effects. Therefore, other immunosuppressive agents have been tried and azathioprine appears to be an effective and promising alternative.

Objective: The main objective of this study was to compare the efficacy of 300 mg once weekly azathioprine pulse (WAP) and 5 mg betamethasone on 2 consecutive days every week in the management of AA.

Materials and Methods: In this open-label, randomized comparative study, 50 patients of AA with >10% scalp area involvement were treated with either 300 mg WAP or 5 mg betamethasone on 2 consecutive days every week for 4 months or till complete scalp hair regrowth and followed up for next 5 months. Primary efficacy parameters were average percentage scalp hair regrowth and change in average Severity of Alopecia Tool (SALT) score at 4 months.

Results: Twenty patients in WAP group and 21 patients in betamethasone group completed the study. The median percent scalp hair regrowth and the median change in SALT score was 44.52 and 9.5 in WAP group compared to 71.43 and 14 in betamethasone group at 4-month, respectively, which were statistically similar in two groups, however, side effects were significantly higher in betamethasone group. On further follow-up at 9 months, 10 (50%) patients in WAP group and 13 (62%) patients in betamethasone group achieved complete hair regrowth. Lack of control group was a limitation of our study.

Conclusion: WAP and betamethasone therapy, both appear to be effective in the treatment of AA. However, betamethasone caused several side effects; therefore, WAP can be used as a better alternative to corticosteroids in AA.

DOI: 10.4103/ijd.IJD_481_16

PMCID: PMC6714202

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Sleep research has often focussed heavily on polysomnography while ignoring subjective sleep complaints of individuals, especially the young ones. Discordance has been seen between objective and subjective parameters of sleep among children and adolescents. There has been a trend towards worsening of sleep hygiene among adolescents, which may predispose to psychiatric disorders like depression. So, we compared the subjective sleep quality and sleep hygiene among depressed and normal adolescents. A sample of 31 depressed adolescents and 32 healthy controls were compared on sleep parameters using Adolescent Sleep Wake Scale (ASWS), Adolescent Sleep Hygiene Scale (ASHS) and School Sleep Habits Survey. Depressed adolescents were found to have significantly worse sleep quality [ASWS score 3.72 ± 0.952 vs 4.79 ± 0.552 , $p < 0.001$], longer sleep onset latency [68.23 ± 62.98 vs 19.53 ± 19.48 minutes, $p < 0.001$], and shorter sleep duration [414.19 ± 110.78 vs 498.28 ± 56.86 minutes, $p < 0.001$]. Sleep quality significantly correlated with depression severity (measured on Children's Depression Rating Scale- revised), i.e., higher the severity of depression, poorer was the sleep quality ($r = -0.605$, $p < 0.01$). But sleep hygiene was statistically similar between the two groups [ASHS score 3.21 ± 0.60 vs 3.36 ± 0.51 , $p = 0.293$], and was inadequate (< 3.8) among all adolescents irrespective of depression. Hence, despite the lack of evidence from objective

sleep measures, there seem to be subjective sleep impairments among adolescents having depression. Future research needs to address the underlying etiological factors and causal directions for depression and sleep impairments among adolescents. Sleep hygiene education must be a part of broader primary prevention strategies for psychiatric disorders.

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DOI: 10.1016/j.ajp.2019.07.034

PMID: 31376799

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OBJECTIVE: To evaluate effect of one year exercise intervention program on bone mineral accrual in children and adolescent with cystic fibrosis (CF).

METHODS: Fifty-two CF children (mean age 149.79 mo) were randomized into experimental (15 boys and 10 girls) and control groups (15 boys and 12 girls). Experimental group performed prescribed exercises three times/week, while control group continued with routine physical activities for one year. Following were assessed at baseline and at one year: Bone mineral density (BMD) of whole body and lumbar spine, pulmonary function, exercise capacity, quality of life and habitual activity.

RESULTS: Change in whole body and lumbar spine BMD over 12 mo in experimental group was lower by 0.006 g/cm² (95% CI -0.02 to 0.02) and higher by 0.001 g/cm² (95% CI -0.04 to 0.03) than controls, respectively. However, difference between groups was non-significant for both parameters. Experimental group had a significant improvement in their exercise capacity (p=0.006), quality of life, and serum vitamin D (p=0.007) levels. Differences between groups for changes in pulmonary function and habitual activity were non-significant.

CONCLUSIONS: Exercise regime was not associated with significant improvement in BMD of CF patients, but it had a positive impact on both physical and psychological health of these patients.

DOI: 10.1007/s12098-019-03019-x

PMID: 31281938

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Background: Patients with reactive arthritis frequently present to dermatologists. However, there is paucity of information regarding its clinical aspects and management in dermatological literature.

Objective: To review the clinical features and management of patients with chronic reactive arthritis admitted to the dermatology department of a teaching hospital.

Methods: This was a retrospective analysis of patients with reactive arthritis admitted to the Department of Dermatology and Venereology, All India Institute of

Medical Sciences, New Delhi, India from January 2016 to February 2018.

Results: There were 12 males (disease duration 9-180 months). Biologics were used in 9 (75%) patients on 16 different occasions, the most frequent being infliximab (n = 10 times), followed by adalimumab (n = 3), etanercept, secukinumab and itolizumab (n = 1 each), in combination with other systemic agents. Response rate with treatment regimens including biologics (69% responders, 31% partial responders) was statistically significantly better than those without biologics (27% responders, 46% partial responders, 27% nonresponders; P = 0.036), using a composite measure assessing improvement in skin and joint symptoms. Biologics were discontinued on 50% of the occasions, after a median of 3.5 months (range 1.5-7.5 months) because of satisfactory response (n = 4), therapeutic fatigue (n = 3) or adverse event (n = 1). After biologic discontinuation, the response was sustained for a median of 5 months (range 3-6 months) before disease exacerbation. The number of treatment switches increased with the follow-up duration (median three switches per patient, range 1-8). The median follow-up duration was 10.5 months (range 4-76 months).

Conclusion: Biologics produce rapid improvement in skin and joint symptoms in chronic reactive arthritis, but the response is not long-lasting. Patients with chronic reactive arthritis have a waxing and waning course despite regular treatment.

Limitations: The limitations are retrospective design, small sample size and lack of a validated outcome measure.

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Large avascular blebs need to be repaired especially if they are associated with leaks or have had episodes of bleb-related infections. We describe a new technique of using an amniotic membrane graft, that is inserted into the bleb through a small incision, helping to reduce the size of the avascularity, providing support to the bleb, and preventing extraneous infections.

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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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DOI: 10.1016/j.wneu.2019.07.009
PMID: 31295622

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Developed in collaboration with WHO Department of Mental Health and Substance Abuse, this study (conducted in India, the UK, and the USA) integrated feedback from mental health service users into the development of the chapter on mental, behavioural, and neurodevelopmental disorders for ICD-11. The ICD-11 will be used for health reporting from January, 2022. As a reporting standard and diagnostic classification system, ICD-11 will be highly influential by informing policy, clinical practice, and research that affect mental health service users. We report here the first study to systematically seek and collate service user perspectives on a major classification and diagnostic guideline. Focus groups were used to collect feedback on five diagnoses: depressive episode, generalised anxiety disorder, schizophrenia, bipolar type 1 disorder, and personality disorder. Participants were given the official draft diagnostic guidelines and a parallel lay translation. Data were then thematically analysed, forming the basis of co-produced recommendations for WHO, which included features that could be added or revised to better reflect lived experience and changes to language that was confusing or objectionable to service users. The findings indicated that an accessible lay language version of the ICD-11 could be beneficial for service users and their supporters.

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DOI: 10.1016/S2215-0366(19)30093-8
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Tong A. Identifying Important Outcomes for Young People With CKD and Their Caregivers: A Nominal Group Technique Study. *Am J Kidney Dis.* 2019 Jul;74(1):82-94. doi: 10.1053/j.ajkd.2018.12.040. Epub 2019 Mar 15. PubMed PMID: 30885704.

RATIONALE & OBJECTIVE: Chronic kidney disease (CKD) has wide-ranging and long-term consequences for young people and their families. The omission of outcomes that are important to young people with CKD and their caregivers limits knowledge to guide shared decision making. We aimed to identify the outcomes that are important to young people with CKD and their caregivers.

STUDY DESIGN: We used the nominal group technique whereby participants identified and ranked outcomes and explained their priorities.

SETTINGS & PARTICIPANTS: Young people with CKD (stages 1-5, dialysis, or transplantation) and their caregivers were purposively sampled from 6 centers across Australia, the United States, and Canada.

ANALYTICAL APPROACH: Importance scores were calculated (scale of 0-1), and qualitative data were analyzed thematically.

RESULTS: 34 patients (aged 8-21 years) and 62 caregivers participated in 16 groups and identified 48 outcomes. The 5 highest ranked outcomes for patients were survival (importance score, 0.25), physical activity (0.24), fatigue (0.20), lifestyle restrictions (0.20), and growth (0.20); and for caregivers, kidney function (0.53), survival (0.28), infection (0.22), anemia (0.20), and growth (0.17). 12 themes were identified reflecting their immediate and current priorities (wanting to feel normal, strengthening resilience, minimizing intrusion into daily life, imminent threats to life, devastating family burdens, and seeking control over health) and considerations regarding future impacts (protecting health/development, remaining hopeful, concern for limited opportunities, prognostic uncertainty, dreading painful and invasive procedures, and managing expectations).

LIMITATIONS: Only English-speaking participants were recruited.

CONCLUSIONS: Kidney function, infection, survival, and growth were the highest priorities for patients with CKD and their caregivers. Young people with CKD also prioritized highly the outcomes that directly affected their lifestyle and sense of normality, while caregiver's highest priorities concerned the long-term health of their child, current health problems, and the financial and family burdens of caring for a child with CKD.

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DOI: 10.1053/j.ajkd.2018.12.040
PMID: 30885704

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Children with steroid-resistant nephrotic syndrome (SRNS) are exposed to multiple cardiovascular risk factors predisposing them to accelerated atherosclerosis. This risk is negligible in steroid-sensitive nephrotic syndrome, but a substantial proportion of children with SRNS progress to chronic kidney disease, exacerbating the already existing cardiovascular risk. While dyslipidemia is an established modifiable risk factor for cardiovascular disease in adults with NS, it is uncertain to what extent analogous risks exist for children. There is increasing evidence of accelerated atherosclerosis in children with persistently high lipid levels, especially in refractory NS. Abnormalities of lipid metabolism in NS include hypertriglyceridemia and hypercholesterolemia due to elevated apolipoprotein B-containing lipoproteins, decreased lipoprotein lipase and

hepatic lipase activity, increased hepatic PCSK9 levels, and reduced hepatic uptake of high-density lipoprotein. Existing guidelines for the management of dyslipidemia in children may be adapted to target lower lipid levels in children with NS, but they will most likely require both lifestyle modifications and pharmacological therapy. While there is a lack of data from randomized controlled trials in children with NS demonstrating the benefit of lipid-lowering drugs, therapies including statins, bile acid sequestrants, fibrates, ezetimibe, and LDL apheresis have all been suggested and/or utilized. However, concerns with the use of lipid-lowering drugs in children include unclear side effect profiles and unknown long-term impacts on neurological development and puberty. The recent introduction of anti-PCSK9 monoclonal antibodies and other therapies targeted to the molecular mechanisms of lipid transport disrupted in NS holds promise for the future treatment of dyslipidemia in NS.

DOI: 10.1007/s00467-019-04301-y
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Background: An efficient inventory control system would help optimize the use of resources and eventually help improve patient care.

Objectives: The study aimed to find out the surgical consumables using always, better, and control (ABC) and vital, essential, and desirable (VED) technique as well as calculating the lead time of specific category A and vital surgical consumables.

Methods: This was a descriptive, record-based study conducted from January to March 2016 in the surgical stores of the All India Institute of Medical Sciences, New Delhi. The study comprised all the surgical consumables which were procured during the financial year 2014-2015. Stores ledger containing details of the consumption of the items, supply orders, and procurement files of the items were studied for performing ABC analysis and calculating the lead time. A list of surgical consumables was distributed to the doctors, nursing staff, technical staff, and hospital stores personnel to categorize them into VED categories after explaining them the basis for the classification.

Results: ABC analysis revealed that 35 items (14%), 52 items (21%), and 171 items (69%) were categorized into A (70% annual consumption value [ACV]), B (20% ACV), and C (10% ACV) category, respectively. In the current study, vital items comprised the majority of the items, i.e., 73% of the total items and essential (E) category of items comprised 26% of all the items. The average internal, external, and total lead time was 17 days (range 3-30 days), 25 days (range 5-38) and 44 days (range 18-98 days), respectively.

Conclusions: Hospitals stores need to implement inventory management techniques to reduce the number of stock-outs and internal lead time.

DOI: 10.4103/ijph.IJPH_282_18
PMID: 31552847

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Aim: The objective is to evaluate the effect of intravenous (i.v.) administration of bisphosphonate (zoledronic acid) therapy on the jaw bone density and incidence of any other bony patholog.

Settings and Design: Observational - prospective study.

Materials and Methods: A total of 57 patients having a history of bony metastasis (excluding the jaw bone) were enrolled following the inclusion/exclusion criteria. Each patient received six doses of 4 mg i.v. bisphosphonate once a month. Multidetector computed tomography (MDCT) of jawbones for each patient was performed before the start of therapy (baseline) and subsequently at 6 and 12 months. Bone density was assessed at 24 predetermined sites (8 sites in maxilla and 16 sites in mandible) and any pathological change in either of the jaw bones was noted.

Statistical Analysis Used: Shapiro-Wilk test, Pearson's Chi-square test and repeated measures analysis of variance.

Results: The result showed no statistically significant increase in mean bone density over a period of 1 year in maxilla and mandible. However, a significant increase in bone density was observed from 6 months to 1 year in mandibular anterior cancellous bone. The detailed observation of each MDCT scan showed no pathological change in either of the jaw bones during the study period.

Conclusion: The administration (i.v.) of six doses of 4 mg bisphosphonate did not lead to a significant change in bone density over a period of 1 year.

DOI: 10.4103/jips.jips_368_18

PMCID: PMC6685335 [Available on 2020-07-01]

PMID: 31462858

93: Jain V, Kumar A, Ahmad N, Jana M, Kalaiivani M, Kumar B, Shastri S, Jain O, Kabra M. Genetic polymorphisms associated with obesity and non-alcoholic fatty liver disease in Asian Indian adolescents. *J Pediatr Endocrinol Metab.* 2019 Jul 26;32(7):749-758. doi: 10.1515/jpem-2018-0543. PubMed PMID: 31216264.

Background The objective of this study was to investigate the association of polymorphisms in four genes, tumor necrosis factor- α (TNFA), patatin-like phospholipase domain containing 3 (PNPLA3), adiponectin (ADIPOQ) and apolipoprotein C3 (APOC3), with obesity and non-alcoholic fatty liver disease (NAFLD) in Asian Indian adolescents. **Methods** In this case-control study, 218 Asian Indian adolescents with overweight/obesity and 86 lean healthy adults without fatty liver were enrolled. Hepatic steatosis was assessed and graded by ultrasonography (USG). Serum insulin, lipids, alanine aminotransferase (ALT), aspartate aminotransferase (AST), TNF- α , adiponectin and apolipoprotein C3 were measured and genotyping was done. Frequencies of variant and wild genotypes in all adolescents and in the subgroups without steatosis, with grade 1 steatosis and with grade 2 or 3 steatosis were compared to those in the controls. The frequencies were also compared in the overweight adolescents with grade 2 or 3 steatosis and without steatosis. **Results** Variant genotypes of polymorphisms -863 C>A and -1031 T>C of the TNFA gene, 455 T>C of the APOC3 gene and the wild type of +276 G>T of the ADIPOQ gene were associated with obesity with odds ratios (OR, 95% confidence interval [CI]) of 2.5 (1.5-4.4), 2.5 (1.5-4.2), 2.0 (1.1-3.6) and 2.5 (1.4-5.0), respectively. Polymorphisms 455 T>C of APOC3 and rs738409 C>G of PNPLA3 were associated with NAFLD. Fasting insulin and triglycerides (TG) were higher in the adolescents with homozygous variant polymorphisms -1031 T>C of TNFA and 455 T>C of APOC3 genes, respectively.

Conclusions Several polymorphisms were noted to have a significant association with obesity and NAFLD in Asian Indian adolescents.

DOI: 10.1515/jpem-2018-0543
PMID: 31216264

94: John R, Khurana A, Raj NG, Aggarwal P, Kanojia R, Chayapathi V. The 'forgotten rubber band' syndrome - A systematic review of a uniquely 'desi' complication with a case illustration. *J Clin Orthop Trauma*. 2019 Jul-Aug;10(4):822-827. doi: 10.1016/j.jcot.2018.04.014. Epub 2018 Apr 23. Review. PubMed PMID: 31316265; PubMed Central PMCID: PMC6611951.

Background: Once an exceedingly rare entity, multiple cases of forgotten rubber band syndrome or the so-called 'dhaaga' syndrome have now been reported in the literature.

Objectives: To conduct a thorough and systematic review of the literature for all articles reporting a chronic type of rubber band syndrome and to present an additional similar case as an illustration.

Study design: Systematic review and case report.

Methodology: PubMed, EMBASE and Google Scholar databases were searched for relevant articles using different combinations of the keywords till 20th June 2017. All articles reporting cases of chronic rubber band syndrome with a discharging sinus were included. Pearlring of the bibliographies of selected articles was conducted to locate articles missed by the primary database search. Data from these reports were collected on pre-defined forms and the results were analysed.

Results: A total of 15 cases have been reported in the literature so far and all cases are from India. Thirteen of these have been reported in the wrist region. Median duration of presentation is 7.6 months after the application of elastic band. Characteristic clinical signs are a circumferential linear scar with discharging sinus (multiple sinuses noted in around one-fourth of the cases). 'Soft tissue constriction sign' on plain radiograph is pathognomonic for this condition. Rate of missed/misdiagnosis is very high (46.7%) and it has been confused with tubercular osteomyelitis which is endemic in India. All cases responded to surgical debridement of circumferential fibrous tissue and foreign body removal with good functional outcomes.

Conclusions: A high index of suspicion must be maintained for this 'syndrome' in chronic osteomyelitis cases presenting with a linear, circumferential scar and discharging sinus in India. Soft tissue constriction sign on plain radiographs are pathognomonic.

DOI: 10.1016/j.jcot.2018.04.014
PMCID: PMC6611951 [Available on 2020-07-01]
PMID: 31316265

95: Jyani G, Prinja S, Ambekar A, Bahuguna P, Kumar R. Health impact and economic burden of alcohol consumption in India. *Int J Drug Policy*. 2019 Jul;69:34-42. doi: 10.1016/j.drugpo.2019.04.005. Epub 2019 May 2. PubMed PMID: 31055044.

BACKGROUND: The health and economic consequences of alcohol consumption have been assessed mainly in developed countries. This study aims to estimate health impact and economic burden attributable to alcohol use in India.

METHODS: A combination of decision tree and mathematical markov model was parameterized to assess the health effects and economic cost attributable to alcohol consumption. Health effect of alcohol was modelled for a time period of 2011 to 2050 on three sets of conditions - liver disease, cancers and road traffic accidents. Estimates of illness, death, life years lost and quality adjusted life years (QALYs) gained were estimated as a result of alcohol

consumption. Both direct and indirect costs were estimated to determine economic burden. Future costs and consequences were discounted at 3% for time preferences of cost and utility. Uncertainties in parameters were assessed using probabilistic sensitivity analysis.

RESULTS: Between 2011 and 2050, alcohol attributable deaths would lead to a loss of 258 million life years. In contrast, 552 million QALYs would be gained by eliminating alcohol consumption. Treatment of these conditions will impose an economic burden of INR 3127 billion (US\$ 48.11 billion) on the health system. Societal burden of alcohol, inclusive of health system cost, out of pocket expenditure and productivity losses will be INR 121,364 billion (US\$ 1867 billion). Even after adjusting for tax receipts from sale of alcohol, alcohol poses a net economic loss of INR 97,895 billion (US\$ 1506 billion). This amounts to an average loss of 1.45% of the gross domestic product (GDP) per year to the Indian economy.

CONCLUSION: Alcohol causes significant negative health impact and economic burden on Indian society and evidence informed policy interventions are needed to control alcohol attributable harm.

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DOI: 10.1016/j.drugpo.2019.04.005

PMID: 31055044

96: Kailashiya V, Sharma HB, Kailashiya J. Role of CTLA4 A49G polymorphism in systemic lupus erythematosus and its geographical distribution. *J Clin Pathol*. 2019 Oct;72(10):659-662. doi: 10.1136/jclinpath-2019-206013. Epub 2019 Jul 24. Review. PubMed PMID: 31340988.

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 energy 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]

97: Kakkar A, Purkait S, Agarwal S, Mallick S, Gogia A, Karak AK, Sharma MC, Julka PK. Primary thyroid lymphoma: A series from a tertiary care center in Northern India. *J Cancer Res Ther*. 2019 Jul-Sep;15(3):669-675. doi: 10.4103/jcrt.JCRT_135_17. PubMed PMID: 31169238.

Objective: Primary thyroid lymphoma (PTL) is a rare entity, necessitating accurate and early diagnosis, as its management is very different from that of other neoplasms intrinsic to the thyroid.

Materials and Methods: Cases diagnosed between January 2009 and March 2015 were

retrieved, and clinical details were noted. Hematoxylin- and eosin-stained slides were reviewed. Immunohistochemistry (IHC) was performed for immunophenotyping, and cases were classified according to the World Health Organization 2017 classification of hematolymphoid neoplasms.

Results: Eleven patients with PTL were identified, with a mean age of 64.6 years (range: 40-76 years), including three males and eight females. Duration of symptoms ranged from 2 to 36 months (mean: 9.3 months). Diffuse large B-cell lymphoma (DLBCL) was most frequent, followed by extranodal marginal zone lymphoma. Most DLBCLs were nongerminal center type. BCL2 was positive in all DLBCLs. Strong p53 immunopositivity was not seen in any of the cases analyzed. Conclusion: Histopathological evaluation supplemented by IHC is the gold standard for the diagnosis of PTL. Combined chemoradiotherapy appears to be the best treatment modality, irrespective of histological type. MIB-1 and MUM1 IHC may have a role in identifying DLBCL, particularly in small biopsies. Role of p53 and BCL2 needs further evaluation.

DOI: 10.4103/jcrt.JCRT_135_17
PMID: 31169238

98: Kakkar A, Bhardwaj N, Sakthivel P, Singh CA, Jain D, Mathur SR, Iyer VK. Fine needle aspiration cytology of cribriform adenocarcinoma of minor salivary gland, a recently defined entity. *Cytopathology*. 2019 Jul 4. doi: 10.1111/cyt.12750. [Epub ahead of print] PubMed PMID: 31271678.

99: Kakkar A, Jangra K, Kumar N, Sharma MC, Mathur SR, Deo SS. Epithelial-myoepithelial carcinoma of the breast: A rare type of malignant adenomyoepithelioma. *Breast J*. 2019 Jul 16. doi: 10.1111/tbj.13463. [Epub ahead of print] PubMed PMID: 31310415.

100: Kant K, Tomar AK, Sharma P, Kundu B, Singh S, Yadav S. Human Epididymis Protein 4 Quantification and Interaction Network Analysis in Seminal Plasma. *Protein Pept Lett*. 2019 Jul 4;26(6):458-465. doi: 10.2174/0929866526666190327124919. PubMed PMID: 30919767.

BACKGROUND: A well-known tissue marker of ovarian cancer, Human Epididymis protein 4 (HE4) is the member of whey acidic four-disulfide core proteins family. Purified from human seminal plasma and characterized as a cross-class protease inhibitor, HE4 was proposed to shield spermatozoa against proteolytic factors. However, its exact biological function is unknown. Proteins usually function in conjunction with other proteins in the system and thus, identification and analysis of protein networks become essential to decode protein functions. **OBJECTIVE:** This study was performed to explore possible role(s) of HE4 in reproductive physiology via identification of its interactome in human seminal plasma.

METHODS: HE4 binding proteins were identified through co-immunoprecipitation and MALDITOF/ MS analysis. Also, HE4 was quantified by ELISA in fertile and infertile human seminal plasma samples.

RESULTS: Ten HE4 binding proteins were identified, viz. protein phosphatase 1 regulatory subunit 21, protein kinase CLK3, Ankyrin repeat domain-containing protein36A, prostatic acid phosphatase, KIF5C, Spectrin repeat containing, nuclear envelope 1, isoform CRAf, tropomyosin 4, vezatin, utrophin and fibronectin1. This interaction network suggests that HE4 plays multiple roles, specifically in capacitation, sperm motility and maturation. Further, HE4 concentration in human seminal plasma samples was determined by Elisa. Higher HE4 expression in normozoospermia compared to azoospermia and asthenozoospermia affirms its importance in fertilization.

CONCLUSION: Based on identified interactome, it is plausible that HE4 plays a crucial role in fertilization, specifically in sperm maturation, motility and

capacitation.

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DOI: 10.2174/0929866526666190327124919

PMID: 30919767 [Indexed for MEDLINE]

101: Kapur S, Jana M, Gupta L, Bhalla AS, Naranje P, Gupta AK. Chest MRI Using Multivane-XD, a Novel T2-Weighted Free Breathing MR Sequence. *Curr Probl Diagn Radiol*. 2019 Jul 11. pii: S0363-0188(19)30085-4. doi: 10.1067/j.cpradiol.2019.07.009. [Epub ahead of print] PubMed PMID: 31383474.

OBJECTIVE: To compare image quality of free-breathing T2-weighted MultiVane-XD (MVXD) sequence (non-Cartesian k-space filling using radial rectangular blades) with conventional MR sequences (short tau inversion recovery [STIR], balanced true field echo [BTFE], T1 in phase fast field echo [T1 FFE], and T1-fat saturated postgadolinium [T1PG]) in MR imaging of chest.

MATERIALS AND METHODS: Twenty-one patients (10 men and 11 women) underwent chest MRI including T2W MVXD, STIR, BTFE (18/21), T1 FFE, T1PG (10/21) sequences at 1.5 T. Two reviewers (A.S.B and M.J. with 20 and 10 years of experience in pulmonary imaging, respectively) evaluated each sequence with respect to overall image quality, image sharpness, definition of mediastinal vessels including the aorta, pulmonary arteries, superior vena cava, intrapulmonary vessels; trachea, main bronchi, intrapulmonary airways; lung-mediastinal interface, pulmonary lesion detection, and artefacts in the upper, middle, and lower third of chest using 5-point scales. No sedation was given. Pairwise comparisons between T2W MVXD and the 4 conventional sequences were made using unpaired student's t test.

RESULTS: Mean age of patients was 30.67 years (range: 6-60 years). T2 MVXD showed significantly better overall image quality and sharpness than STIR, T1 FFE, and T1PG ($P < 0.01$) while it was comparable to BTFE. Mediastinal vessels were significantly better visualized on T2 MVXD as compared to STIR and T1 ($P < 0.003$). However, BTFE and T1PG were superior to T2 MVXD for visualization of great vessels, SVC, and intrapulmonary vessels ($P < 0.01$). Visualization of trachea, major bronchi, intrapulmonary airways as well as intrapulmonary lesion detection was significantly better on T2 MVXD images in comparison to any of the other 4 sequences ($P < 0.03$). Intrapulmonary artifacts were significantly lesser in BTFE images as compared to T2 MVXD ($P < 0.01$). No significant difference was found between the severity of intrapulmonary artifacts in other MR sequences as compared to T2 MVXD.

CONCLUSIONS: By virtue of its better overall image quality, sharpness, superior visualization of mediastinal airways, and lesion detection, T2 MultiVane-XD promises to be a robust addition in the armamentarium of thoracic radiologists.

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DOI: 10.1067/j.cpradiol.2019.07.009

PMID: 31383474

102: Kar M, Nisheetha A, Kumar A, Jagtap S, Shinde J, Singla M, M S, Pandit A, Chandele A, Kabra SK, Krishna S, Roy R, Lodha R, Pattabiraman C, Medigeshi GR. Isolation and molecular characterization of dengue virus clinical isolates from pediatric patients in New Delhi. *Int J Infect Dis*. 2019 Jul;84S:S25-S33. doi: 10.1016/j.ijid.2018.12.003. Epub 2018 Dec 7. PubMed PMID: 30528666.

OBJECTIVE: To characterize the in vitro replication fitness, viral diversity, and phylogeny of dengue viruses (DENV) isolated from Indian patients.

METHODS: DENV was isolated from whole blood collected from patients by passaging

in cell culture. Passage 3 viruses were used for growth kinetics in C6/36 mosquito cells. Parallel efforts also focused on the isolation of DENV RNA from plasma samples of the same patients, which were processed for next-generation sequencing.

RESULTS: It was possible to isolate 64 clinical isolates of DENV, mostly DENV-2. Twenty-five of these were further used for growth curve analysis in vitro, which showed a wide range of replication kinetics. The highest viral titers were associated with isolates from patients with dengue with warning signs and severe dengue cases. Full genome sequences of 21 DENV isolates were obtained. Genome analysis mapped the circulating DENV-2 strains to the Cosmopolitan genotype.

CONCLUSIONS: The replication kinetics of isolates from patients with mild or severe infection did not differ significantly, but the viral titers varied by two orders of magnitude between the isolates, suggesting differences in replication fitness among the circulating DENV-2.

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DOI: 10.1016/j.ijid.2018.12.003

PMID: 30528666

103: Kaul S, Kaffenberger BH, Choi JN, Kwatra SG. Cutaneous Adverse Reactions of Anticancer Agents. *Dermatol Clin*. 2019 Oct;37(4):555-568. doi: 10.1016/j.det.2019.05.013. Epub 2019 Jul 27. Review. PubMed PMID: 31466595.

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

104: Kaur A, Midha S, Giri S, Mohanty S. Functional Skin Grafts: Where Biomaterials Meet Stem Cells. *Stem Cells Int*. 2019 Jul 1;2019:1286054. doi: 10.1155/2019/1286054. eCollection 2019. Review. PubMed PMID: 31354835; PubMed Central PMCID: PMC6636521.

Skin tissue engineering has attained several clinical milestones making remarkable progress over the past decades. Skin is inhabited by a plethora of cells spatiotemporally arranged in a 3-dimensional (3D) matrix, creating a complex microenvironment of cell-matrix interactions. This complexity makes it difficult to mimic the native skin structure using conventional tissue engineering approaches. With the advent of newer fabrication strategies, the field is evolving rapidly. However, there is still a long way before an artificial skin substitute can fully mimic the functions and anatomical hierarchy of native human skin. The current focus of skin tissue engineers is primarily to develop a 3D construct that maintains the functionality of cultured cells in a guided manner over a period of time. While several natural and synthetic biopolymers have been translated, only partial clinical success is attained so far. Key challenges include the hierarchical complexity of skin anatomy; compositional mismatch in terms of material properties (stiffness, roughness,

wettability) and degradation rate; biological complications like varied cell numbers, cell types, matrix gradients in each layer, varied immune responses, and varied methods of fabrication. In addition, with newer biomaterials being adopted for fabricating patient-specific skin substitutes, issues related to escalating processing costs, scalability, and stability of the constructs under in vivo conditions have raised some concerns. This review provides an overview of the field of skin regenerative medicine, existing clinical therapies, and limitations of the current techniques. We have further elaborated on the upcoming tissue engineering strategies that may serve as promising alternatives for generating functional skin substitutes, the pros and cons associated with each technique, and scope of their translational potential in the treatment of chronic skin ailments.

DOI: 10.1155/2019/1286054

PMCID: PMC6636521

PMID: 31354835

105: Kaur K, Jha P, Pathak P, Suri V, Sharma MC, Garg A, Suri A, Sarkar C. Approach to molecular subgrouping of medulloblastomas: Comparison of NanoString nCounter assay versus combination of immunohistochemistry and fluorescence in-situ hybridization in resource constrained centres. *J Neurooncol.* 2019 Jul;143(3):393-403. doi: 10.1007/s11060-019-03187-y. Epub 2019 May 18. PubMed PMID: 31104222.

INTRODUCTION: Molecular classification of medulloblastomas (MB) is prognostically and therapeutically relevant and helps in better risk-stratification. Translation of this subgrouping to routine practice still remains a challenge. The most pathologist accessible techniques for molecular subgrouping include immunohistochemistry (IHC), fluorescent in-situ hybridization (FISH) and NanoString.

OBJECTIVES: (1) Molecular subgrouping of MBs by IHC and FISH, and NanoString assay (2) To compare their efficacy and cost for applicability in resource constrained centers.

METHODS: Ninety-five cases of MB with adequate tissue were included. Molecular subgrouping was performed by IHC for β -catenin, GAB1 and YAP1; FISH for MYC amplification, and sequencing for CTNNB1, and by NanoString Assay on the same set of MBs. A subset of cases was subjected to 850k DNA methylation array.

RESULTS: IHC+FISH classified MBs into 15.8% WNT, 16.8% SHH, and 67.4% non-WNT/non-SHH subgroups; with MYC amplification identified in 20.3% cases of non-WNT/non-SHH. NanoString successfully classified 91.6% MBs into 25.3% WNT, 17.2% SHH, 23% Group 3 and 34.5% Group 4. However, NanoString assay failure was seen in eight cases, all of which were >8-years-old formalin-fixed paraffin-embedded tissue blocks. Concordant subgroup assignment was noted in 88.5% cases, while subgroup switching was seen in 11.5% cases. Both methods showed prognostic correlation. Methylation profiling performed on discordant cases revealed 1 out of 4 extra WNT identified by NanoString to be WNT, others aligned with IHC subgroups; extra SHH by NanoString turned out to be SHH by methylation.

CONCLUSIONS: Both IHC supplemented by FISH and NanoString are robust methods for molecular subgrouping, albeit with few disadvantages. IHC cannot differentiate between Groups 3 and 4, while NanoString cannot classify older-archived tumors, and is not available at most centres. Thus, both the methods complement each other and can be used in concert for high confidence allotment of molecular subgroups in clinical practice.

DOI: 10.1007/s11060-019-03187-y

PMID: 31104222

106: Kaur K, Kakkar A, Bhardwaj N, Sakthivel P, Singh CA, Jain D, Mathur SR, Iyer VK, Sood R. Spectrum of cytomorphological features of extranodal NK/T-cell lymphoma, nasal type. *Cytopathology*. 2019 Jul;30(4):393-401. doi: 10.1111/cyt.12705. Epub 2019 May 6. PubMed PMID: 30980430.

OBJECTIVE: Extranodal natural killer/T-cell lymphoma, nasal type (ENKTL) is an aggressive extranodal lymphoma of NK-cell or T-cell lineage. Its clinical features overlap with those of several sinonasal mass lesions. While the histopathological features are well described, diagnosis is often difficult, owing to presence of extensive coagulative necrosis, so that repeated biopsies may sometimes be necessary for correct diagnosis. Literature on cytological findings of ENKTL is limited.

METHODS: Cytomorphological features of cases of histologically confirmed ENKTL having corresponding cytology samples were reviewed retrospectively, to identify distinctive features that could possibly suggest this entity.

RESULTS: Aspirates from five patients were studied: four from cervical nodes, one from cheek swelling and one from pleural fluid. Two aspirates were reported as positive for malignancy, two as atypical lymphoid proliferation and one was non-diagnostic. Pleural fluid was reported as malignant, favouring a diagnosis of carcinoma. On cytology, aspirates showed medium to large cells with folded, indented nuclei and abundant pale cytoplasm, some with tongue-like cytoplasmic protrusions. A distinctive feature was presence of large loose clusters of tumour cells with arborising capillaries running through them. Interestingly, necrosis was consistently absent. Subsequent biopsies from palate (three cases) and nasal masses (two cases) confirmed the diagnosis of ENKTL.

CONCLUSIONS: Suspicion of ENKTL on cytology is crucial for timely diagnosis to avoid diagnostic delay, especially when only highly necrotic biopsy samples are available. Awareness of distinctive cytomorphological features is required to make fine needle aspiration an effective diagnostic tool for initial diagnosis and for evaluation of possible recurrences.

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DOI: 10.1111/cyt.12705
PMID: 30980430

107: Kaushik S, Tomar A, Puthanmadhom Narayanan S, Nag TC, Arya DS, Bhatia J. Pitavastatin attenuates cisplatin-induced renal injury by targeting MAPK and apoptotic pathways. *J Pharm Pharmacol*. 2019 Jul;71(7):1072-1081. doi: 10.1111/jphp.13090. Epub 2019 Apr 7. PubMed PMID: 30957246.

OBJECTIVE: Anti-neoplastic drug cisplatin is prescribed widely for treatment of a variety of malignancies. Its use has been restricted lately due to severe renal toxicity. The purpose of current study was to investigate the effect of pitavastatin (a hypolipidaemic drug) in cisplatin-induced acute kidney injury in rats.

METHOD: Male Wistar rats (150-200 g) were treated with different doses of pitavastatin (0.16, 0.32 and 0.64 mg/kg per day p.o.; 10 days). On 7th day of the study, rats were administered cisplatin (8 mg/kg i.p.). Rats were euthanized (11th day), and blood and tissues were processed to evaluate biochemical, histopathological and ultrastructural parameters along with the analysis of immunohistochemistry and DNA-fragmentation studies. Protein expressions were analysed to demonstrate the underlying molecular mechanisms.

KEY FINDINGS: In the study group with cisplatin insult, KFT parameters were found to be elevated, concentration of apoptotic markers was found to be increased, histopathological and ultramicroscopical architecture was found to be distorted and the expression of MAPK proteins was also found to be elevated as compared to the normal group rats. Pitavastatin treatment alleviated all these anomalies.

CONCLUSION: Cisplatin-induced acute renal injury was improved on administration of pitavastatin via inhibition of MAPK and apoptotic pathway.

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DOI: 10.1111/jphp.13090

PMID: 30957246

108: Khandelwal A, Bithal PK, Rath GP. Anesthetic considerations for extracranial injuries in patients with associated brain trauma. *J Anaesthesiol Clin Pharmacol*. 2019 Jul-Sep;35(3):302-311. doi: 10.4103/joacp.JOACP_278_18. Review. PubMed PMID: 31543576; PubMed Central PMCID: PMC6748016.

Patients with severe traumatic brain injury often presents with extracranial injuries, which may contribute to fatal outcome. Anesthetic management of such polytrauma patients is extremely challenging that includes prioritizing the organ system to be dealt first, reducing on-going injury, and preventing secondary injuries. Neuroprotective and neurorescue measures should be instituted simultaneously during extracranial surgeries. Selection of anesthetic drugs that minimally interferes with cerebral dynamics, maintenance of hemodynamics and cerebral perfusion pressure, optimal utilization of multimodal monitoring techniques, and aggressive rehabilitation approach are the key factors for improving overall patient outcome.

DOI: 10.4103/joacp.JOACP_278_18

PMCID: PMC6748016

PMID: 31543576

109: Khandelwal A, Mishra RK, Singh S, Singh S, Rath GP. Dilated Pupil as a Diagnostic Component of Brain Death-Does it Really Matter? *J Neurosurg Anesthesiol*. 2019 Jul;31(3):356. doi: 10.1097/ANA.0000000000000521. PubMed PMID: 29939976.

110: Khanna K, Sharma S, Gupta DK. A Clinical Approach to Diagnosis of Ambiguous Genitalia. *J Indian Assoc Pediatr Surg*. 2019 Jul-Sep;24(3):162-169. doi: 10.4103/jiaps.JIAPS_70_18. Review. PubMed PMID: 31258263; PubMed Central PMCID: PMC6568146.

Disorders of sex development (DSD) are a sensitive and stressful condition for the family as well as the treating physician to deal with. The main issue in managing such cases is sex assignment. The decision is influenced by the cultural background, the sex of rearing, clinical features, the biochemical parameters including hormonal studies, the imaging reports, parental preference, fertility potential, and the assessment of mental make-up of the child when possible. In third world countries, there is diagnostic dilemma as most children with DSD present late and a detailed-lengthy work-up often delay their definitive treatment. In this article, the authors try to identify the important clinical features in children presenting with various types of DSD, which may aid in making a quick provisional clinical diagnosis and expediting the diagnostic work-up. The data have been gathered from 38 years of experience of the senior author while managing about 1200 cases of DSD in the pediatric intersex clinic at the tertiary care level institute.

DOI: 10.4103/jiaps.JIAPS_70_18

PMCID: PMC6568146

PMID: 31258263

111: Khokhar SK, Tomar A, Pillay G, Agarwal E. Biometric changes in Indian

pediatric cataract and postoperative refractive status. *Indian J Ophthalmol.* 2019 Jul;67(7):1068-1072. doi: 10.4103/ijo.IJO_1327_18. PubMed PMID: 31238413; PubMed Central PMCID: PMC6611230.

Purpose: To prospectively evaluate the biometric changes in Indian pediatric cataract and postoperative refractive status.

Methods: A total of 147 patients were recruited into three groups: age <6 months, age between 7 months and 18 months, and age between 19 and 60 months and prospectively observed for 6 months. Exclusion criteria were preterm birth, microphthalmia, microcornea, megalocornea, uveitis, glaucoma, and traumatic or complicated cataract. Axial length and keratometry, the primary outcome measures, were taken preoperatively under general anesthesia before surgery. These children were followed up for 6 months to look for refractive and biometric changes. T-test and linear regression with the logarithm of independent variables were done.

Results: All unilateral cataractous eyes (n = 25) and randomly selected bilateral cases (n = 122) were included in the analysis, for a total of 147 eyes. Mean age was 17.163 ± 13.024 months; axial length growth was 0.21, 0.18, 0.06 mm/month, and keratometry decline was 0.083, 0.035, 0.001 D/month in age groups 0-6, 7-18, and 19-60 months, respectively. The visual acuity improved in log MAR from 1.020 to 0.745 at 6 months postoperatively. There was statistically significant (Spearman's correlation coefficient = -0.575, $P < 0.001$) between age and postoperative refraction. There were no intraocular lens (IOL)-related complications seen in the immediate postoperative period. Peripheral opacification was seen in 102 eyes and central opacification in 1 eye at a 6-month follow-up.

Conclusion: Indian eyes have a lower rate of axial length growth and keratometry change in comparison with western eyes implying smaller undercorrection in emmetropic IOL power for Indian pediatric eyes to achieve a moderate amount of hyperopia.

DOI: 10.4103/ijo.IJO_1327_18

PMCID: PMC6611230

PMID: 31238413 [Indexed for MEDLINE]

112: Kothari SS, Relan J, Devagourou V. Operable ventricular septal defect despite severe pulmonary hypertension and cyanosis! *Cardiol Young.* 2019 Jul;29(7):986-988. doi: 10.1017/S1047951119001057. Epub 2019 Jul 23. PubMed PMID: 31331408.

Patients with a significant left-to-right shunt at ventricular level may become inoperable at an early age due to irreversible pulmonary vascular disease. On the other hand, even suprasystemic pulmonary hypertension due to mitral stenosis remains treatable. We report a 24-year-old patient with large ventricular septal defect, severe mitral stenosis and cyanosis who improved after surgical correction of both the lesions. This emphasises the importance of additional post-capillary pulmonary hypertension in Eisenmenger syndrome.

DOI: 10.1017/S1047951119001057

PMID: 31331408

113: Krishnan A, Das DK. Mortality surveillance in India: Past, present, and future. *Indian J Public Health.* 2019 Jul-Sep;63(3):163-164. doi: 10.4103/ijph.IJPH_433_19. PubMed PMID: 31552842.

114: Kumar A, Lakshminarayanan D, Joshi N, Vaid S, Bhoi S, Deorari A. Triageing the triage: reducing waiting time to triage in the emergency department at a tertiary care hospital in New Delhi, India. *Emerg Med J.* 2019 Sep;36(9):558-563.

doi: 10.1136/emered-2019-208577. Epub 2019 Jul 31. PubMed PMID: 31366625.

BACKGROUND: Prolonged wait times prior to triage outside the emergency department (ED) were a major problem at our institution, compromising patient safety. Patients often waited for hours outside the ED in hot weather leading to exhaustion and clinical deterioration. The aim was to decrease the median waiting time to triage from 50min outside ED for patients to <30min over a 4-month period.

METHODS: A quality improvement (QI) team was formed. Data on waiting time to triage were collected between 12 pm and 1 pm. Data were collected by hospital attendants and recorded manually. T1 was noted as a time of arrival outside the ED, and T2 was noted as the time of first medical contact. The QI team used plan-do-study-act cycles to test solutions. Change ideas to address these gaps were tested during May and June 2018. Change ideas were focused on improving the knowledge and skills of staff posted in triage and reducing turnover of triage staff. Data were analysed using run chart rules.

RESULTS: Within 6 weeks, the waiting time to triage reduced to <30min (median, 12 min; IQR, 11 min) and this improvement was sustained for the next 8 weeks despite an increase in patient load.

CONCLUSION: The authors demonstrated that people new to QI could use improvement methods to address a specific problem. It was the commitment of the frontline staff, with the active support of senior leadership in the department that helped this effort succeed.

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DOI: 10.1136/emered-2019-208577
PMID: 31366625

115: Kumar R. What's inside. Indian J Urol. 2019 Jul-Sep;35(3):183-184. doi: 10.4103/iju.IJU_195_19. PubMed PMID: 31367067; PubMed Central PMCID: PMC6639988.

116: Kumar R, Gupta S, Gautam M, Jhajhria SK, Ray SB. Diverse characters of Brennan's paw incision model regarding certain parameters in the rat. Korean J Pain. 2019 Jul 1;32(3):168-177. doi: 10.3344/kjp.2019.32.3.168. PubMed PMID: 31257825; PubMed Central PMCID: PMC6615451.

Background: Brennan's rodent paw incision model has been extensively used for understanding mechanisms underlying postoperative pain in humans. However, alterations of physiological parameters like blood pressure and heart rate, or even feeding and drinking patterns after the incision have not been documented as yet. Moreover, though eicosanoids like prostaglandins and leukotrienes contribute to inflammation, tissue levels of these inflammatory mediators have never been studied. This work further investigates the antinociceptive effect of protein C after intra-wound administration.

Methods: Separate groups of Sprague-Dawley rats were used for quantitation of cyclooxygenase (COX) activity and leukotriene B4 level by enzyme-linked immunosorbent assay, as well as estimation of cardiovascular parameters and feeding and drinking behavior after paw incision. In the next part, rats were subjected to incision and 10 µg of protein C was locally administered by a micropipette. Both evoked and non-evoked pain parameters were then estimated. **Results:** COX, particularly COX-2 activity and leukotriene B4 levels increased after incision. Hemodynamic parameters were normal. Feeding and drinking were affected on days 1 and 3, and on day 1, respectively. Protein C attenuated non-evoked pain behavior alone up to day 2.

Conclusions: Based upon current observations, Brennan's rodent paw incision model appears to exhibit a prolonged period of nociception similar to that after

surgery, with minimal interference of physiological parameters. Protein C, which is likely converted to activated protein C in the wound, attenuated the guarding score, which probably represents pain at rest after surgery in humans.

DOI: 10.3344/kjp.2019.32.3.168

PMCID: PMC6615451

PMID: 31257825

117: Kumar S, Mohapatra AN, Sharma HP, Singh UA, Kambi NA, Velpandian T, Rajan R, Iyengar S. Altering Opioid Neuromodulation in the Songbird Basal Ganglia Modulates Vocalizations. *Front Neurosci*. 2019 Jul 3;13:671. doi: 10.3389/fnins.2019.00671. eCollection 2019. PubMed PMID: 31333400; PubMed Central PMCID: PMC6618663.

Although the interplay between endogenous opioids and dopamine (DA) in the basal ganglia (BG) is known to underlie diverse motor functions, few studies exist on their role in modulating speech and vocalization. Vocal impairment is a common symptom of Parkinson's disease (PD), wherein DA depletion affects striosomes rich in μ -opioid receptors (μ -ORs). Symptoms of opioid addiction also include deficiencies in verbal functions and speech. To understand the interplay between the opioid system and BG in vocalization, we used adult male songbirds wherein high levels of μ -ORs are expressed in Area X, a BG region which is part of a circuit similar to the mammalian thalamocortical-basal ganglia loop. Changes in DA, glutamate and GABA levels were analyzed during the infusion of different doses of the μ -OR antagonist naloxone (50 and 100 ng/ml) specifically in Area X. Blocking μ -ORs in Area X with 100 ng/ml naloxone led to increased levels of DA in this region without altering the number of songs directed toward females (FD). Interestingly, this manipulation also led to changes in the spectro-temporal properties of FD songs, suggesting that altered opioid modulation in the thalamocortical-basal ganglia circuit can affect vocalization. Our study suggests that songbirds are excellent model systems to explore how the interplay between μ -ORs and DA modulation in the BG affects speech/vocalization.

DOI: 10.3389/fnins.2019.00671

PMCID: PMC6618663

PMID: 31333400

118: Kumar V, Azad SV, Vohra R, Venkatesh P. Serous macular detachment in nanophthalmos: A manifestation of pachychoroid spectrum. *Am J Ophthalmol Case Rep*. 2019 Jul 17;15:100522. doi: 10.1016/j.ajoc.2019.100522. eCollection 2019 Sep. PubMed PMID: 31384695; PubMed Central PMCID: PMC6661461.

Purpose: The purpose of this article is to report serous macular detachment (SMD) similar to that seen in central serous chorioretinopathy (CSCR) in patients with nanophthalmos.

Observation: It is a retrospective case series from a tertiary eye care center in India. Multi modal imaging features of eyes with serous macular detachment in patients with nanophthalmos including colour fundus photographs, short wave autofluorescence, fundus fluorescein angiography and optical coherence tomography were studied. In addition axial length, anterior chamber depth, lens thickness and subfoveal choroidal thickness were measured. The eyes were treated with laser photocoagulation to the focal leak seen on fluorescein angiography. The patients were followed up for 12-18 months.

Results: Three eyes of three patients having serous macular detachment in nanophthalmos were identified. All three eyes had axial length <21mm, subfoveal choroidal thickness >450 microns and a focal leak on fluorescein angiography. Two eyes had serous pigment epithelial detachments underneath the SMD as well. Two eyes had peripheral pigmentary changes due to resolved subretinal fluid. The SMD

resolved completely in two eyes and partially in one eye following focal laser photocoagulation.

Conclusion and importance: Serous macular detachments bearing features similar to that of CSCR can occur in the setting of nanophthalmos. These may represent manifestation of thick choroid or may represent forme fruste choroidal effusion.

DOI: 10.1016/j.ajoc.2019.100522

PMCID: PMC6661461

PMID: 31384695

119: Kumar V. Reply: Parkes Weber Syndrome. Associated Renovascular Hypertension? QJM. 2019 Jul 5. pii: hcz174. doi: 10.1093/qjmed/hcz174. [Epub ahead of print] PubMed PMID: 31274166.

120: Kumar V, Jain S. Nasal retinoschisis in a case of high myopia. Indian J Ophthalmol. 2019 Jul;67(7):1189. doi: 10.4103/ijo.IJO_1837_18. PubMed PMID: 31238459; PubMed Central PMCID: PMC6611262.

121: Kumar V, Tewari R. Giant retinal pigment epithelium rip in a patient with peripheral exudative hemorrhagic chorioretinopathy. Indian J Ophthalmol. 2019 Jul;67(7):1164-1165. doi: 10.4103/ijo.IJO_827_18. PubMed PMID: 31238439; PubMed Central PMCID: PMC6611281.

122: Kumar V, Kumawat D, Tewari R, Venkatesh P. Ultra-wide field imaging of pigmented para-venous retino-choroidal atrophy. Eur J Ophthalmol. 2019 Jul;29(4):444-452. doi: 10.1177/1120672118795056. Epub 2018 Sep 3. PubMed PMID: 30175613.

OBJECTIVE: To describe the ultra-wide field imaging features of pigmented para-venous retino-choroidal atrophy.

DESIGN: Retrospective review at a tertiary care centre.

PARTICIPANTS: Eight eyes of five patients with pigmented para-venous retino-choroidal atrophy who presented to our retina clinic over last 2 years.

METHODS: Retrospective review of ultra-wide field pseudo-colour and short wave autofluorescence imaging was performed. In vivo histology of the macula and areas of retino-choroidal atrophy was studied with swept source optical coherence tomography (SS-OCT).

RESULTS: The median age was 40 years (range: 22-67 years). Best corrected visual acuity ranged from perception of light to 20/20. The para-venous retino-choroidal atrophy and pigment clumping not only involved the major arcade vessels but also extended into the peripapillary area and retinal periphery. The affected areas demonstrated hypoautofluorescence with sharp hyperautofluorescent borders.

Macular atrophy, epiretinal membrane and optic disc pallor were noted in two eyes each. In all cases, the affected pigmentary area had disorganization of inner retinal layers, disruption of outer retinal layers and retinal pigment epithelium and markedly thinned out choroid on swept source optical coherence tomography. Concurrent involvement with retinitis pigmentosa in the fellow eye was noted in two patients.

CONCLUSION: Ultra-wide field imaging of pigmented para-venous retino-choroidal atrophy sheds light onto the widespread retino-choroidal abnormalities.

Concurrent disc and macular involvement may jeopardize the visual function.

Pigmented para-venous retino-choroidal atrophy may be considered as a self-limited form of retinitis pigmentosa.

DOI: 10.1177/1120672118795056

PMID: 30175613 [Indexed for MEDLINE]

123: Kumawat D, Sahay P, Mahalingam K, Vikas SJ, Sen S, Banerjee M, Venkatesh P. Multifocal electroretinogram in eyes with intravitreal silicone oil and changes following silicone oil removal. *Doc Ophthalmol*. 2019 Jul 20. doi: 10.1007/s10633-019-09710-w. [Epub ahead of print] PubMed PMID: 31327119.

PURPOSE: To determine the effect of intravitreal silicone oil (SO) on multifocal electroretinogram (mfERG) and the changes in mfERG following SO removal.

METHODS: Twelve eyes of 12 patients with SO in vitreous cavity with corrected distance visual acuity (CDVA) >20/200 were prospectively enrolled as cases over a period from July 2016 to June 2018. The fellow normal eyes served as control. The eyes were evaluated with P1 and N1 wave amplitude and implicit time on mfERG at baseline, 1 and 4 weeks after SO removal.

RESULTS: The mean age was 44.9±18.9 (range 18-74) years. The indication for SO injection was retinal detachment (n=9, three macula-on eyes, six macula-off eyes) and endophthalmitis (n=3). The median (range) LogMAR CDVA at baseline was 0.54 (0.18-0.78) in cases and did not change post-SO removal (p=0.29). There was a significant decrease in average P1 and N1 wave amplitude (p=0.0001 and 0.0001, respectively) and delay in average P1 and N1 wave implicit time (p=0.0002 and 0.021, respectively) in cases as compared to controls. The macular status and duration of SO tamponade did not have a significant correlation with mfERG parameters. There was a significant increase in average P1 and N1 wave amplitude (p=0.009 and 0.003, respectively) at 1 week following SO removal but no change in average P1 and N1 wave implicit time (p=0.41 and 0.37, respectively).

CONCLUSION: mfERG may be reliably performed for the assessment of macular function in SO-filled eyes. Intravitreal SO exerts an insulating effect on the density of the electric potentials.

DOI: 10.1007/s10633-019-09710-w

PMID: 31327119

124: Kumawat D, Venkatesh P, Brar AS, Sahay P, Kumar V, Chandra P, Chawla R. ATYPICAL MACULAR HOLES. *Retina*. 2019 Jul;39(7):1236-1264. doi: 10.1097/IAE.0000000000002448. PubMed PMID: 30664121.

PURPOSE: To study the etiology, clinical features, management options, and visual prognosis in various types of atypical macular holes (MHs).

METHODS: A review of the literature was performed, which focused on the etiopathogenesis of atypical or secondary MHs, their differentiating clinical features, management strategies, and varied clinical outcomes. Idiopathic or age-related, myopic, and traumatic MHs were excluded.

RESULTS: Atypical or secondary MHs arise out of concurrent ocular pathologies (dystrophy, degeneration, or infections) and laser/surgery. The contributing factors may be similar to those responsible for idiopathic or typical MHs, i.e., tangential or anteroposterior vitreofoveal traction or cystoid degeneration. The management is either observation or treatment of the underlying cause. The prognosis depends on the background pathology, duration of disease, and baseline visual acuity governed by the size of MH and morphologic health of underlying RPE and photoreceptors. The closer the morphology of atypical MH is to that of an idiopathic MH, the better the surgical outcome is.

CONCLUSION: With the advancements in retinal imaging, atypical MHs are now more frequently recognized. With increasing understanding of the underlying disease processes, and improvement in investigations and surgical treatment, management of atypical MHs may improve in the future.

DOI: 10.1097/IAE.0000000000002448

PMID: 30664121

125: Lee J, Banerjee J, Khobragade PY, Angrisani M, Dey AB. LASI-DAD study: a protocol for a prospective cohort study of late-life cognition and dementia in India. *BMJ Open*. 2019 Jul 31;9(7):e030300. doi: 10.1136/bmjopen-2019-030300. PubMed PMID: 31371300; PubMed Central PMCID: PMC6677961.

INTRODUCTION: Alzheimer's disease and related dementias can be considered the epidemic of the 21st century. Particularly, the predicted growth in the size of elderly populations in low-income and middle-income countries is expected to produce a dramatic surge in dementia prevalence and incidence. Although a rising burden of dementia presents an urgent challenge for India, previous efforts to study dementia in the country have relied on non-representative samples in geographically restricted regions. The Harmonised Diagnostic Assessment of Dementia for the Longitudinal Aging Study in India (LASI-DAD) will provide rich, population-representative data on late-life cognition and dementia and their risk factors for the first time in India.

METHODS: The LASI-DAD will recruit a sample of 3000 people aged 60+ years. Their family members or friends, whom respondents nominate as informants, participate in the computer-assisted personal interview. The study sample is drawn from the ongoing, nationally representative Longitudinal Aging Study in India, a multipurpose panel survey of aging. We aim to collect rich data on cognitive and neuropsychological tests, informant reports, and epidemiological data through a comprehensive geriatric assessment, and venous blood collection and assays. For a subsample, we collect neuroimaging data. Data collection is currently in progress in 14 States and Union Territories of India. Clinicians will provide clinical consensus diagnosis based on the Clinical Dementia Rating.

ETHICS AND DISSEMINATION: Ethics approval was obtained from the Indian Council of Medical Research and all collaborating institutions. Anonymised data will be available for the larger research community through a secured website hosted by the Gateway to Global Aging Data platform. Research findings from the LASI-DAD team will be disseminated through journal publications and presentations at professional conferences.

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DOI: 10.1136/bmjopen-2019-030300
PMCID: PMC6677961
PMID: 31371300

126: 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.

127: Madaan P, Jauhari P, Chakrabarty B, Kumar A, Gulati S. Saposin B-Deficient Metachromatic Leukodystrophy Mimicking Acute Flaccid Paralysis. *Neuropediatrics*. 2019 Oct;50(5):318-321. doi: 10.1055/s-0039-1692646. Epub 2019 Jul 18. PubMed PMID: 31319425.

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.

Georg Thieme Verlag KG Stuttgart · New York.

DOI: 10.1055/s-0039-1692646

PMID: 31319425

128: Madan K, Biswal SK, Tiwari P, Mittal S, Hadda V, Mohan A, Khilnani GC, Guleria R. Nebulized lignocaine for topical anaesthesia in no-sedation bronchoscopy (NEBULA): A randomized, double blind, placebo-controlled trial. *Lung India*. 2019 Jul-Aug;36(4):288-294. doi: 10.4103/lungindia.lungindia_348_18. PubMed PMID: 31290412; PubMed Central PMCID: PMC6625242.

Background: The role of nebulized lignocaine administration for flexible bronchoscopy is unclear.

Methods: In this randomized, double-blind, placebo-controlled trial, subjects undergoing diagnostic flexible bronchoscopy were randomized to receive either nebulized lignocaine (2.5 ml of 4% lignocaine) or nebulized (2.5 ml of 0.9%) saline (placebo). All received 10% lignocaine pharyngeal spray (4 sprays) and 5-ml nasal 2% lignocaine gel. 1% lignocaine solution was used for spray-as-you-go administration in all. Co-primary outcomes were Operator-rated overall procedure satisfaction and Operator-rated cough scores on Visual Analog Scale (VAS). Secondary objectives were cumulative lignocaine dose, proportion of subjects receiving >8.2-mg/kg lignocaine, and complications between the groups.

Results: Two hundred and twenty subjects were randomized and 217 (109 - nebulized lignocaine and 108 - placebo) received the intervention. Baseline characteristics were comparable. Operator-rated overall procedure satisfaction scores on VAS (7.30 ± 1.54 nebulized lignocaine and 7.50 ± 1.31 placebo group, $P = 0.85$) and Operator-rated cough scores on VAS (3 [2-5] nebulized lignocaine and 3 [2-4] placebo group, $P = 0.18$) were similar. Cumulative lignocaine dose was significantly greater in nebulized lignocaine group (331.46 ± 9.41 mg vs. 232.22 ± 12.77 mg, $P < 0.001$), and a significantly greater number of subjects in this group received lignocaine dose >8.2 mg/kg. Minor complications occurred in 6 and 9 subjects in nebulized lignocaine and placebo groups, respectively, $P = 0.41$. Conclusion: Administration of nebulized lignocaine in addition to pharyngeal lignocaine spray, during no-sedation bronchoscopy, increases the cumulative lignocaine dose without improved procedural comfort. Additional nebulized lignocaine during bronchoscopy is not recommended.

DOI: 10.4103/lungindia.lungindia_348_18

PMCID: PMC6625242

PMID: 31290412

129: Magoon R, Makhija N. Endothelial Glycocalyx and Cardiac Surgery: Newer Insights. *J Cardiothorac Vasc Anesth*. 2019 Jul 7. pii: S1053-0770(19)30642-1. doi: 10.1053/j.jvca.2019.07.003. [Epub ahead of print] PubMed PMID: 31371064.

130: Maharana PK, Nawaz S, Singhal D, Jhanji V, Agarwal T, Sharma N, Vajpayee RB. Causes and Management Outcomes of Acquired Corneal Opacity in a Preschool Age (0-5 Years) Group: A Hospital-Based Study. *Cornea*. 2019 Jul;38(7):868-872. doi: 10.1097/ICO.0000000000001962. PubMed PMID: 31045962.

PURPOSE: To evaluate the causes and management outcomes of acquired corneal opacity in a preschool age group (0-5 years) at a tertiary care hospital.

METHODS: Medical records of all cases (0-5 years) with acquired corneal opacity

presenting to the cornea clinic of a tertiary eye care hospital from February 2013 to January 2014 were evaluated for age of onset, age at presentation, sex, laterality, cause of opacity, visual acuity, nutritional status, and socioeconomic class of the parents. The etiology of corneal opacity and the type of intervention with outcome at 3 months follow-up were recorded.

RESULTS: A total of 106 cases were included in the study. The most common cause of corneal scarring was healed infective keratitis (35.8%). Chemical injury, mechanical trauma, and keratomalacia were the other causes, affecting 21.8%, 20.8%, and 16% of the cases, respectively. Optical iridectomy was the most commonly performed procedure (35.8%), followed by lens aspiration with intraocular lens implantation (17.9%) and penetrating keratoplasty (17%). The mean corrected visual acuity (spectacle or contact lens) at the time of presentation and at 3 months after treatment was 2.9 ± 0.3 (perception of light) and 2.2 ± 0.9 (hand motions) logarithm of minimum angle of resolution (logMAR) units, respectively.

CONCLUSIONS: Chemical injury and keratomalacia are the major causes of acquired corneal opacity in preschool age groups in India and are associated with poor visual prognosis.

DOI: 10.1097/ICO.0000000000001962

PMID: 31045962 [Indexed for MEDLINE]

131: Mahendran M, Gupta K, Kumar A, Bhatt M, Khan MA, Vyas S, Makkar N, Baitha U, Jadon RS, Wig N. Bedside sonography by medicine residents in critically ill patients: A retrospective study from a teaching hospital in India. *J Family Med Prim Care*. 2019 Jul;8(7):2517-2521. doi: 10.4103/jfmprc.jfmprc_379_19. PubMed PMID: 31463287; PubMed Central PMCID: PMC6691465.

Context: Ultrasonography has become the frontline diagnostic tool for emergency care because of its non-invasive nature and the feasibility to perform repeated quick assessments in sick patients. The effectiveness of this modality, when used by trainee doctors to take clinically important decisions in patients requiring emergency care, is not much explored. In this pilot study, we analyzed whether use of this technology by Medicine resident doctors can help in better decision making in acutely and critical ill patients.

Setting and Design: This is a retrospective study conducted in the Department of Medicine, All India Institute of Medical Sciences, New Delhi.

Methods and Materials: The study was conducted using patient data collected from acutely ill and critical care patients, who underwent bedside ultrasonography from August 2017 to August 2018. In all cases, resident doctor's finding had been assessed by an experienced operator before a treatment decision was made.

Statistical Analysis Used: Continuous variables with normal distribution were computed using t test. Ordinal variables and variables following non-normal distribution were analyzed using the Wilcoxon rank-sum test.

Results: Thirty-two patients were recruited. There was agreement on 78% (25/32) ultrasound records between the trainee and the experienced operator. Among patients evaluated for shock, agreement reached 83% (15/18). Among patients who underwent transthoracic echocardiography, agreement was 66.7% (4/6). Among patients who underwent lung ultrasound, agreement was 70% (7/10). In both the patients in whom abdominal ultrasound was done, final inferences were consistent between the residents and experts.

Conclusions: The results show that in majority of critically ill patients, Medicine residents made sonographic observations correctly and took clinically precise sonography guided decisions on par with expert sonologists even with minimal training and ultrasound exposure.

DOI: 10.4103/jfmprc.jfmprc_379_19

PMCID: PMC6691465

PMID: 31463287

132: Maheshwari A, Bajpai M, Patidar GK. Effects of therapeutic plasma exchange on liver function test and coagulation parameters in acute liver failure patients. *Hematol Transfus Cell Ther.* 2019 Jul 23. pii: S2531-1379(19)30102-6. doi: 10.1016/j.htct.2019.05.003. [Epub ahead of print] PubMed PMID: 31387798.

BACKGROUND: Currently the treatment of choice for critical liver failure is liver transplantation. Liver failure is treated conservatively until a matching liver donor becomes available. The therapeutic plasma exchange (TPE) plays an important role as a bridge to transplantation by removing accumulated toxins from patient plasma, as well as restoring the coagulation profile.

METHOD: This was a retrospective study on critically ill liver disease patients who underwent TPE from January 2012 to September 2015. The data were collected for the analyses of coagulation parameters, liver function tests, renal function tests, model for end-stage liver disease (MELD) scores, mortality, and hospital stay.

RESULTS: In the study duration, a total of 45 patients with critical liver disease underwent therapeutic plasma exchange. The TPE resulted in a statistically significant reduction in the bilirubin level, aspartate aminotransferase (AST), alanine aminotransferase (ALT), prothrombin time (PT), international normalized ratio (INR), serum ferritin level and MELD scores. Higher MELD scores in both pre- and post-TPE were associated with higher mortality during the hospital stay.

CONCLUSION: The TPE is safe and well-tolerated, and it improves coagulation profile and liver function tests in critically ill liver disease patients, but the overall survival remains low.

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DOI: 10.1016/j.htct.2019.05.003

PMID: 31387798

133: Makhija N, Magoon R, Sarkar S. Transesophageal echocardiographic imaging of an aortic intramural hematoma: characterizing the crescent. *Can J Anaesth.* 2019 Nov;66(11):1415-1416. doi: 10.1007/s12630-019-01456-y. Epub 2019 Jul 31. PubMed PMID: 31367902.

134: Malhotra S, Kant S, Ahamed F, Rath R, Kalaivani M, Gupta SK, Ramadass S, Pathak VK, Jaiswal A, Parthasarath R, Acharya BP, Dwarakanathan V. Health behaviors, outcomes and their relationships among young men aged 18-24 years in a rural area of north India: A cross-sectional study. *PLoS One.* 2019 Jul 26;14(7):e0220285. doi: 10.1371/journal.pone.0220285. eCollection 2019. Erratum in: *PLoS One.* 2019 Aug 15;14(8):e0221493. PubMed PMID: 31348808; PubMed Central PMCID: PMC6662032.

BACKGROUND: There is limited information related to health behaviors and their related factors among young men in rural setting of India. This study was conducted to investigate multiple health risk behaviors and outcomes among young men aged 18-24 years in rural India.

METHODS: This was a community-based cross-sectional survey conducted in the Ballabgarh block of Faridabad district, Haryana, India. Information regarding socio-demographic details, substance use, injury & violence, mental health and sexual behaviors were collected using a semi-structured interview schedule. Age adjusted prevalence estimates of behaviors and outcomes are computed along with 95% Confidence Intervals. Mediation analysis was carried out to examine relationships between socio-demographic variables, select behaviors and outcomes

reported in the study.

RESULTS: A total of 836 young men participated in the study, with mean (SD) age of 20.6 (1.9) years. The age-adjusted prevalence (with 95% Confidence Interval) for ever use of tobacco, alcohol, and other substances was 34.2% (33.9, 34.5), 23.4% (23.2, 23.6), and 4.5% (4.4, 4.5), respectively. Loneliness and suicidal thoughts were reported by 237 and 35 youth men with age adjusted prevalence as 28.6%, 95% CI: 28.4-28.8 and 4.3%, 95% CI: 4.23-4.31, respectively. A total of 330 young men met serious injury in past one year (prevalence 39.3%, 95%CI: 39.01-39.67). Almost one-third of men (prevalence 30.6%, 95%CI: 30.34-30.85) had engaged in pre-marital sexual intercourse. Current substance use was found to be significant mediator for associations with socio-demographic variables studied for dependent variables viz. pre-marital sexual intercourse and serious injury. **CONCLUSION:** High prevalence of various risk behaviors and outcomes was found in young men aged 18-24 years in our rural setting. It is imperative that multi-component health intervention package be rolled out to address these.

DOI: 10.1371/journal.pone.0220285

PMCID: PMC6662032

PMID: 31348808

135: 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

136: Mann M, Kumar S, Chauhan SS, Bhatla N, Kumar S, Bakhshi S, Gupta R, Sharma A, Kumar L. Correction: PARP-1 inhibitor modulate \hat{I}^2 -catenin signaling to enhance cisplatin sensitivity in cancer cervix. *Oncotarget.* 2019 Jul 30;10(46):4802. doi: 10.18632/oncotarget.27101. eCollection 2019 Jul 30. PubMed PMID: 31413820; PubMed Central PMCID: PMC6677665.

137: Mann M, Kumar S, Sharma A, Chauhan SS, Bhatla N, Kumar S, Bakhshi S, Gupta R, Kumar L. PARP-1 inhibitor modulate β^2 -catenin signaling to enhance cisplatin sensitivity in cancer cervix. *Oncotarget*. 2019 Jul 2;10(42):4262-4275. doi: 10.18632/oncotarget.27008. eCollection 2019 Jul 2. Erratum in: *Oncotarget*. 2019 Jul 30;10(46):4802. PubMed PMID: 31303961; PubMed Central PMCID: PMC6611509.

Cisplatin is a keystone for treatment of both recurring and locally advanced cervical cancer. However toxic side effects and acquired resistance limits its efficacy. Enhanced DNA repair is one of the mechanisms through which cancer cells acquire cisplatin resistance. Inhibitors of PARP, which is a DNA damage repair enzyme, have been approved for use in BRCA mutated cancers like breast and ovary cancer. However little is known about the therapeutic efficacy of PARP inhibitors in cervical cancer, either as a single agent or in combination with cisplatin. We hypothesized that PARP-1 inhibition might improve the sensitivity of cervical cancer cells to cisplatin by diminishing DNA repair. To ascertain this, we determined effect of PARP-1 inhibition on cisplatin cytotoxicity in HeLa and SiHa cell lines. Combination of cisplatin with PJ34, a phenanthridinone-derived PARP-1 inhibitor, augmented cisplatin toxicity in vitro by decreasing cell proliferation, enhancing cell cycle block and cell death, and decreasing invasion and metastasis, when compared with either of the single agent alone. We further show that PARP-1 inhibition inhibited β -catenin signaling and its downstream components such as c-Myc, cyclin D1 and MMPs indicating a possible link between single strand base damage repair and WNT signaling. In conclusion, PARP-1 inhibition might augment cisplatin cytotoxicity in cervical cancer cells by modulating β -catenin signaling pathway. Combining PARP-1 inhibitors with cisplatin might be a promising approach to overcome cisplatin resistance and to achieve a better therapeutic effect.

DOI: 10.18632/oncotarget.27008

PMCID: PMC6611509

PMID: 31303961

138: Manoharan D, Bharati SJ, Yadav MK. A novel technique of ultrasound-guided glossopharyngeal nerve block to relieve cancer pain. *Saudi J Anaesth*. 2019 Jul-Sep;13(3):279-280. doi: 10.4103/sja.SJA_139_19. PubMed PMID: 31333392; PubMed Central PMCID: PMC6625289.

139: Mathew R, Rl B, Mohindra R. Modified Sequential Organ Failure Assessment score in the emergency department. *Emerg Med Australas*. 2019 Jul 25. doi: 10.1111/1742-6723.13359. [Epub ahead of print] PubMed PMID: 31347286.

140: Mattoo B, Tanwar S, Bhatia R, Tripathi M, Bhatia R. Repetitive transcranial magnetic stimulation in chronic tension-type headache: A pilot study. *Indian J Med Res*. 2019 Jul;150(1):73-80. doi: 10.4103/ijmr.IJMR_97_18. PubMed PMID: 31571632.

Background & objectives: Tension-type headache (TTH) is the most common type of primary headache disorder. Its chronic form is often the most ignored and challenging to treat. Transcranial magnetic stimulation (TMS) is a novel technique in the treatment of chronic pain. The aim of this pilot study was to explore the effect of low-frequency repetitive TMS (rTMS) on pain status in chronic TTH (CTTH) by subjective and objective pain assessment.

Methods: Patients (n=30) diagnosed with CTTH were randomized into rTMS (n=15) and placebo (n=15) groups in this study. Pre-intervention detailed history of patients was taken. Numerical Rating Scale (NRS) for Pain and questionnaires [Headache Impact Test-6 (HIT-6), McGill Pain Questionnaire, Pain Beliefs Questionnaire, Coping Strategies Questionnaire, State-Trait Anxiety Inventory

Test, Hamilton Rating Scale for Depression and WHO-Quality of Life Questionnaire-Brief version] were filled, and objective assessments such as nociceptive flexion reflex (NFR) and conditioned pain modulation were done. The tests were repeated after 20 sessions (5 days/week). In the rTMS group, 1200 pulses in eight trains of 150 pulses each were given at 1Hz over the right dorsolateral prefrontal cortex (RDLPFC). In the placebo group, the rTMS coil was placed such that magnetic stimulation did not reach the cortex.

Results: The NRS score decreased significantly ($P < 0.001$) and NFR thresholds increased significantly ($P = 0.011$) in the rTMS group when compared to placebo group.

Interpretation & conclusions: Subjective improvements in the NRS, HIT-6, McGill Present Pain Intensity, trait of anxiety and psychological pain beliefs were observed. The increase in the thresholds of NFR served as an objective marker for improvement in pain status. Further studies need to be done to confirm our preliminary findings.

DOI: 10.4103/ijmr.IJMR_97_18

PMID: 31571632

141: Meena J, Sinha A. Evaluation for Vesicoureteric Reflux Following Febrile Urinary Tract Infections. *Indian J Pediatr.* 2019 Sep;86(9):773-774. doi: 10.1007/s12098-019-03023-1. Epub 2019 Jul 6. PubMed PMID: 31280408.

142: Mian A, Kumari K, Kaushal S, Fazal F, Kodan P, Batra A, Kumar P, Baitha U, Jorwal P, Soneja M, Sharma MC, Biswas A. Fatal familial hemophagocytic lymphohistiocytosis with perforin gene (PRF1) mutation and EBV-associated T-cell lymphoproliferative disorder of the thyroid. *Autops Case Rep.* 2019 Jul 19;9(3):e2019101. doi: 10.4322/acr.2019.101. eCollection 2019 Jul-Sep. PubMed PMID: 31440481; PubMed Central PMCID: PMC6655852.

Familial hemophagocytic lymphohistiocytosis (FHL) is a rare fatal autosomal recessive disorder of immune dysregulation. The disease presents most commonly in the first year of life; however, symptomatic presentation throughout childhood and adulthood has also been identified. Biallelic mutation in the perforin gene is present in 20%-50% of all cases of FHL. Secondary hemophagocytic lymphohistiocytosis (HLH) in association with hematological malignancies is known; however, whether mutations in HLH-associated genes can be associated with FHL and hematolymphoid neoplasms is not well documented. Also, Epstein-Barr-virus- (EBV) positive systemic T-cell lymphoproliferative disease (SE-LPD) in the setting of FHL is not clearly understood. Here, we present the case of a young boy who presented with typical features of childhood FHL harboring the perforin gene (PRF1) mutation, and had SE-LPD diagnosed on autopsy, along with evidence of recent EBV infection. The patient expired due to progressive disease. Five siblings died in the second or third decade of life with undiagnosed disease. Genetic counseling was provided to the two surviving siblings and parents, but they could not afford genetic testing. One surviving sibling has intermittent fever and is on close follow-up for possible bone marrow transplantation.

DOI: 10.4322/acr.2019.101

PMCID: PMC6655852

PMID: 31440481

143: Mirza AU, Khan MS, Nami SAA, Kareem A, Rehman S, Bhat SA, Nishat N. Copper Oxide Nanomaterials Derived from *Zanthoxylum armatum* DC. and *Berberis lycium* Royle Plant Species: Characterization, Assessment of Free Radical Scavenging and Antibacterial Activity. *Chem Biodivers.* 2019 Aug;16(8):e1900145. doi: 10.1002/cbdv.201900145. Epub 2019 Jul 16. PubMed PMID: 31207044.

Copper oxide nanomaterials were synthesized by a facile sustainable biological method using two plant species (*Zanthoxylum armatum* DC. and *Berberis lycium* Royle). The formation of materials was confirmed by FT-IR, ATR, UV-visible, XRD, TEM, SEM, EDX, TGA and PL. The antibacterial activity was evaluated by agar well diffusion method to ascertain the efficacy of plant species extract and extract derived copper oxide nanomaterials against six Gram-positive bacteria namely *Staphylococcus aureus*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Corynebacterium diphtheriae*, *Corynebacterium xerosis*, *Bacillus cereus* and four Gram-negative bacteria such as *Klebsiella pneumonia*, *Escherichia coli*, *Pseudomonas aeruginosa* and *Proteus vulgaris* against the standard drug, Ciprofloxacin for Gram-positive and Gentamicin for Gram-negative bacteria, respectively. In both cases, copper oxide nanomaterials were found to be sensitive in all the bacterial species. Sensitivity of copper oxide nanomaterials shows an be higher as compared to plant species extract against different bacteria. Scavenging activity of plant extracts along with nanomaterials have been accessed using previously reported protocols employing ascorbic acid as standard. Scavenging activity of copper oxide nanomaterials shows an increase with increase in concentration. The biological activity (bactericidal and scavenging efficiency) of plant derived copper oxide nanomaterials revealed that these materials can be used as potent antimicrobial agent and DPPH scavengers in industrial as well as pharmacological fields.

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DOI: 10.1002/cbdv.201900145

PMID: 31207044 [Indexed for MEDLINE]

144: Misra P, Singh AK, Archana S, Lohiya A, Kant S. Relationship between body mass index and percentage of body fat, estimated by bio-electrical impedance among adult females in a rural community of North India: A cross-sectional study. *J Postgrad Med.* 2019 Jul-Sep;65(3):134-140. doi: 10.4103/jpgm.JPGM_218_18. PubMed PMID: 31169130; PubMed Central PMCID: PMC6659436.

Introduction: Body adiposity measured by percentage of body fat (BF%) is found to be better predictor of cardiovascular morbidity and mortality than body mass index (BMI). Limited information exists showing relationship between BMI and BF% in North Indian population.

Objectives: To study the relationship between BMI and BF% among North Indian adult females across various age strata and level of BMI.

Materials and Methods: This was a cross-sectional study conducted at Ballabgarh Health and Demographic Surveillance Site (HDSS) among randomly selected females. BMI using standard techniques and BF% using bioelectrical impedance analysis was estimated. Linear regression was performed using general linear model with BF% as dependent variable and BMI as main independent variable.

Results: Mean (± 2 SD) age of participants was 41.3 ± 15.7 years. Mean BMI (\pm SD) was $23.3 (\pm 4.6)$ kg/m², whereas mean fat mass (± 2 SD) and BF% ($\pm 95\%$ CI) was $19.2 (\pm 7.9)$ kg and $33.6 (\pm 6.9)\%$. BMI and BF% were highly correlated among obese ($r = 0.77$), whereas least correlated ($r = 0.32$) in underweight females. Across age strata, correlation between BMI and BF% was maximum in 18-35 years age group ($r = 0.95$), whereas least in females ≥ 56 years ($r = 0.67$). Age and BMI together predicted 73% of variability in BF% in hierarchical linear regression model.

Conclusions: In this population, we have found strong correlation between BMI and BF% particularly at higher level of BMI and in younger females. There is need to conduct more robust prospective longitudinal studies to assess BF%, which is a better predictor of cardiovascular morbidity and mortality.

DOI: 10.4103/jpgm.JPGM_218_18

PMCID: PMC6659436
PMID: 31169130

145: Mohan A, Poulouse R, Ansari A, Madan K, Hadda V, Khilnani GC, Guleria R. Alterations in body composition in Indian patients with non-small cell lung cancer. *Lung India*. 2019 Jul-Aug;36(4):295-298. doi: 10.4103/lungindia.lungindia_369_17. PubMed PMID: 31290413; PubMed Central PMCID: PMC6625245.

Background: Alterations in body composition are common in cancer and may affect outcomes differentially based on geographical and ethnic factors. However, data in lung cancer are sparse and conflicting.

Methods: We compared the body composition of Indian lung cancer patients with healthy subjects using a retrospective review of all newly diagnosed patients with nonsmall cell lung cancer. Age- and sex-matched healthy controls were recruited prospectively. Basal metabolic rate (BMR), total body water (TBW), fat mass, and fat-free mass (FFM) were calculated by bioelectric impedance method. **Results:** A total of 256 patients (83.6% males) and 210 controls (81.4% males) were studied. The mean (standard deviation) age of patients was 54.5 (9.0) years, median smoking index was 598.2 (range, 0-2500), and median Karnofsky performance scale (KPS) was 80 (range, 40-100). Majority (54.7%) had Stage IV disease. All components of body composition, i.e., BMR, TBW, fat mass, and FFM, were significantly lower ($P < 0.01$) in patients as compared to controls. Body mass index, fat mass, FFM, and TBW were lower in older subjects with poorer KPS. The presence of metastasis or symptom duration did not affect body composition. **Conclusion:** These results indicate that Indian patients with lung cancer have altered body composition which declines with increasing age and worsening performance status.

DOI: 10.4103/lungindia.lungindia_369_17
PMCID: PMC6625245
PMID: 31290413

146: Mohta M, Garg A, Chilkoti GT, Malhotra RK. A randomised controlled trial of phenylephrine and noradrenaline boluses for treatment of postspinal hypotension during elective caesarean section. *Anaesthesia*. 2019 Jul;74(7):850-855. doi: 10.1111/anae.14675. Epub 2019 May 1. PubMed PMID: 31044424.

Phenylephrine is currently the vasopressor of choice during elective caesarean section, but it can cause reflex bradycardia. Noradrenaline, a potent α -agonist and weak β -agonist, may be associated with a lower incidence of bradycardia. However, comparative information is limited. This double-blind randomised controlled trial compared the effects of 100 μ g phenylephrine and 5 μ g noradrenaline administered as boluses for the treatment of postspinal hypotension during elective caesarean section in women with an uncomplicated singleton pregnancy. Hypotension was defined as a decrease of $\geq 20\%$ from baseline systolic arterial pressure, or an absolute value < 100 mmHg. Ninety women were included in the study. The primary outcome was the incidence of maternal bradycardia < 60 beats.min⁻¹. There was no difference in the incidence of bradycardia (37.8% with phenylephrine vs. 22.2% with noradrenaline; $p = 0.167$), number of hypotensive episodes, number of boluses required to treat the first hypotensive episode or reactive hypertension. The total number of boluses used was higher in the phenylephrine group ($p = 0.01$). Maternal heart rate at 1 min after vasopressor administration was non-significantly lower using phenylephrine vs. noradrenaline ($p = 0.034$, considering $p < 0.01$ as statistically significant). The umbilical artery pH was higher using phenylephrine than with noradrenaline ($p = 0.034$). In conclusion, both vasopressors reversed postspinal hypotension without a statistically significant difference in maternal bradycardia. However,

in view of the lower umbilical artery pH when using noradrenaline, further research is warranted to study its placental transfer and fetal metabolic effects.

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DOI: 10.1111/anae.14675

PMID: 31044424 [Indexed for MEDLINE]

147: Mondal D, Julka PK, Sharma DN, Laviraj MA, Jana M, Kamal VK, Deo SVS, Guleria R, Rath GK. Dual partial arc volumetric-modulated arc therapy: The game changer for accelerated hypofractionated whole-breast radiotherapy with simultaneous integrated tumor cavity boost in early breast cancer - A comparative dosimetric study with single partial arc volumetric-modulated arc therapy. *J Cancer Res Ther.* 2019 Jul-Sep;15(5):1005-1010. doi: 10.4103/jcrt.JCRT_922_17. PubMed PMID: 31603102.

Introduction: In a previous study, we demonstrated clinical and dosimetric feasibility of single partial arc volumetric modulated arc therapy (VMAT) for accelerated hypofractionated whole breast radiotherapy with simultaneous integrated boost (SIB) to lumpectomy cavity for early breast cancer. In this dosimetric study, we compared dual partial arcs versus single arc.

Patients and Methods: Fifteen consecutive patients for treatment with hypofractionated accelerated radiotherapy with SIB using VMAT were planned with single partial arc in an earlier study, initial result of which is published elsewhere. The comparative dosimetric plan was created using two partial arcs. Skewness and kurtosis test, Paired Student's t-test, and Wilcoxon signed-rank test were applied for statistical analysis. $P < 0.05$ was considered statistically significant.

Results: Most planning targets are better achieved with dual arc technique. Coverage of planning target volume (PTV) whole breast (PTVWB) and PTV lumpectomy cavity (PTVBOOST) was significantly improved with dual partial arc without significant difference in conformity index and homogeneity index. Dual arc improved dosimetric parameter significantly. Mean dose (Dmean) and maximum dose (Dmax) of whole breast PTV as well as Dmax of PTVBOOST; ipsilateral and contralateral lung Dmean, Dmax, 5 Gy volume (V5); contralateral lung Dmean, Dmax, V5; Heart V25 and V18; Dmean of 5 mm thickness skin; Dmean and Dmax of ribs; and Dmean and Dmax of contralateral breast were improved with dual arc.

Conclusion: This is first of its kind study establishing the advantage of dual partial arcs in the current context. Dual partial arcs improved dosimetry over single partial arc. Significant dose reduction can be achieved for multiple crucial organs at risk.

DOI: 10.4103/jcrt.JCRT_922_17

PMID: 31603102

148: Moresky RT, Razzak J, Reynolds T, Wallis LA, Wachira BW, Nyirenda M, Carlo WA, Lin J, Patel S, Bhoi S, Risko N, Wendle LA, Calvello Hynes EJ; National Institute of Health Fogarty International Center convened the Collaborative on Enhancing Emergency Care Research in LMICs (CLEER) . Advancing research on emergency care systems in low-income and middle-income countries: ensuring high-quality care delivery systems. *BMJ Glob Health.* 2019 Jul 29;4(Suppl 6):e001265. doi: 10.1136/bmjgh-2018-001265. eCollection 2019. Review. PubMed PMID: 31406599; PubMed Central PMCID: PMC6666806.

Emergency care systems (ECS) address a wide range of acute conditions, including emergent conditions from communicable diseases, non-communicable diseases, pregnancy and injury. Together, ECS represent an area of great potential for

reducing morbidity and mortality in low-income and middle-income countries (LMICs). It is estimated that up to 54% of annual deaths in LMICs could be addressed by improved prehospital and facility-based emergency care. Research is needed to identify strategies for enhancing ECS to optimise prevention and treatment of conditions presenting in this context, yet significant gaps persist in defining critical research questions for ECS studies in LMICs. The Collaborative on Enhancing Emergency Care Research in LMICs seeks to promote research that improves immediate and long-term outcomes for clients and populations with emergent conditions. The objective of this paper is to describe systems approaches and research strategies for ECS in LMICs, elucidate priority research questions and methodology, and present a selection of studies addressing the operational, implementation, policy and health systems domains of health systems research as an approach to studying ECS. Finally, we briefly discuss limitations and the next steps in developing ECS-oriented interventions and research.

DOI: 10.1136/bmjgh-2018-001265

PMCID: PMC6666806

PMID: 31406599

149: Muvalia G, Jamshed N, Sinha TP, Bhoi S. Kite-string injuries: A case series. *Int J Crit Illn Inj Sci*. 2019 Jul-Sep;9(3):147-150. doi: 10.4103/IJCIIS.IJCIIS_44_19. Epub 2019 Sep 30. PubMed PMID: 31620355; PubMed Central PMCID: PMC6792401.

Kites are very popular in India. Over the years, both kite-flying and kite-making skills have evolved. The conventional cotton threads that were used as kite string (manja) have been replaced by much cheaper and stronger Chinese manja, which is based on nonbiodegradable synthetic fibers. It is hard to break and has caused a sudden surge in dangerous kite string-related injuries. There are a lot of injuries usually sustained by kite-flyers, two-wheeler riders, and pedestrians. Very few case reports and case series have shown injuries related to flying a kite, which range from laceration of hand to fatal throat injuries. Secondary impact injuries attributed to kite string (manja) are rarely reported in the medical literature. We present a series of four cases with special emphasis on a patient, who sustained secondary impact injury with fatal outcome. Emergency physician should know that these trivial looking injuries can be associated with significant neck injuries. They can also cause significant secondary impact injuries.

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DOI: 10.4103/IJCIIS.IJCIIS_44_19

PMCID: PMC6792401

PMID: 31620355

150: Nag TC, Maurya M, Roy TS. Age-related changes of the human retinal vessels: Possible involvement of lipid peroxidation. *Ann Anat*. 2019 Nov;226:35-47. doi: 10.1016/j.aanat.2019.06.007. Epub 2019 Jul 19. PubMed PMID: 31330304.

BACKGROUND: Aging of the human retina is accompanied by oxidative stress that exerts profound changes in the retinal neurons. It is unknown if oxidative stress influences the cellular components of the retinal vessels in some ways.

METHODS: We examined changes in retinal vessels in human donor eyes (age: 35-94 years; N=18) by light and transmission electron microscopy, TUNEL and immunohistochemistry for biomarkers of vascular smooth muscle cells (SMC; actin), oxidative stress (4-hydroxy 2-nonenal [HNE] and nitrotyrosine), microglia (Iba-1) and vessels (isolectin B4).

RESULTS: The earliest changes in the endothelium and pericytes of capillaries are apparent from the seventh decade. With aging, there is clear loss of organelles and cytoplasmic filaments, and a progressive thickening of the endothelial and pericyte basal lamina. Loss of filaments, accumulation of lipofuscin and autophagic vacuoles are significant events in aging pericytes and SMC. Actin immunolabelling reveals discontinuity in arterial SMC layers during eighth decade, indicating partial degeneration of SMC. This is followed by hyalinization, with degeneration of the endothelium and SMC in arteries and arterioles of the nerve fibre layer (NFL) and ganglion cell layer in ninth decade. Iba-1 positive microglia were in close contact with the damaged vessels in inner retina, and their cytoplasm was rich in lysosomes. HNE immunoreactivity, but not of nitrotyrosine, was detected in aged vessels from seventh decade onwards, suggesting that lipid peroxidation is a major problem of aged vessels. However, TUNEL positivity seen during this period was limited to few arteries and venules of NFL.

CONCLUSION: This study shows prominent age-related alterations of the pericytes and SMC of retinal vessels. These changes may limit the energy supply to the neurons and be responsible for age-related loss of neurons of the inner retina.

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DOI: 10.1016/j.aanat.2019.06.007

PMID: 31330304

151: Nagarajappa A, Kaur M, Samanta A, Tyagi A. Endotracheal tube fixation: Still a dilemma. *J Anaesthesiol Clin Pharmacol*. 2019 Jul-Sep;35(3):400-401. doi: 10.4103/joacp.JOACP_92_19. PubMed PMID: 31543593; PubMed Central PMCID: PMC6747992.

152: Nagpal R, Maharana PK, Roop P, Murthy S, Rapuano CJ, Titiyal JS, Vajpayee RB, Sharma N. Phototherapeutic Keratectomy. *Surv Ophthalmol*. 2019 Jul 12. pii: S0039-6257(18)30323-0. doi: 10.1016/j.survophthal.2019.07.002. [Epub ahead of print] PubMed PMID: 31306672.

Phototherapeutic keratectomy (PTK) is an excimer laser based surgical procedure widely performed by corneal surgeons for treating anterior corneal stromal pathologies. PTK helps by ablating the corneal stroma, thereby improving corneal clarity and smoothing the surface. Transient discomfort and induced hyperopia from corneal flattening are the immediate post-operative concerns. The long term course is often marked by the recurrence of original corneal pathology and corneal haze formation. PTK, however, allows for repeat stromal ablation for managing recurrences, as the corneal thickness permits, without affecting the outcome of future keratoplasty. Adjunctive methods such as topical mitomycin C may be additionally employed to reduce recurrence rates. Also, various masking agents such as carboxymethyl cellulose, sodium hyaluronate and dextran are used in eyes with irregular corneal surface to allow for uniform stromal ablation. Overall, PTK has provided corneal surgeons an additional surgical tool, particularly those residing in developing nations where the availability of donor corneal tissue is an important limiting factor.

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DOI: 10.1016/j.survophthal.2019.07.002

PMID: 31306672

153: Nair RR, Chauhan R, Harankhedkar S, Mahapatra M, Saxena R. Imatinib-induced platelet dysfunction and hypofibrinogenemia in chronic myeloid leukemia. *Blood*

Coagul Fibrinolysis. 2019 Jul;30(5):246-248. doi: 10.1097/MBC.0000000000000817. PubMed PMID: 31310595.

: We aim to present a case of chronic myeloid leukemia (CML) in chronic phase, in major molecular response for 5 years of treatment with imatinib 400mg OD. He presented with recurrent melena for one and a half years, requiring 11U of packed red cell transfusion since then. Various causes of bleeding in CML, such as thrombocytopenia, disease progression related to accelerated phase/blast crisis or imatinib-induced cytopenia were ruled out. His investigations revealed reduced plasma fibrinogen (150mg/ml; range 200-450mg/ml). The platelet count, prothrombin time, activated partial thromboplastin time and thrombin time were $314 \times 10^9/l$, 13s (control 13s), 31s (control 30s) and 16s (control 16s), respectively. Platelet aggregometry revealed normal platelet aggregation with adenosine-diphosphate, epinephrine and ristocetin, and reduced response with arachidonic acid (30%). Bleeding subsided with transfusion of fresh frozen plasma. Moreover, his medication was changed to nilotinib 300mg BD. Thereafter, his subsequent repeat investigations were normal. Platelet function defects in CML both pretherapy and on tyrosine kinase inhibitors has been described in the literature. However, concomitant hypofibrinogenemia has rarely been reported.

DOI: 10.1097/MBC.0000000000000817
PMID: 31310595

154: Nakra T, Nambirajan A, Guleria P, Phulwara RH, Jain D. Insulinoma-associated protein 1 is a robust nuclear immunostain for the diagnosis of small cell lung carcinoma in cytology smears. *Cancer Cytopathol*. 2019 Aug;127(8):539-548. doi: 10.1002/cncy.22164. Epub 2019 Jul 25. PubMed PMID: 31343851.

BACKGROUND: In a significant percentage of patients with small cell lung carcinoma (SCLC), cytology samples represent the only source of tumor tissue. Ancillary immunocytochemistry (ICC) for neuroendocrine markers is an important adjunct for the diagnosis of SCLC. Insulinoma-associated protein 1 (INSM1) is a novel neuroendocrine marker proposed as an economical single-marker alternative to the traditional 3-marker panel of chromogranin, synaptophysin, and CD56. To the authors' knowledge, limited studies have evaluated INSM1 immunohistochemistry (IHC) for the diagnosis of SCLC and reported high sensitivities and specificities. The objective of the current study was to evaluate the sensitivity and specificity of INSM1 ICC on direct smears (DS) from patients with SCLC in comparison with IHC on small biopsies (SBs).

METHODS: All available DS and SBs from patients with SCLC who were diagnosed over the previous year were retrieved. Immunostaining for INSM1 was performed on alcohol-fixed DS and formalin-fixed SBs wherever available. A total of 10 DS and SBs from patients with non-small cell lung carcinoma were included for comparison. Nuclear staining for INSM1 in $\geq 1\%$ tumor cells was interpreted as positive.

RESULTS: Among a total of 60 patients with SCLC who were included in the current study, a total of 37 underwent INSM1 IHC on SBs and 36 underwent INSM1 ICC on DS. ICC was noninterpretable in 3 DS due to necrosis. The sensitivity of INSM1 IHC was 97% (36 of 37 cases) whereas the sensitivity of INSM1 ICC was 91% (30 of 33 cases) for the diagnosis of SCLC. Among matched IHC and ICC results available for 11 patients, 91% of cases (10 of 11 patients) demonstrated concordant IHC-ICC staining. All cases of non-small cell lung carcinoma were negative for INSM1 (100% specificity).

CONCLUSIONS: INSM1 appears to be a robust and reliable ICC marker for the confirmation of SCLC diagnosis on cytology smears.

DOI: 10.1002/cncy.22164
PMID: 31343851

155: Namdev P, Dar HY, Srivastava RK, Mondal R, Anupam R. Induction of T7 Promoter at Higher Temperatures May Be Counterproductive. *Indian J Clin Biochem.* 2019 Jul;34(3):357-360. doi: 10.1007/s12291-019-0813-y. Epub 2019 Feb 8. PubMed PMID: 31391729; PubMed Central PMCID: PMC6660524.

Bacterial expression of recombinant proteins is the most popular and convenient method for obtaining large quantities of pure protein. The induction of T7 promoter with isopropyl- β -d-thiogalactopyranoside (IPTG) is widely used for expression of large quantities of proteins in *Escherichia coli*. It has been reported that basic T7 promoter is leaky and expresses cloned genes without induction. The effect of T7 promoter induction on expression of proteins at different temperature using flow cytometry has not yet been investigated. Green fluorescent protein (GFP) as a non-peptide tag can be used for protein solubility screening and for high-throughput optimization of expression conditions using flow cytometry. Therefore, flow cytometry was used to study the effect of induction on the expression of T7 promoter driven emerald GFP (emGFP) at various temperatures. We noticed that percentage of emGFP positive cells decreased instead of increasing upon induction at higher temperatures. Western blot analysis confirmed that the amount of total and soluble emGFP decreased in induced cells compared uninduced cells at higher temperatures. Our results indicate that induction of basic T7 promoter at higher temperature may not necessarily increase protein expression. While using a basic T7 promoter it is highly recommended to analyze the effect of induction on protein expression at various temperatures.

DOI: 10.1007/s12291-019-0813-y
PMCID: PMC6660524 [Available on 2020-07-01]
PMID: 31391729

156: Narendra PL, Hegde HV, Chandrashekharappa K, Tore VV, Endigeri P, Boodadi M, Talikoti DG, Khan MA. Survey of Surgeons Attitude to Local Anesthetics for Postoperative Pain Relief. *Anesth Essays Res.* 2019 Jul-Sep;13(3):452-464. doi: 10.4103/aer.AER_117_19. PubMed PMID: 31602061; PubMed Central PMCID: PMC6775849.

Background: There is no ideal postoperative pain management. Simple surgeon-delivered local anesthetic (LA) techniques such as wound infiltration and regional nerve blocks can play a significant role in the improvement of postoperative pain relief.

Settings and Design: Administered paper questionnaires to delegates attending surgical society conferences.

Methods: A 15-point questionnaire was administered to surgical delegates attending general surgery, orthopedic and gynecological conferences at different locations.

Results: Response rate was 65.26%. 33% of surgeons used LA regularly, 31% occasionally, and 36% never used LA for postoperative analgesia. 50% of all surgeons used lignocaine for local anesthesia ($P < 0.0001$) and infiltration (65% of all surgeons) was the most common method ($P < 0.0001$). Only 30% surgeons knew the correct duration of action of bupivacaine infiltration ($P < 0.0001$) and only 4% surgeons knew that LAs are antimicrobial ($P < 0.0001$). 53% of orthopedic surgeons used combination of lignocaine and bupivacaine, while 46% of general and 73% gynecologists surgeons used lignocaine more commonly. Only <5% of all surgeons had used long-acting liposomal bupivacaine and almost 40% more were willing to use the liposomal LA drug only if more evidence is available.

Conclusions: Although majority of surgeons were aware of the benefits of LA use for postoperative pain relief, reluctance, lack of knowledge of LA drugs and

methods of LA use and fear of infection and wound healing are barriers for effective use of LA drugs for postoperative pain relief. Attending anesthesiologists must develop methods in the operating room to create awareness about the effectiveness of LA use for postoperative pain relief. Single-use vials or ampules of LA must be encouraged to LA use for postoperative analgesia, especially in the third-world countries.

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DOI: 10.4103/aer.AER_117_19

PMCID: PMC6775849

PMID: 31602061

157: Nayyar R, Uppal B, Krishna A. Complete duplicated hindgut anomaly presenting in adolescence: Six Ostia in perineum. *Indian J Urol.* 2019 Jul-Sep;35(3):234-236. doi: 10.4103/iju.IJU_264_18. PubMed PMID: 31367078; PubMed Central PMCID: PMC6639991.

A 17-year-girl presenting with features of intestinal obstruction and managed with colostomy was referred for continuing to pass feces per anus despite a functioning colostomy. She was diagnosed with a rare congenital anomaly with duplication of urethra, bladder, vagina, uterus, anus, and distal colon; all openings close together in the perineum. Excision of the obstructed duplicated colon was done. The anomaly and its features are discussed with review of literature.

DOI: 10.4103/iju.IJU_264_18

PMCID: PMC6639991

PMID: 31367078

158: Neyaz O, Sumila L, Nanda S, Wadhwa S. Effectiveness of Hatha Yoga Versus Conventional Therapeutic Exercises for Chronic Nonspecific Low-Back Pain. *J Altern Complement Med.* 2019 Sep;25(9):938-945. doi: 10.1089/acm.2019.0140. Epub 2019 Jul 26. PubMed PMID: 31347920.

Objective: To determine whether the effectiveness of Hatha yoga therapy is comparable to conventional therapeutic exercises (CTEs) for reducing back pain intensity and back-related dysfunction in patients with chronic nonspecific low-back pain (CNLBP). **Design:** The study was a prospective randomized comparative trial, divided into two phases: an initial 6-weekly supervised intervention period followed by a 6-week follow-up period. **Settings:** This study was conducted at Department of Physical Medicine and Rehabilitation and Centre for Integrative Medicine and Research of a tertiary care hospital. **Subjects:** Patients between 18 and 55 years of age with complaint of CNLBP persisting ≥ 12 weeks with pain rating ≥ 4 on a numerical rating scale (0-10). **Intervention:** A total of six standardized 35-min weekly Hatha yoga sessions (yoga group) and similarly 35-min weekly sessions of CTEs (CTE group), designed for people with CNLBP unaccustomed to structured yoga or CTE program. **Participants** were asked to practice on nonclass days at home. **Outcome measures:** The primary outcome measures were Defense and Veterans Pain Rating Scale (DVPRS) (0-10) and 24-point Roland Morris Disability Questionnaire (RDQ). **Secondary outcomes** were pain medication usage per week and postintervention Perceived recovery (Likert seven-point scale) of back-related dysfunction. **Outcomes** were recorded at the baseline, 6-week follow-up, and 12-week follow-up. **Results:** Seventy subjects were randomized to either yoga (n=35) or CTE group (n=35). Data were analyzed using intention-to-treat, with last observation carried forward. Both yoga and the CTE group have shown significant improvement in back pain intensity and back-related dysfunction within both the groups at 6- and 12-week follow-ups compared to baseline. No statistically significant differences in the pain intensity (DVPRS; at 6 weeks:

n=35, difference of medians 1.0, 95% confidence interval [-5.3 to 3.0], p=0.5; at 12 weeks: n=35, 0.0 [-4.2 to 5.0], 0.7) and back-related dysfunction (RDQ; at 6 weeks: n=35, 1.0 [-9.6 to 10.6], 0.4; at 12 weeks: n=35, 0.0 [-8.8 to 10.6], 0.3) were noted between two groups. Improvements in pill consumption and perceived recovery were also comparable between the groups. Conclusion: Yoga provided similar improvement compared with CTEs, in patients with CNLBP.

DOI: 10.1089/acm.2019.0140

PMID: 31347920

159: Niyas VKM, Balasubramanian P, Thulaseedharan NK. Trichuris trichiura. QJM. 2019 Jul 1;112(7):537. doi: 10.1093/qjmed/hcy303. PubMed PMID: 30597113.

160: Ooi CJ, Hilmi I, Banerjee R, Chuah SW, Ng SC, Wei SC, Makharia GK, Pisespongsa P, Chen MH, Ran ZH, Ye BD, Park DI, Ling KL, Ong D, Ahuja V, Goh KL, Sollano J, Lim WC, Leung WK, Ali RAR, Wu DC, Ong E, Mustaffa N, Limsrivilai J, Hisamatsu T, Yang SK, Ouyang Q, Geary R, De Silva JH, Rerknimitr R, Simadibrata M, Abdullah M, Leong RW; Asia Pacific Association of Gastroenterology (APAGE) Working Group on Inflammatory Bowel Disease and Asian Organization for Crohn's and Colitis. Best practices on immunomodulators and biologic agents for ulcerative colitis and Crohn's disease in Asia. Intest Res. 2019 Jul;17(3):285-310. doi: 10.5217/ir.2019.00026. Epub 2019 May 31. Review. PubMed PMID: 31146509; PubMed Central PMCID: PMC6667368.

The Asia-Pacific Working Group on inflammatory bowel disease (IBD) was established in Cebu, Philippines, under the auspices of the Asian Pacific Association of Gastroenterology with the goal of improving IBD care in Asia. This consensus is carried out in collaboration with Asian Organization for Crohn's and Colitis. With biologic agents and biosimilars becoming more established, it is necessary to conduct a review on existing literature and establish a consensus on when and how to introduce biologic agents and biosimilars in the conjunction with conventional treatments for ulcerative colitis (UC) and Crohn's disease (CD) in Asia. These statements also address how pharmacogenetics influence the treatments of UC and CD and provide guidance on response monitoring and strategies to restore loss of response. Finally, the review includes statements on how to manage treatment alongside possible hepatitis B and tuberculosis infections, both common in Asia. These statements have been prepared and voted upon by members of IBD workgroup employing the modified Delphi process. These statements do not intend to be all-encompassing and future revisions are likely as new data continue to emerge.

DOI: 10.5217/ir.2019.00026

PMCID: PMC6667368

PMID: 31146509

161: Ooi CJ, Hilmi I, Banerjee R, Chuah SW, Ng SC, Wei SC, Makharia GK, Pisespongsa P, Chen MH, Ran ZH, Ye BD, Park DI, Ling KL, Ong D, Ahuja V, Goh KL, Sollano J, Lim WC, Leung WK, Ali RAR, Wu DC, Ong E, Mustaffa N, Limsrivilai J, Hisamatsu T, Yang SK, Ouyang Q, Geary R, De Silva JH, Rerknimitr R, Simadibrata M, Abdullah M, Leong RW; Asia-Pacific Association of Gastroenterology (APAGE) Working Group on Inflammatory Bowel Disease and Asian Organization for Crohn's and Colitis. Best practices on immunomodulators and biologic agents for ulcerative colitis and Crohn's disease in Asia. J Gastroenterol Hepatol. 2019 Aug;34(8):1296-1315. doi: 10.1111/jgh.14648. Epub 2019 Jul 1. Review. PubMed PMID: 30848854.

The Asia-Pacific Working Group on Inflammatory Bowel Disease was established in Cebu, Philippines, under the auspices of the Asia-Pacific Association of Gastroenterology with the goal of improving inflammatory bowel disease care in Asia. This consensus is carried out in collaboration with Asian Organization for Crohn's and Colitis. With biologic agents and biosimilars becoming more established, it is necessary to conduct a review on existing literature and establish a consensus on when and how to introduce biologic agents and biosimilars in conjunction with conventional treatments for ulcerative colitis and Crohn's disease in Asia. These statements also address how pharmacogenetics influences the treatments of ulcerative colitis and Crohn's disease and provides guidance on response monitoring and strategies to restore loss of response. Finally, the review includes statements on how to manage treatment alongside possible hepatitis B and tuberculosis infections, both common in Asia. These statements have been prepared and voted upon by members of inflammatory bowel disease workgroup employing the modified Delphi process. These statements do not intend to be all-encompassing, and future revisions are likely as new data continue to emerge.

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DOI: 10.1111/jgh.14648

PMID: 30848854

162: Pachisia AV, Sharma KR, Dali JS, Arya M, Pangasa N, Kumar R. Comparative evaluation of laryngeal view and intubating conditions in two laryngoscopy positions-attained by conventional 7 cm head raise and that attained by horizontal alignment of external auditory meatus - sternal notch line - using an inflatable pillow - A prospective randomised cross-over trial. *J Anaesthesiol Clin Pharmacol*. 2019 Jul-Sep;35(3):312-317. doi: 10.4103/joacp.JOACP_35_19. PubMed PMID: 31543577; PubMed Central PMCID: PMC6747989.

Background and Aims: We compared the laryngoscopy position attained by a 7-cm-high pillow (Sniffing position-SP) with that attained by horizontal alignment of external auditory meatus-sternal notch (AM-S) line-using variable height inflatable pillow.

Material and Methods: This prospective-randomised-cross-over study included 50 patients in each group. Group-AM-S: A 7 cm uncompressible pillow was used for attaining first laryngoscopy position, followed by horizontal alignment of external auditory meatus-sternal notch (AM-S) line-using an inflatable pillow for attaining second laryngoscopy position followed by intubation. Group-SP: Horizontal alignment of external auditory meatus-sternal notch (AM-S) line-was done using an inflatable pillow for attaining first laryngoscopy position, followed by using 7 cm uncompressible pillow for second laryngoscopy position followed by intubation. The CL-grade, Intubation Difficulty Score (IDS) and time to intubation were compared in both positions. The head raise (in cm) required for attaining AM-S alignment was noted.

Results: CL-grade-I was obtained in significantly larger number of patients with AM-S alignment position than with 7 cm head raise ($P = 0.004$). CL-grade-III was obtained in significantly lesser number of patients with AM-S alignment ($P = 0.002$). Mean IDS with AM-S alignment (1.18 ± 1.69) was significantly less than with 7cm head raise (2 ± 1.59 ; $P = 0.007$) and time to intubation with AM-S alignment (17.33 ± 4.52 s) was significantly less than that with 7cm head raise (18.94 ± 4.64 s; $P = 0.041$). The mean head rise required to achieve AM-S line alignment was 4.920 ± 1.460 cm.

Conclusion: External Auditory Meatus-Sternal notch (AM-S) line alignment provides better laryngeal view, better intubating conditions and requires lesser time to intubate as compared to a conventional 7-cm-head raise. The size of pillow used

for head raise should be individualised.

DOI: 10.4103/joacp.JOACP_35_19

PMCID: PMC6747989

PMID: 31543577

163: Padhy SK, Takkar B, Chawla R, Kumar A. Artificial intelligence in diabetic retinopathy: A natural step to the future. *Indian J Ophthalmol*. 2019 Jul;67(7):1004-1009. doi: 10.4103/ijo.IJO_1989_18. Review. PubMed PMID: 31238395; PubMed Central PMCID: PMC6611318.

Use of artificial intelligence in medicine in an evolving technology which holds promise for mass screening and perhaps may even help in establishing an accurate diagnosis. The ability of complex computing is to perform pattern recognition by creating complex relationships based on input data and then comparing it with performance standards is a big step. Diabetic retinopathy is an ever-increasing problem. Early screening and timely treatment of the same can reduce the burden of sight threatening retinopathy. Any tool which can aid in quick screening of this disorder and minimize requirement of trained human resource for the same would probably be a boon for patients and ophthalmologists. In this review we discuss the current status of use of artificial intelligence in diabetic retinopathy and few other common retinal disorders.

DOI: 10.4103/ijo.IJO_1989_18

PMCID: PMC6611318

PMID: 31238395 [Indexed for MEDLINE]

164: Pal Singh Balhara Y, Singh S. Online course on basics of management of behavioral addictions involving use of internet: Observations from the first batch of participants. *Asian J Psychiatr*. 2019 Jul 5;44:1-3. doi: 10.1016/j.ajp.2019.07.013. [Epub ahead of print] PubMed PMID: 31299581.

Problematic internet use has been reported to be high among school students. An online course was developed with an aim to strengthen the capacity of school teachers and counsellors on early identification, detection and intervention for behavioral addictions involving use of internet. The current report presents the observation from the first batch of participants of this course. Of the 28 teachers and counselors who expressed interest by enrollment in the course, a total of 15 participants provided both the pre and post course evaluation forms. The preliminary findings suggest that the online course is feasible, acceptable and effective in strengthening the capacity of school teachers and counsellors on behavioral addictions involving use of internet.

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DOI: 10.1016/j.ajp.2019.07.013

PMID: 31299581

165: Paliwal S, Chaudhuri R, Agrawal A, Mohanty S. Correction to: Human tissue-specific MSCs demonstrate differential mitochondria transfer abilities that may determine their regenerative abilities. *Stem Cell Res Ther*. 2019 Jul 26;10(1):215. doi: 10.1186/s13287-019-1343-5. PubMed PMID: 31349788; PubMed Central PMCID: PMC6660688.

The original article [1] contains errors in Fig. 1. The authors noticed a potentially misleading aspect of the original article Fig. 1 where representative flow cytometry data for different panels were from different data sets and thus the gates were not in the same line. This may cause confusion to the readers who

attempt to compare panels and, thus the amended Fig. 1 shown ahead represents data from a single data set that is suitable for between panel comparisons.

DOI: 10.1186/s13287-019-1343-5
PMCID: PMC6660688
PMID: 31349788

166: Panda S, Sikka K, Singh V, Agarwal S, Kumar R, Thakar A, Sharma SC. Comprehensive Analysis of Factors Leading to Poor Performance in Prelingual Cochlear Implant Recipients. *Otol Neurotol.* 2019 Jul;40(6):754-760. doi: 10.1097/MAO.0000000000002237. PubMed PMID: 31135664.

OBJECTIVE: To comprehensively analyze the prognostic factors responsible for affecting outcomes following cochlear implantation in prelinguals.

STUDY DESIGN: Retrospective cohort study from June 2004 to November 2015.

SETTING: Tertiary care center.

PATIENTS: Patients who had undergone cochlear implantation during June 2004 to November 2015 for prelingual sensorineural hearing loss with a minimum follow-up of 2 years.

INTERVENTION: Patients were evaluated for the presence of 20 risk factors possibly influencing postimplantation outcomes using a questionnaire.

MAIN OUTCOME MEASURES: Assessment for speech and auditory function was done at the last follow-up with speech intelligibility ratings (SIR) and categories of auditory performance (CAP) scores, respectively.

RESULTS: One hundred fifty-one patients were included in this study. On univariate analysis for CAP, age at implantation, noncompliance to pre and postimplantation auditory and speech habilitation, poor parental motivation, socioeconomic status and literacy were found to be associated with lower scores ($p < 0.05$). Whereas, for SIR, additionally, attention deficit hyperactivity disorder and inner ear malformation were statistically significant negative predictors on univariate analysis. Finally, factors responsible for low CAP scores on multivariate analysis were poor parental literacy, poor socioeconomic status, irregular pre/postimplantation rehabilitation, and attention deficit hyperactivity disorder. While for SIR, additionally age at implantation was also a significant negative predictor. Increasing IQ and duration of implant use were associated with higher CAP (univariate) and SIR scores (univariate and multivariate) ($p < 0.05$).

CONCLUSION: We were able to demonstrate negative impact of higher age at implantation, minimal cognitive disorder, adverse parental/socioeconomic profile, and poor compliance to pre/postimplantation auditory verbal habilitation on auditory and speech outcomes.

DOI: 10.1097/MAO.0000000000002237
PMID: 31135664

167: Pandey NN, Sinha M, Rajagopal R, Sharma A, Kumar S. Deciphering normal and anomalous viscerio-atrial situs on multidetector CT angiography. *Br J Radiol.* 2019 Oct;92(1102):20190231. doi: 10.1259/bjr.20190231. Epub 2019 Jul 10. PubMed PMID: 31271542.

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 viscerotrial situs and cardiac position, using a third generation dual source CT scanner.

DOI: 10.1259/bjr.20190231

PMID: 31271542 [Indexed for MEDLINE]

168: Pandey NN, Shaw M, Kumar S. Congenital ostial atresia of right coronary artery: an exceedingly rare anomaly diagnosed on CT angiography. *BMJ Case Rep.* 2019 Jul 23;12(7). pii: e230377. doi: 10.1136/bcr-2019-230377. PubMed PMID: 31340949.

169: Pandey R, Biswas R, Halder A, Pandey D. Carcinoma buccal mucosa with left axillary lymph node metastasis: First reported case and review of the literature. *J Cancer Res Ther.* 2019 Jul-Sep;15(3):693-695. doi: 10.4103/jcrt.JCRT_49_18. PubMed PMID: 31169243.

Head-and-neck squamous cell carcinomas are tumors with propensity mostly for locoregional spread. The most frequent sites of metastasis include lung, bone, liver, adrenal, heart, and kidney. Distant metastasis to axillary lymph nodes from buccal mucosa cancer is extremely rare. To the authors' knowledge, this is the first case reported where a gentleman who was treated for carcinoma right buccal mucosa developed left axillary lymph node metastasis at 6th year of follow-up.

DOI: 10.4103/jcrt.JCRT_49_18

PMID: 31169243

170: Pangasa N, Prasad G, Singh G, Nair PR. Anaesthetic management of a child with pulmonary agenesis for laparoscopic inguinal hernia repair. *Indian J Anaesth.* 2019 Jul;63(7):604-605. doi: 10.4103/ija.IJA_167_19. PubMed PMID: 31391632; PubMed Central PMCID: PMC6644196.

171: Parmar A, Sharan P, Khandelwal SK, Agarwal K, Sharma U, Jagannathan NR. Brain neurochemistry in unmedicated obsessive-compulsive disorder patients and effects of 12-week escitalopram treatment: (1) H-magnetic resonance spectroscopy study. *Psychiatry Clin Neurosci.* 2019 Jul;73(7):386-393. doi: 10.1111/pcn.12850. Epub 2019 May 23. PubMed PMID: 30973183.

AIM: The purpose of this study was to examine treatment-related neurochemical changes in 28 unmedicated obsessive-compulsive disorder (OCD) patients using 1 H-magnetic resonance spectroscopy (1 H-MRS).

METHODS: We included subjects diagnosed with OCD (n =28), each with a total duration of illness of less than 5years, as a study group and age- and sex-matched healthy controls (n =26). The inclusion criteria for the OCD group were right-handed individuals aged 18years or older who had not been on any specific treatment for OCD for the last at least 8weeks and who had no other psychiatric comorbidity. A pre-post and case-control design was employed in which OCD patients underwent 1 H-MRS at baseline and 12weeks after treatment with escitalopram (n =21). Clinical assessment was carried out using a semi-structured pro forma Yale-Brown Obsessive Compulsive Scale and the World Health Organization Disability Assessment Scale 2.0 before and after treatment. Volume-localized 1 H-MRS was carried out with a 3-Tesla Philips MR scanner. **RESULTS:** Our data suggested higher levels of myoinositol (mI), total choline (tCho), and glutamate+glutamine (Glx) in the medial thalamus at pre-assessment in OCD subjects as compared to healthy controls and a significant reduction in tCho

and Glx after treatment in OCD subjects. The mI levels in the caudate nucleus and Glx levels in the anterior cingulate cortex were significantly correlated with disease severity on the Yale-Brown Obsessive Compulsive Scale.

CONCLUSION: Our study supports the hypothesis of a hyper-glutamnergic state (as suggested by increased Glx levels) and neurodegeneration (as suggested by increased tCho and mI in the thalamus) in cortico-striato-thalamocortical circuitry in OCD patients as suggested by previous studies using MRS as well as other functional imaging studies.

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DOI: 10.1111/pcn.12850

PMID: 30973183

172: Patra S, Senthilnathan G, Bhari N. Acrodermatitis enteropathica-like skin eruption with neonatal seizures in a child with biotinidase deficiency. *Clin Exp Dermatol*. 2019 Jul 19. doi: 10.1111/ced.14053. [Epub ahead of print] PubMed PMID: 31323123.

173: Paul SB, Acharya SK, Gamanagatti SR, Sreenivas V, Shalimar S, Gulati MS. Acetic acid versus radiofrequency ablation for the treatment of hepatocellular carcinoma: A randomized controlled trial. *Diagn Interv Imaging*. 2019 Jul 10. pii: S2211-5684(19)30164-0. doi: 10.1016/j.diii.2019.06.011. [Epub ahead of print] PubMed PMID: 31302075.

PURPOSE: The purpose of this prospective study was to compare the efficacy of percutaneous acetic acid (PAAI) to that of radiofrequency ablation (RFA) in the treatment of small (≤ 5 cm) hepatocellular carcinoma (HCC) using a randomized trial.

MATERIAL AND METHODS: Consecutive patients with small HCC underwent clinical, biochemical, and imaging evaluation. Those fulfilling the inclusion criteria (Child's A/B cirrhosis, less than 5 HCC nodules, HCC nodules ≤ 5 cm diameter, no extrahepatic disease, patent portal vein, normal coagulation profile with informed consent) were randomly assigned to receive RFA or PAAI. Tumor response and survival rate were estimated. Non-inferiority margin of 10% difference was taken for effectivity of PAAI compared to RFA.

RESULTS: Of the 86 patients screened, 55 patients with 67 HCC nodules were included. There were 40 men and 15 women with a mean age of 54.3 ± 10.5 (SD) years (range: 28-71 years). Of these, 26 patients had PAAI and 29 had RFA. The clinical, demographic and imaging profiles of the two groups were similar. Complete response was non-inferior to RFA [PAAI 75% and RFA 83.3%, difference 8.3% CI (-12.5% to 29.2%)]. Lower limit of this 95% CI (-12.5%) was lower than the 10% non-inferiority margin difference (8.3%). Survival rates were similar at 12 months (PAAI, 81.6% vs. RFA, 71.9%; $P=0.68$) and at 30 months (PAAI, 54.4% vs. RFA, 52%; $P=0.50$).

CONCLUSION: PAAI and RFA have similar efficacy in treating small HCC. PAAI could thus be a cost-effective alternative in situations where RFA is either unavailable or unaffordable.

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DOI: 10.1016/j.diii.2019.06.011

PMID: 31302075

174: Phulwara RH, Guleria P, Iyer VK, Bakhshi S, Seth R, Mridha AR, Jain D, Mallick S, Arava SK, Agarwal S, Kaushal S, Yadav R, Mathur SR. Cytological

diagnosis of Langerhans cell histiocytosis: A series of 47 cases. *Cytopathology*. 2019 Jul;30(4):413-418. doi: 10.1111/cyt.12709. Epub 2019 May 23. PubMed PMID: 31017324.

OBJECTIVE: Langerhans cell histiocytosis (LCH) is a rare disease affecting predominantly children and young adults but can be found in any age group. Diagnosis of LCH is often difficult and can be delayed because of its rarity. The present study highlights the cytomorphological features in a large cohort of cases. An accurate cytological diagnosis may avoid unnecessary biopsy and guide appropriate management.

METHOD: Forty seven (47) cases of LCH diagnosed on cytological material & fine-needle aspiration (FNA) over a period of 14 years (2003-2016) were retrieved from the archives. The cytological smears were evaluated and microscopic findings collected by semi-quantitative assessment done by two different pathologists

RESULT: The age at the diagnosis of the patients ranged from 9 months to 28 years. The majority of cases were in the age group of 0-5 years. The most common site was head and neck region, which included cervical lymphadenopathy and scalp swelling. Two cases were diagnosed each from inguinal lymph node and bronchio-alveolar lavage (BAL). Cytological smears in the majority of the cases were moderate to highly cellular (58%) and showing abundant Langerhans cell in (72%) of cases. Areas of necrosis were seen in 38%, while 78% of cases showed giant cells. The majority of cases showed mild eosinophilia (61%), sparse lymphocytosis (83%) and mild neutrophilic infiltration (64%). There were 1-2 mitoses per 10 high power field in 12 cases (25.5%). No abnormal mitoses were identified.

CONCLUSION: The presence of cells with features of Langerhans cells associated with the expression of selected immunohistochemical markers allow the diagnosis of LCH on cytological samples, sparing more invasive procedure as a biopsy.

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DOI: 10.1111/cyt.12709

PMID: 31017324

175: Podlaha O, Gane E, Brunetto M, Fung S, Chuang WL, Pan CQ, Jiang Z, Liu Y, Bhardwaj N, Mukherjee P, Flaherty J, Gaggar A, Subramanian M, Izumi N, Shalimar, Lim YS, Marcellin P, Buti M, Chan HLY, Agarwal K. Large-scale viral genome analysis identifies novel clinical associations between hepatitis B virus and chronically infected patients. *Sci Rep*. 2019 Jul 19;9(1):10529. doi: 10.1038/s41598-019-46609-7. PubMed PMID: 31324819; PubMed Central PMCID: PMC6642195.

Despite the high global prevalence of chronic hepatitis B (CHB) infection, datasets covering the whole hepatitis B viral genome from large patient cohorts are lacking, greatly limiting our understanding of the viral genetic factors involved in this deadly disease. We performed deep sequencing of viral samples from patients chronically infected with HBV to investigate the association between viral genome variation and patients' clinical characteristics. We discovered novel viral variants strongly associated with viral load and HBeAg status. Patients with viral variants C1817T and A1838G had viral loads nearly three orders of magnitude lower than patients without those variants. These patients consequently experienced earlier viral suppression while on treatment. Furthermore, we identified novel variants that either independently or in combination with precore mutation G1896A were associated with the transition from HBeAg positive to the negative phase of infection. These observations are consistent with the hypothesis that mutation of the HBeAg open reading frame is an important factor driving CHB patient's HBeAg status. This analysis provides a detailed picture of HBV genetic variation in the largest patient cohort to date

and highlights the diversity of plausible molecular mechanisms through which viral variation affects clinical phenotype.

DOI: 10.1038/s41598-019-46609-7
PMCID: PMC6642195
PMID: 31324819

176: Pokhriyal R, Hariprasad R, Kumar L, Hariprasad G. Chemotherapy Resistance in Advanced Ovarian Cancer Patients. *Biomark Cancer*. 2019 Jul 5;11:1179299X19860815. doi: 10.1177/1179299X19860815. eCollection 2019. Review. PubMed PMID: 31308780; PubMed Central PMCID: PMC6613062.

Ovarian cancer is the seventh most common gynaecologic malignancy seen in women. Majority of the patients with ovarian cancer are diagnosed at the advanced stage making prognosis poor. The standard management of advanced ovarian cancer includes tumour debulking surgery followed by chemotherapy. Various types of chemotherapeutic regimens have been used to treat advanced ovarian cancer, but the most promising and the currently used standard first-line treatment is carboplatin and paclitaxel. Despite improved clinical response and survival to this combination of chemotherapy, numerous patients either undergo relapse or succumb to the disease as a result of chemotherapy resistance. To understand this phenomenon at a cellular level, various macromolecules such as DNA, messenger RNA and proteins have been developed as biomarkers for chemotherapy response. This review comprehensively summarizes the problem that pertains to chemotherapy resistance in advanced ovarian cancer and provides a good overview of the various biomarkers that have been developed in this field.

DOI: 10.1177/1179299X19860815
PMCID: PMC6613062
PMID: 31308780

177: Poorna Pillutla SV, Kaur C, Roy TS, Jacob TG. Estimation of Volume of Stria Vascularis and the Length of Its Capillaries in the Human Cochlea. *J Microsc Ultrastruct*. 2019 Jul-Sep;7(3):117-123. doi: 10.4103/JMAU.JMAU_12_19. PubMed PMID: 31548922; PubMed Central PMCID: PMC6753699.

Background: The stria vascularis (SV) is a vascularized epithelium that secretes endolymph and is located on the lateral wall of the membranous cochlea. The capillaries of SV directly influence the composition of the endolymph and hence the generation of impulses by the hair-cells that are auditory receptors and thus affect hearing. Therefore, the real morphology of the SV would be very important for understanding the hearing system. There are few reliable reports of the morphology of the human SV.

Aims and Objectives: In this research, we have estimated the volume of the SV and total length of strial capillaries in the apical, middle and basal turns of the human cochlea by updated stereological techniques.

Methods: The point-counting Cavalieri's method and hemispherical volume probes were applied on stained, 40 μm -thick serial sections of five celloidin-embedded, decalcified cochleae.

Results: The mean age of persons at the time of death was 51 ± 15.25 years, the mean volume of the SV was 0.56 ± 0.054 mm^3 and the mean length of the SV capillaries was 289.08 ± 72.96 mm. We also estimated the same parameters with different stereological parameters, probes and in differently stained sections and checked the relationship and limits of agreement between different methods by paired t-test and Bland-Altman plot. We found agreement in our results.

Conclusion: We provide reliable baseline data on the real morphology of the human SV.

DOI: 10.4103/JMAU.JMAU_12_19
PMCID: PMC6753699
PMID: 31548922

178: Porubsky S, Rudolph B, Rückert JC, Köffer S, Ströbel P, Roden AC, Jain D, Tousseyn T, Van Veer H, Huang J, Antonicelli A, Kuo TT, Rosai J, Marx A; International Thymic Malignancy Interest Group (ITMIG). EWSR1 translocation in primary hyalinising clear cell carcinoma of the thymus. *Histopathology*. 2019 Sep;75(3):431-436. doi: 10.1111/his.13890. Epub 2019 Jul 19. PubMed PMID: 31050844.

AIMS: In thymic carcinomas, focal clear cell change is a frequent finding. In addition to a prominent, diffuse clear cell morphology, some of these carcinomas show an exuberant hyalinised extracellular matrix, and therefore probably represent a separate entity. However, a characteristic genomic alteration remains elusive. We hypothesised that, analogous to hyalinising clear cell carcinomas of the salivary gland, hyalinising clear cell carcinomas of the thymus might also harbour EWSR1 translocations.

METHODS AND RESULTS: We identified nine archived cases of thymic carcinoma with focal clear cell features and two cases that showed remarkable hyalinised stroma and prominent, diffuse clear cell morphology. These two cases expressed p40 and were negative for Pax8, CD5, and CD117. Programmed death-ligand 1 was highly positive in one case (70%), and negative in the other one. EWSR1 translocation was identified in both cases of hyalinising clear cell carcinoma, and was absent in all nine carcinomas that showed clear cell features without substantial hyalinisation. In one of the EWSR1-translocated cases, a fusion between exon 13 and exon 6 of EWSR1 and ATF1, respectively was identified by next-generation sequencing.

CONCLUSIONS: These findings suggest that the EWSR1 translocation and possibly the EWSR1-ATF1 fusion might be unifying genomic alterations for thymic clear cell carcinomas with prominent hyalinised stroma, for which we propose the term 'hyalinising clear cell carcinoma of the thymus'. Because the immunophenotype is unspecific, testing for the EWSR1 translocation might be helpful in discriminating this entity from other thymic neoplasms or metastases, in particular those with clear cell change.

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DOI: 10.1111/his.13890
PMID: 31050844

179: Prasad C, Khandelwal A, Kumar S, Chaturvedi A, Kumar N. Abdominal Cerebrospinal Fluid Pseudocyst Due to Ventriculoperitoneal Shunt Mimicking Unilateral Pleural Effusion: A Rare Finding. *J Neurosurg Anesthesiol*. 2019 Jul 10. doi: 10.1097/ANA.0000000000000628. [Epub ahead of print] PubMed PMID: 31306263.

180: Prasad G, Bandesh K, Giri AK, Kauser Y, Chanda P, Parekatt V, Mathur S, Madhu SV, Venkatesh P, Bhansali A, Marwaha RK, Basu A, Tandon N, Bharadwaj D; INDICO. Genome-Wide Association Study of Metabolic Syndrome Reveals Primary Genetic Variants at CETP Locus in Indians. *Biomolecules*. 2019 Jul 30;9(8). pii: E321. doi: 10.3390/biom9080321. PubMed PMID: 31366177; PubMed Central PMCID: PMC6723498.

Indians, a rapidly growing population, constitute vast genetic heterogeneity to that of Western population; however they have become a sedentary population in past decades due to rapid urbanization ensuing in the amplified prevalence of metabolic syndrome (MetS). We performed a genome-wide association study (GWAS) of

MetS in 10,093 Indian individuals (6,617 MetS and 3,476 controls) of Indo-European origin, that belong to our previous biorepository of The Indian Diabetes Consortium (INDICO). The study was conducted in two stages-discovery phase (N = 2,158) and replication phase (N = 7,935). We discovered two variants within/near the CETP gene-rs1800775 and rs3816117-associated with MetS at genome-wide significance level during replication phase in Indians. Additional CETP loci rs7205804, rs1532624, rs3764261, rs247617, and rs173539 also cropped up as modest signals in Indians. Haplotype association analysis revealed GCCCAGC as the strongest haplotype within the CETP locus constituting all seven CETP signals. In combined analysis, we perceived a novel and functionally relevant sub-GWAS significant locus-rs16890462 in the vicinity of SFRP1 gene. Overlaying gene regulatory data from ENCODE database revealed that single nucleotide polymorphism (SNP) rs16890462 resides in repressive chromatin in human subcutaneous adipose tissue as characterized by the enrichment of H3K27me3 and CTCF marks (repressive gene marks) and diminished H3K36me3 marks (activation gene marks). The variant displayed active DNA methylation marks in adipose tissue, suggesting its likely regulatory activity. Further, the variant also disrupts a potential binding site of a key transcription factor, NRF2, which is known for involvement in obesity and metabolic syndrome.

DOI: 10.3390/biom9080321

PMCID: PMC6723498

PMID: 31366177

181: Prasad K. Know Some Vital Statistics: What is P Value? *Neurol India*. 2019 Jul-Aug;67(4):1086. doi: 10.4103/0028-3886.266277. PubMed PMID: 31512640.

182: Pujari A, Markan A, Chawla R, Gagrani M. The additional role of unmodified iPhone X as a direct ophthalmoscope. *Indian J Ophthalmol*. 2019 Jul;67(7):1253-1254. doi: 10.4103/ijo.IJO_90_19. PubMed PMID: 31238488; PubMed Central PMCID: PMC6611294.

183: Pujari A, Selvan H, Goel S, Ayyadurai N, Dada T. Smartphone Disc Photography Versus Standard Stereoscopic Disc Photography as a Teaching Tool. *J Glaucoma*. 2019 Jul;28(7):e109-e111. doi: 10.1097/IJG.0000000000001251. PubMed PMID: 30921278.

Optic disc photographic assessment was performed using an unmodified iPhone Xs Max. A video recording of the disc and peripapillary area was obtained in 5 patients. Good quality screenshots were acquired from the video, and, from them, a single best quality image was selected. This was compared with their respective standard optic disc stereo photograph. A glaucomatologist blinded to the type of image acquisition studied these images and concluded that both images could help well in the identification of glaucomatous optic disc features; however, the stereo photograph had better clarity than the iPhone static image. Nevertheless, the iPhone offered the advantage of real-time video assessment of the disc and peripapillary area and could serve as a practical and handy tool for telemedicine and teaching purposes.

DOI: 10.1097/IJG.0000000000001251

PMID: 30921278

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185: Rafiq R, Sharma R, Borkar SA. Giant Sporadic Unilateral Vestibular Schwannoma in Child: Can It Get Bigger Than This? *World Neurosurg*. 2019

Oct;130:378-379. doi: 10.1016/j.wneu.2019.07.064. Epub 2019 Jul 12. PubMed PMID: 31306840.

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

186: Ray S. Authors' Reply. Ann Indian Acad Neurol. 2019 Jul-Sep;22(3):351. doi: 10.4103/aian.AIAN_483_18. PubMed PMID: 31359958; PubMed Central PMCID: PMC6613406.

187: Razik A, Singh AN, Roy SG, Madhusudhan KS. Mesenteric Tuberculosis Masquerading as Carcinoid Tumor on Conventional Imaging and DOTANOC Positron Emission Tomography/Computed Tomography: Uncommon Presentation of a Common Disease. Indian J Nucl Med. 2019 Jul-Sep;34(3):216-219. doi: 10.4103/ijnm.IJNM_29_19. PubMed PMID: 31293302; PubMed Central PMCID: PMC6593933.

Carcinoid tumor of the mesentery has a classical imaging morphology. A specific diagnosis can often be provided on the basis of clinical history, elevated serum neuroendocrine markers, and uptake on somatostatin receptor-based radiotracer studies. Although a number of inflammatory and neoplastic conditions may mimic carcinoid tumor on many of these modalities, uptake on ⁶⁸Ga-DOTANOC positron emission tomography/computed tomography (PET/CT) is considered specific. We report a case of a 28-year-old male presenting with a mesenteric mass along with elevated serum neuroendocrine markers and uptake on DOTANOC PET/CT, all suggestive of carcinoid tumor. However, the histopathologic examination after surgical resection revealed necrotizing granulomas consistent with tuberculosis (TB). This case highlights the great masquerader that TB can be and stresses the importance of keeping a high index of suspicion for TB, especially in endemic areas.

DOI: 10.4103/ijnm.IJNM_29_19
PMCID: PMC6593933
PMID: 31293302

188: Revon-Rivi re G, Banavali S, Heississen L, Gomez Garcia W, Abdolkarimi B, Vaithilingum M, Li CK, Leung PC, Malik P, Pasquier E, Epelman S, Chantada G, Andr  N. Metronomic Chemotherapy for Children in Low- and Middle-Income Countries: Survey of Current Practices and Opinions of Pediatric Oncologists. J Glob Oncol. 2019 Jul;5:1-8. doi: 10.1200/JGO.18.00244. PubMed PMID: 31260397; PubMed Central PMCID: PMC6613668.

PURPOSE: Low- and middle-income countries (LMICs) experience the burden of 80% of new childhood cancer cases worldwide, with cure rates as low as 10% in some countries. Metronomics combines frequent administrations of low-dose chemotherapy with drug repurposing, which consists of using already-approved drugs for new medical applications. With wide availability, limited costs, and little infrastructure needs, metronomics can be part of constraint-adapted regimens in these resource-limited settings-with the understanding that metronomics shall not be a substitute for standard treatments when available and doable. Our study aims to describe the experience, practices, opinions, and needs in metronomics of

physicians working in LMICs.

METHODS: An online questionnaire was sent to more than 1,200 physicians in pediatric oncology networks in LMICs. Items included the type of center, physician's demographics, experience in pediatric oncology, and experience with current knowledge of metronomics. Opinions and perspectives were explored using multiple-answer and open questions.

RESULTS: Of physicians, 17% responded. Of respondents, 54.9% declared that they had already used a metronomic regimen. The most frequently cited repositioned drugs were celecoxib (44%) followed by propranolol and valproic acid (17%). Respondents highlighted the advantages of outpatient use (20%) and expected low toxicity (24%). In considering the drawbacks of metronomics, 47% of responses highlighted the lack of scientific evidence or guidelines, 33% the availability or affordability of drugs, and 18% the problem of acceptance or compliance. Of physicians, 79% believed that use of metronomics will spread in LMICs in the near future and 98% of them were willing to participate in international metronomic protocols or registries.

CONCLUSION: Metronomics is already used in LMICs and is a potential answer to unmet needs in pediatric oncology. There is room for improvement in the availability of drugs and a necessity to develop collaborative protocols and research to generate level A evidence.

DOI: 10.1200/JGO.18.00244

PMCID: PMC6613668

PMID: 31260397

189: Sachdeva S, Jamshed N, Aggarwal P, Kashyap SR. Perception of Workplace Violence in the Emergency Department. *J Emerg Trauma Shock*. 2019 Jul-Sep;12(3):179-184. doi: 10.4103/JETS.JETS_81_18. PubMed PMID: 31543640; PubMed Central PMCID: PMC6735201.

Background: Workplace violence (WPV) is a serious issue worldwide. Violence against emergency department (ED) staffs causes significant physical and mental distress which affects work productivity and patient care.

Objective: We seek amount and type of WPV perceived by the emergency physicians and nurses, their reporting agencies, and impact of violence on them.

Methods: It was a cross-sectional study conducted at a tertiary health care center. Data were collected based on 24-item questionnaire between January and December 2017. Descriptive statistics was used to describe characteristics of participants and exposure to violence. Chi-square and Fisher's exact tests were used for bivariate analysis while logistic regression analysis was to analyze the impact of violence with participant characteristics. $P < 0.05$ was used to judge the clinical significance.

Results: Two hundred and thirty-five participants (123 doctors and 112 nurses) completed the survey. About 67% of the participants (158/235) reported verbal abuse (VA), physical assault (PA) was reported by 17% (40/235), while confrontation was reported by 11% (27/235). Family members were the main perpetrator for VA (75%) and PA (35%). Regarding reporting, the violent incidences were mostly reported to ED security and ED faculty. Individuals with comparatively less age group, less experience, and male gender were more exposed to abuse both VA and PA at $P < 0.05$. Nurses and junior residents reported more abuse than senior residents ($P < 0.05$). Majority of the participants had reported lack of job satisfaction due to Verbal abuse ($P = 0.01$).

Conclusion: WPV is common in ED of the current setting. It results in significant physiological and psychological effects on health-care providers.

DOI: 10.4103/JETS.JETS_81_18

PMCID: PMC6735201

PMID: 31543640

190: Sadana D, Gupta RK, Jain S, Kumaran SS, G S R, Thennarasu K, Rajeswaran J. Neurocognitive profile of patients with Bipolar Affective Disorder in the euthymic phase. *Asian J Psychiatr.* 2019 Jul 24;44:121-126. doi: 10.1016/j.ajp.2019.07.037. [Epub ahead of print] PubMed PMID: 31369947.

Bipolar disorder is a chronic psychiatric condition characterized by episodes of elevated/irritable and depressed moods resulting in the loss of more disability-adjusted life years (DALYs) than other major conditions. The neurocognitive impairments in these patients interfere with sustained goal-directed performance and achievement even during the euthymic phase of the illness. **METHODOLOGY:** The study aimed to explore the neurocognitive profile of patients in their euthymic phase. We matched 30 patients diagnosed with Bipolar Affective Disorder (BD) in the age range of 20-40 years with 30 healthy controls (with no axis I or II diagnosis, assessed on MINI) matched on age, gender, and education. The neurocognitive profile was assessed using NIMHANS Neuropsychology Battery.

RESULTS: Euthymic phase patients with bipolar disorder had statistically significant low scores on the speed of processing information as compared to healthy controls. Although impaired in BD group, no statistically significant difference was found between the two groups on executive functions and memory.

CONCLUSION: The findings of the study suggest that cognitive retraining aimed at ameliorating these deficits can be used as an essential intervention in rehabilitation programs to successfully reintegrate patients with the bipolar affective disorder into the society. The research also indicates that despite the symptomatic recovery between the episodes, impairments in the speed of processing information continue to disrupt performance in patients with Bipolar Disorder.

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DOI: 10.1016/j.ajp.2019.07.037

PMID: 31369947

191: Sahay P, Dhanda S, Maharana PK, Titiyal JS. Intercalary staphyloma in Marfan syndrome: A dreaded complication of scleral incision. *Indian J Ophthalmol.* 2019 Jul;67(7):1161-1162. doi: 10.4103/ijoo.IJO_1672_18. PubMed PMID: 31238437; PubMed Central PMCID: PMC6611239.

192: Sahay P, Agarwal D, Maharana PK, Titiyal JS. Granular corneal dystrophy: an enigma resolved. *Int Ophthalmol.* 2019 Jul;39(7):1599-1602. doi: 10.1007/s10792-018-0971-6. Epub 2018 Jun 25. PubMed PMID: 29943099.

PURPOSE: To report the intra-familial phenotypic variation of granular corneal dystrophy (GCD) across different age groups.

METHOD: Two cases of GCD belonging to the same family (mother and daughter) were assessed and clinical findings were noted.

RESULT: An 18-year-old female with complaint of glare, on examination showed brownish granules involving bowman's layer and superficial corneal stroma suggesting a diagnosis of Bowman layer dystrophy. Screening of her mother revealed multiple diffuse white granular opacities with snowflake appearance involving the central cornea. The intervening cornea was clear and limbus was not involved. Focal illumination showed deep stromal involvement. All these findings were typical of GCD. Genetic analysis revealed mutation of TGF beta-1 located on 5q31 which was consistent with our clinical diagnosis of GCD.

CONCLUSION: Variable clinical presentation of GCD in different age groups can lead to diagnostic dilemma. Screening of family members can be helpful especially when dealing with early cases of GCD.

DOI: 10.1007/s10792-018-0971-6

PMID: 29943099 [Indexed for MEDLINE]

193: Saluja P, Arora M, Dave A, Shetty VP, Khurana C, Madan A, Rai R, Katiyar A. Role of Cytokeratin-7 in the pathogenesis of odontogenic cysts - an immunohistochemical study. *Med Pharm Rep.* 2019 Jul;92(3):282-287. doi: 10.15386/mpr-1112. Epub 2019 Jul 31. PubMed PMID: 31460511; PubMed Central PMCID: PMC6709964.

Introduction: Odontogenic cysts are distinct entities and quite a common occurrence in the jaw bones. These are individual lesions which arise from the same odontogenic apparatus but with varying pathogenesis. Cytokeratins are integral components in tooth development and are expressed across the odontogenic tissues in physiological and pathological states.

Aim: To elucidate the role of cytokeratin-7 in the pathogenesis of odontogenic cysts by immunohistochemistry.

Method: Cytokeratin-7 (CK-7) was assessed in 39 cases of odontogenic lesions retrieved from the archival files which included 15 cases of dentigerous cysts (DC), 12 cases of odontogenic keratocysts (OKC) and 12 cases of radicular cysts (RC) and also 8 cases of control specimens.

Statistical analysis: Results obtained were statistically analyzed using chi-square test to assess the association between different odontogenic cysts used in this study and Cytokeratin-7 staining. The difference was considered to be of statistical significance if the p value was ≤ 0.05 .

Results: CK7 expression was maximum in dentigerous cysts (66.66%) followed by radicular cysts (41.66%) and odontogenic keratocysts (16.6%). On evaluation of staining and expression pattern, highest positivity is shown in dentigerous cysts and the positivity is seen in suprabasal (60%) and superficial layers (40%) whereas radicular cysts and odontogenic keratocysts showed positivity in superficial and spinous layers.

Conclusion: Cytokeratin-7 expression correlates with the degree of differentiation of the epithelium. So the cysts with a well-differentiated epithelium (RC and DC) express CK-7, while the cysts with a less well-differentiated epithelium (OKC) show slight positivity. Thus it can be useful to differentiate OKC from DC and RC.

DOI: 10.15386/mpr-1112

PMCID: PMC6709964

PMID: 31460511

194: Sarkar S, Balhara YPS, Kumar S, Saini V, Kamran A, Patil V, Singh S, Gyawali S. Internalized stigma among patients with substance use disorders at a tertiary care center in India. *J Ethn Subst Abuse.* 2019 Jul-Sep;18(3):345-358. doi: 10.1080/15332640.2017.1357158. Epub 2017 Sep 12. PubMed PMID: 28898165.

Internalized stigma among individuals with substance use disorders is a major barrier for accessing mental health services. This study aimed to assess internalized stigma among individuals with substance use disorders and to assess the relationship of internalized stigma with the quality of life. This cross-sectional study recruited 201 patients with a clinical diagnosis of at least opioid or alcohol use disorder according to Diagnostic and Statistical Manual 5 at a public-funded tertiary care center in India. The study participants were interviewed using a sociodemographic questionnaire, the Internalized Stigma of Mental Illness Scale (ISMIS), and the World Health Organization's Quality of Life (WHOQOL-Bref) questionnaire. Seven participants (3.5% of the sample) had mild stigma according to ISMI scores, 62 (30.8%) had moderate stigma, and 132 (65.7%) had severe stigma. The various quality-of-life domains generally had a negative correlation with the internalized stigma scores. Participants using opioids as the primary substance of use were more likely to have severe

internalized stigma. The experience of internalized stigma and dissatisfaction with quality of life is quite high among people suffering with substance use disorders in India. These results emphasize the need for interventions to reduce internal perception of stigma and improve the quality of life of individuals with substance use disorders.

DOI: 10.1080/15332640.2017.1357158
PMID: 28898165

195: Satyarthee GD, Jagdevan A. T. S. Kanaka: First Asian Woman Neurosurgeon, Who Pioneered Stereotactic, Functional and Cerebral Electrode Implant Surgery and Developed Separate Neurosurgical Speciality in India Early 1970. *Asian J Neurosurg.* 2019 Jul-Sep;14(3):1050. doi: 10.4103/ajns.AJNS_287_18. PubMed PMID: 31497164; PubMed Central PMCID: PMC6703064.

196: 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.

DOI: 10.1055/s-0039-1696081
PMCID: PMC6779551
PMID: 31595126

197: Selvan H, Shiny H, Gupta S. T-Cell Acute Lymphoblastic Leukemia with Massive Vitreo-Retinal Infiltration and Neovascular Glaucoma. *Indian J Hematol Blood Transfus.* 2019 Jul;35(3):605-606. doi: 10.1007/s12288-019-01138-1. Epub 2019 May 22. PubMed PMID: 31388290; PubMed Central PMCID: PMC6646619.

198: Selvan H, Sharma A, Birla S, Gupta S, Somarajan BI, Gupta V, Sharma A. Molecular characterization of a rare phenotype of X-linked retinoschisis with angle-closure glaucoma. *Indian J Ophthalmol.* 2019 Jul;67(7):1226-1229. doi: 10.4103/ijo.IJO_1407_18. PubMed PMID: 31238476; PubMed Central PMCID: PMC6611297.

A 11-year-old boy presented with complaints of blurred vision and on evaluation was found to have X-linked retinoschisis (XLRs) with angle-closure glaucoma. Clinical and genetic evaluation of first-degree family members was done. His brother had a milder form of XLRs with shallow anterior chamber. Topical dorzolamide 2% and timolol 0.5% were used to control intraocular pressure.

Genetic analysis revealed a novel three base pair deleterious mutation (c. 375_377 del AGA) in exon-5 of the RS1 gene in three members of the family.

DOI: 10.4103/ijo.IJO_1407_18

PMCID: PMC6611297

PMID: 31238476 [Indexed for MEDLINE]

199: Selvaraj K, Kar SS, Ramaswamy G, Premarajan KC, Saya GK, Kalidoss V. Clustering of cardiovascular disease risk factors - Syndemic approach: Is it a time to shift toward integrated noncommunicable disease clinic? Indian J Public Health. 2019 Jul-Sep;63(3):186-193. doi: 10.4103/ijph.IJPH_158_18. PubMed PMID: 31552846.

Background: The concurrent occurrence of many noncommunicable disease (NCD) risk factors is common, and it can play a synergistic role in occurrence of NCDs. **Objectives:** This study aimed to identify the magnitude of clustering of NCD risk factors, patterns of risk factors emerged in clustering, and variations in clustering of risk factors based on socioeconomic factors.

Methods: A cross-sectional survey was undertaken in an urban area of Puducherry among 2399 adults during 2014-2015. Sociodemographic and behavioral risk factors were assessed through a validated STEPS survey tool. Individuals with three or more risk factors were classified to have clustering of NCD risk factors.

Socioeconomic positions in relation to clustering were identified through Chi-square analysis followed by multiple logistic regression where clustering at family and area was adjusted through multilevel modeling techniques.

Results: Of the 2399 adults, 1741 (73%) had clustering of NCD risk factors. Inadequate consumption of fruits and vegetables, high salt intake, and high waist circumference are the three predominant risk factors across all subgroups. Adults belonging to Christian religion (adjusted odds ratio [adjOR]: 2.8, 95% confidence interval [CI]: 1.5-5.2), aged 35 years and over (adjOR: 2.0, 95% CI: 1.4-6.0), and illiterates (adjOR: 1.8, 95% CI: 1.1-5.5) are more likely to have clustered NCD risk factors compared to others.

Conclusions: Clustering of NCD risk factors is highly prevalent in this region and mainly driven by dietary practices and obesity measures. There is an urgent need to reorient the health system toward integrated approach with mandated inclusion of nutritionist in NCD health service delivery.

DOI: 10.4103/ijph.IJPH_158_18

PMID: 31552846

200: Sethi AK, Salhotra R, Chandra M, Mohta M, Bhatt S, Kayina CA. Confirmation of placement of endotracheal tube - A comparative observational pilot study of three ultrasound methods. J Anaesthesiol Clin Pharmacol. 2019 Jul-Sep;35(3):353-358. doi: 10.4103/joacp.JOACP_317_18. PubMed PMID: 31543584; PubMed Central PMCID: PMC6748007.

Background and Aims: Confirmation of endotracheal tube (ETT) position is necessary to ensure proper ventilation. The present study was conducted with the aim to compare the efficacy of three ultrasonographic (USG) techniques in terms of time taken for confirmation of ETT position. The time taken by each USG technique was also compared with that for auscultation and capnography. The ability of the three USG techniques to identify tracheal placement of ETT was evaluated in all patients.

Material and Methods: Ninety adult American Society of Anesthesiologists (ASA) I/II patients requiring general anaesthesia with tracheal intubation were randomised into three groups (n = 30 each) depending upon the initial USG transducer position used to confirm tracheal placement of ETT: group T (tracheal), group P (pleural) and group D (diaphragm). The time taken for

confirmation of tracheal placement of ETT by USG, auscultation and capnography was recorded for each of the groups. Subsequently, USG confirmation of ETT placement was performed with the other two USG techniques in all patients. Results: The time taken for USG in group T was significantly less (3.8 ± 0.9 s) compared to group P (12.1 ± 1.6 s) and group D (13.8 ± 1.7 s); $P < 0.001$. USG was significantly faster than both auscultation and capnography in group T ($P < 0.001$), whereas in group P and group D, USG took longer time compared to auscultation ($P = 0.014$ and $P < 0.001$, respectively) but lesser time than capnography ($P < 0.001$ in both groups). Conclusion: USG is a rapid technique for identification of ETT placement. All the three USG techniques are reliable in identifying the tracheal placement of ETT.

DOI: 10.4103/joacp.JOACP_317_18
PMCID: PMC6748007
PMID: 31543584

201: Shankar P, Mishra J, Bharti V, Parashar D, Singh S. Multiplex PCR assay for simultaneous detection and differentiation of *Entamoeba histolytica*, *Giardia lamblia*, and *Salmonella* spp. in the municipality-supplied drinking water. *J Lab Physicians*. 2019 Jul-Sep;11(3):275-280. doi: 10.4103/JLP.JLP_66_18. PubMed PMID: 31579243; PubMed Central PMCID: PMC6771313.

BACKGROUND: The contamination with *Entamoeba histolytica*, *Giardia lamblia*, and *Salmonella* spp. in drinking water is the most prevalent in Indian subcontinent, but often difficult to detect all these pathogens from the drinking water. **MATERIALS AND METHODS:** A multiplex polymerase chain reaction (mPCR) method was developed to detect contamination of municipality-supplied drinking water with *E. histolytica*, *G. lamblia*, and *Salmonella* spp. The primers were designed to target small subunit of 16S rRNA type gene of *E. histolytica* and *G. lamblia*, and invasive A gene of *Salmonella typhimurium*. The optimized mPCR assay was applied on 158 municipality-supplied drinking water samples collected from Delhi. **RESULTS:** Out of total 158 water samples, 89 (56.32%) were found positive for the targeted pathogens by mPCR while conventional methods could be detected only in 11 (6.96%) samples. The mPCR assay showed 100% sensitivity and specificity for these pathogens in comparison with culture and microscopic detection. Of the 89 mPCR-positive samples, *G. lamblia*, *E. histolytica*, and *Salmonella* spp. were present in 35 (22.15%), 26 (16.45%), and 28 (17.72%), respectively. Nine (5.69%) samples were positive for both *E. histolytica* and *G. lamblia*, 10 (6.32%) were positive for *G. lamblia* and *Salmonella* spp., and 8 (5.06%) had *Salmonella* spp. and *E. histolytica*. Nonetheless, 3 (1.89%) samples were positive for all three pathogens. **CONCLUSIONS:** The present assay is an alternative to conventional methods to serve as highly sensitive, specific, and economical means for water quality surveillance to detect the outbreak caused by *E. histolytica*, *G. lamblia*, and *Salmonella* spp. pathogens.

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DOI: 10.4103/JLP.JLP_66_18
PMCID: PMC6771313
PMID: 31579243

202: Sharma A, Vanidassane I, Aggarwal A, Mridha AR, Pandey R, Dhamija E, Barwad A, Rastogi S. Pazopanib efficacy and toxicity in a metastatic sarcoma cohort: Are Indian patients different? *Indian J Cancer*. 2019 Jul-Sep;56(3):207-210. doi: 10.4103/ijc.IJC_105_18. PubMed PMID: 31389382.

PURPOSE: There is no study till date determining the spectrum of adverse events

of pazopanib in Indian patients with advanced sarcoma.

MATERIALS AND METHODS: We conducted a retrospective study by analyzing the case records of metastatic sarcoma patients treated with pazopanib from January 2016 to July 2017 in sarcoma medical oncology clinic. Toxicity was assessed according to CTCAE v.4.03 criteria. SPSS version 23 was used for statistical evaluation.

RESULTS: A total of 33 patients received pazopanib. The median age was 41 years (range, 19-75 years), with a male predominance (54.5%). Twenty-six patients (78.8%) had ECOG performance status 1 at the time of pazopanib initiation. The most common type of sarcoma was synovial sarcoma, and the mean duration of pazopanib intake in patients was 4.12 months. The median follow-up was 13 months. Median progression-free survival was 5 months, and median overall survival was 18 months. Overall response rate was 6.0%. Out of the 33 patients, 42.4% (n = 14) received it after first line of therapy. Six patients (18.2%) required dose reductions due to toxicity. Thirteen (39.4%) patients experienced CTCAE grade 3 or 4 toxicities. Most common grade 3 and 4 toxicities experienced among patients were hand-foot skin reaction (18.2%) and proteinuria (9.1%). No significant difference was seen when analyzed for variables such as age, sex, ECOG performance status, comorbidities, and number of previous lines received in patients experiencing grade 3 and 4 toxicities.

CONCLUSIONS: The spectrum of adverse events in Indian patients at doses lower than the recommended dose is distinctly different from the western population. However, this unique toxicity profile needs to be validated in prospective studies.

DOI: 10.4103/ijc.IJC_105_18

PMID: 31389382

203: Sharma A, Jose AP, Pandey N, Vats S, Bagre V, Kumar H, Nair SC, Kumar P, Bhalla S, Padmanabhan S, Poulter N, Prabhakaran D, Roy A. A collaborative model for capacity building of primary care physicians in the management of Hypertension in India. *J Hum Hypertens*. 2019 Aug;33(8):562-565. doi: 10.1038/s41371-019-0213-z. Epub 2019 Jul 1. PubMed PMID: 31263179.

204: Sharma KK, Vatsa M, Kalaivani M, Bhardwaj D. Mental health effects of domestic violence against women in Delhi: A community-based study. *J Family Med Prim Care*. 2019 Jul;8(7):2522-2527. doi: 10.4103/jfmprc.jfmprc_427_19. PubMed PMID: 31463288; PubMed Central PMCID: PMC6691463.

Background: Domestic violence (DV) against women is an all-pervasive phenomenon considered to have serious health consequences for women. This study aimed to assess the association of DV against women with their mental health status. **Materials and Methods:** This community-based, cross-sectional study was carried out among 827 ever married women from Delhi selected through cluster sampling followed by systematic random sampling. Data were collected using structured and in-depth questionnaires. Mental health status was estimated using self-reporting questionnaire 20.

Results: The prevalence of psychological, physical, sexual, physical, or sexual violence and any form of violence was very high. A quarter of the women (25.3%) reported unhealthy mental status (>8 score) in the past 4 weeks. Women who had experienced DV showed poor mental health status and more suicidal tendencies when compared with women who had not experienced violence.

Conclusion: DV has significant effect on women's mental health underscoring the need to develop public health interventions.

DOI: 10.4103/jfmprc.jfmprc_427_19

PMCID: PMC6691463

PMID: 31463288

205: Sharma N, Arora T, Singhal D, Maharana PK, Garg P, Nagpal R, Murthy S,

Gunnam S, Arora A, Prajna V, Rajaraman R, Padmanabhan P, Kumar A, Kumar R, Tomar S, Thomas A, Gyanchand R, Arora R, Biswas B, Basak S. Procurement, storage and utilization trends of eye banks in India. *Indian J Ophthalmol*. 2019 Jul;67(7):1056-1059. doi: 10.4103/ijo.IJO_1551_18. PubMed PMID: 31238409; PubMed Central PMCID: PMC6611250.

Purpose: To study the trends in collection, storage and utilization of donor corneas in eye banks in India.

Methods: The data was collected from 12 eye banks in India that collected more than 1000 corneas per year. The retrospective analysis of the parameters like characteristics of the donor and the host, storage media used, number of eyes collected, number of eyes utilized, causes of non-utilization of the tissue and the procedures performed was done.

Results: A total of 20,564 eyes were collected by the 12 eye banks during the year 2013-2014. Voluntary eye donation (VED), and hospital cornea retrieval program (HCRP) contributed to 59.6% and 40.4% of tissue procurement respectively. Whole globe enucleation (52.3%) was more commonly performed as compared to in-situ excision of the donor corneas. The most commonly used storage media at all eye banks was McCarey-Kaufman (MK) media (83.3%). The utilization rate of the donor eyes was 50.5%. The most frequent indication for corneal transplantation was infection (active infection - 33.13%, healed infection - 10.78%) followed by Pseudophakic bullous keratopathy (PBK) (13.57%). Full thickness keratoplasty (optical penetrating keratoplasty - 47.23%, therapeutic penetrating keratoplasty - 31.74%) was performed most often followed by endothelial keratoplasty (12.41%) in the developing country.

Conclusion: VED still contributes to majority of the donor tissue retrieval in India. The majority of the eye banks still utilize whole globe enucleation technique and store tissues in MK media. Trends from previous years showed a change towards HCRP, in-situ excision technique and preservation in the long-term storage media.

DOI: 10.4103/ijo.IJO_1551_18

PMCID: PMC6611250

PMID: 31238409 [Indexed for MEDLINE]

206: Sharma N, Venugopal R, Maharana PK, Chaniyara M, Agarwal T, Pushker N, Pandey RM, Sangwan S, Sen S, Kashyap S, Sharma A, Khanna N, Vajpayee RB. Multistep Grading System for Evaluation of Chronic Ocular Sequelae in Patients With Stevens-Johnson Syndrome. *Am J Ophthalmol*. 2019 Jul;203:69-77. doi: 10.1016/j.ajo.2019.01.028. Epub 2019 Feb 4. PubMed PMID: 30731084.

PURPOSE: To propose a new scoring system for grading of chronic ocular sequelae in Stevens-Johnson syndrome (SJS).

DESIGN: Reliability and validity analysis.

METHODS: Participants: Four hundred eyes of 200 patients with chronic ocular SJS/toxic epidermal necrolysis (TEN) were included in the study.

SETTINGS: Single-center, tertiary eye care referral center.

PROCEDURE: All patients with SJS/TEN with chronic (more than 1 year) ocular sequelae were recruited for the study. Corneal, eyelid, and conjunctival signs were evaluated and given scores ranging from 0 to 5 depending on the increasing severity. Twelve signs (6 corneal, 3 conjunctival, and 3 eyelid) were evaluated to obtain the total severity score for each eye. Based on the corrected distance visual acuity (CDVA) and total score, each eye was graded using receiver operating characteristic (ROC) analysis.

MAIN OUTCOME MEASURES: Correlation of CDVA with the severity score determined on the basis of 12 corneal, eyelid, and conjunctival signs.

RESULTS: Mean age was 24.09 ± 10.9 years. The most common inciting agent for SJS was oral medications (85%). The scores of 12 ocular surface parameters correlated

significantly with CDVA ($P < .001$). ROC analysis revealed 4 grades of total severity score of 0-11 (stage 0), 12-16 (stage 1), 17-22 (stage 2), and 23-53 (stage 3). The total severity score correlated significantly with logMAR visual acuity grades with an agreement of 60.7% using Cohen's kappa analysis (kappa coefficient = 0.420 ± 0.03). The most common stage of total severity score was stage 3 in 49% of eyes (196/400), followed by stage 0 (107/400, 26.7%).

CONCLUSIONS: The multistep scoring system of chronic ocular features in SJS/TEN sequelae is a useful tool to grade all levels of severity. This may help to evaluate the efficacy of the surgical intervention by comparing preoperative with postoperative ocular grades.

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DOI: 10.1016/j.ajo.2019.01.028

PMID: 30731084

207: Sharma P, Zaheer S, Goyal S, Ahluwalia C, Goyal A, Bhuyan G, Mandal AK. Clinicopathological analysis of extracranial head and neck schwannoma: A case series. *J Cancer Res Ther.* 2019 Jul-Sep;15(3):659-664. doi: 10.4103/jcrt.JCRT_1125_16. PubMed PMID: 31169236.

Background: Extracranial head and neck schwannomas are rare tumors which are often clinically misdiagnosed. Preoperative diagnosis of these tumors is challenging but imperative for surgeons so as to avoid nerve damage during excision.

Materials and Methods: Sixteen patients diagnosed with extracranial head and neck schwannomas over a period of 2 years were retrospectively analyzed. Clinical details including preoperative fine-needle aspiration cytology (FNAC) and/or computed tomography (CT)/magnetic resonance imaging (MRI) findings were retrieved. FNAC smears and formalin-fixed paraffin-embedded sections were evaluated.

Results: Among these 16 tumors, 6 (37.5%) were located in the lateral aspect of neck, 4 (25%) in scalp, 2 (12.5%) in orbit, and one each (6.25%) in palate, tongue, submandibular gland and parotid gland. The mean patient age was 31.3 years. FNAC was performed in 14 cases, of which 8 cases (58.3%) showed features of benign nerve sheath tumor (BNST), two cases (14.2%) were inconclusive with possibility of mesenchymal lesion, two cases (14.2%) were inadequate, one case (8.3%) showed features suggestive of schwannoma, and a diagnosis of nerve sheath tumor inconclusive for malignancy was rendered in a single case. The sensitivity of FNAC in diagnosis of BNST was 71.4%. CT or MRI was performed in five cases, of which an accurate diagnosis was rendered only in one case of orbital schwannoma. Conclusion: Imaging has a limited role in the preoperative diagnosis of head and neck schwannomas owing to nonspecific radiological features. Cellular aspirate smears are helpful in accurate diagnosis even at unusual locations.

DOI: 10.4103/jcrt.JCRT_1125_16

PMID: 31169236

208: Sharma R, Garg K, Phalak M, Tandon V, Kumari K, Suri V, Suri A, Garg A, Kale SS, Mahapatra AK. Aspergilloma Masquerading as Meningioma: An Experience of Two Cases and Review of Literature. *Neurol India.* 2019 Jul-Aug;67(4):1133-1136. doi: 10.4103/0028-3886.266244. PubMed PMID: 31512657.

209: Sharma R, Borkar SA, Goda R, Kale SS. Which factors predict the loss of cervical lordosis following cervical laminoplasty? A review of various indices and their clinical implications. *Surg Neurol Int.* 2019 Jul 26;10:147. doi: 10.25259/SNI_339_2019. eCollection 2019. Review. PubMed PMID: 31528482; PubMed Central PMCID: PMC6744746.

Background: Many patients undergoing laminoplasty develop postoperative loss of cervical lordosis or kyphotic alignment of cervical spine despite sufficient preoperative lordosis. This results in poor surgical outcomes.

Methods: Here, we reviewed the relationship between multiple radiological parameters of cervical alignment that correlated with postoperative loss of cervical lordosis in patients undergoing laminoplasty.

Results: Patient with a high T1 slope (T1S) has more lordotic alignment of the cervical spine preoperatively and is at increased risk for the loss of cervical lordosis postlaminoplasty. Those with lower values of difference between T1S and Cobb's angle (T1S-CL) and CL-T1S ratio have higher risks of developing a loss of the cervical lordosis postoperatively. Alternatively, C2-C7 lordosis, neck tilt, cervical range of motion, and thoracic kyphosis had no role in predicting the postlaminoplasty kyphosis.

Conclusion: Among various radiological parameters, the preoperative T1S is the most important factor in predicting the postoperative loss of the cervical lordosis/alignment following laminoplasty.

DOI: 10.25259/SNI_339_2019

PMCID: PMC6744746

PMID: 31528482

210: Sharma SK, Chattopadhyay A, Dhir V, Kumar A. Nodal Eosinophilic Granulomatosis With Polyangiitis (EGPA). *J Clin Rheumatol*. 2019 Jul 26. doi: 10.1097/RHU.0000000000001110. [Epub ahead of print] PubMed PMID: 31356392.

211: Sharma V, Bhardwaj N, Khurana S, Aggarwal R, Sharma N, Mathur P. Impact of monocytic cytokines in polytrauma patients with orthopedics injuries. *J Clin Orthop Trauma*. 2019 Jul-Aug;10(4):750-754. doi: 10.1016/j.jcot.2018.08.004. Epub 2018 Aug 4. PubMed PMID: 31316249; PubMed Central PMCID: PMC6611960.

Objective: Orthopedic injuries are a growing epidemic affecting predominantly, the young population, after trauma. Polytrauma patients with a femoral fracture and with Injury Severity Score of >15 are of special concern because of complications like Systemic inflammatory response syndrome (SIRS), Multi-organ dysfunction syndrome (MODS) and sepsis. Against this background. We aimed to assess the role of monocytic cytokines in the development of complications in patients, having isolated diaphyseal fracture of femur as compared to those having diaphyseal fracture of femur along with ISS score >15.

Methodology: Patients were divided into to two groups: in first group, only those patients who had isolated femur fracture were included (named as 'Group A'). In the second groups patients having femur fracture along with ISS >15 at the time of admission (named as 'Group B'), were included. The study used flowcytometry based intracellular cytokine assay to circumvent the problem associated with extracellular cytokine assay.

Results and Conclusion: A total of 20 patients aged between 20 and 55 years, presenting to the emergency department within 24h of injury were enrolled in Group 'A' and 'B' as per criteria mentioned above. Intracellular expression of cytokines in isolated femur fracture tends to normalize towards healthy control in the late phase of trauma. Elevated levels of IL-8 and IL-6 levels in late phase (Day 10) of trauma. IL-8 and IL-6 may increases to compensate the higher levels of IL-1 β . The effect of cytokines on the severity of injury was observed. This complex action of immune cells and proinflammatory cytokines were seen in initial and later stage of trauma.

DOI: 10.1016/j.jcot.2018.08.004

PMCID: PMC6611960 [Available on 2020-07-01]

PMID: 31316249

212: Sihota R, Kamble N, Sharma AK, Bhari A, Gupta A, Midha N, Selvan H, Dada T, Gupta V, Pandey RM. 'Van Herick Plus': a modified grading scheme for the assessment of peripheral anterior chamber depth and angle. *Br J Ophthalmol*. 2019 Jul;103(7):960-965. doi: 10.1136/bjophthalmol-2018-312132. Epub 2018 Aug 1. PubMed PMID: 30068514.

AIM: To evaluate the accuracy of a new, modified grading scheme involving a short vertical slit beam, at the inferior angle for peripheral anterior chamber depth (PAC) and angle estimation and its correlation with anterior segment optical coherence tomography (ASOCT).

METHODS: A cross-sectional study of consecutive phakic patients, above 40 years of age, was performed. Using a short, vertical slit beam not reaching the pupil, the inferior angle at the sclerolimbic junction was evaluated, photographed and assessed by a ratio of peripheral anterior chamber depth to peripheral corneal thickness (PAC:PCT) and iridocorneal angle (ICA) on ImageJ software. The inferior angle at the same meridian was also recorded on ASOCT.

RESULTS: Based on the PAC:PCT ratio, the subjects were divided into four groups: I (<1/4), II (1/4-1/2), III (>1/2-1) and IV (>1). The clinically assessed angle by short vertical slit beam correlated well with ASOCT values, trabecular-iris angle (TIA) ($r=0.918$; $p<0.001$) and scleral spur angle ($r=0.903$, $p<0.001$). The mean difference between ICA and TIA on ASOCT was 0.7970; 95% limits of agreement: -5.7670 to 7.3610 ($\pm 1.96SD$). For angles graded narrow on ASOCT (TIA <200), using a cut-off of peripheral PAC:PCT <1/4, the area under the curve was 0.918 with a sensitivity of 85.2% and a specificity of 88.2%. There was good agreement between ImageJ parameters with those assessed subjectively on photograph of the slit beam examination by a glaucoma fellow (weighted kappa=0.74) as compared with a general ophthalmologist, where there was moderate agreement (weighted kappa=0.57).

CONCLUSION: A short, vertical slit lamp beam evaluation at the inferior angle is an easy and relatively accurate method for both peripheral anterior chamber depth and angle assessment. It correlated well with ASOCT and can be used as a more reliable screening tool to identify eyes with possibly occludable angles.

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DOI: 10.1136/bjophthalmol-2018-312132
PMID: 30068514

213: Sikidar A, Kalyanasundaram D. An open-source plugin for OpenSim(®) to model the non-linear behaviour of dense connective tissues of the human knee at variable strain rates. *Comput Biol Med*. 2019 Jul;110:186-195. doi: 10.1016/j.combiomed.2019.05.021. Epub 2019 May 31. PubMed PMID: 31173942.

The force-length characteristics of dense connective tissues (DCTs) vary non-linearly as a function of strain rate. However, there is no class of OpenSim® available to incorporate the effect of strain rate into the OpenSim® model. In this work, a new plugin for OpenSim® was developed to incorporate the non-linear strain rate behaviour of dense connective tissues (DCTs) of the human knee. Experimental force-length plots from the literature were used to extract the shape factor, scale factor, the coefficient of viscosity and elastic stiffness corresponding to specific strain rates. A new class object termed as NonLinearLigament was formulated using a customized plugin based on a structural constitutive model. A test platform was created to evaluate the force-length patterns at multiple strain rates ranging from 0.0001 s⁻¹ to 100 s⁻¹ for the DCT bundles. Knee kinematics of 25 DCT bundles were subjected to forward simulation at various strain rates. To understand the significance, the force-length characteristics of each of the DCTs were simulated as a function of strain rate

for both existing Ligament class of OpenSim® and the proposed NonLinearLigament class. In the proposed ligament class, higher forces were observed with an increase of strain rate in DCTs. Existing Ligament class in OpenSim® was devoid of any changes at different strain rates. In summary, the developed plugin takes into account the short term viscoelastic behaviour of DCTs and hence, would help in accurate modelling of tissue behaviour specifically for dynamic situations.

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DOI: 10.1016/j.combiomed.2019.05.021

PMID: 31173942

214: 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 Jul 2. pii: S1542-0124(18)30402-6. doi: 10.1016/j.jtos.2019.07.002. [Epub ahead of print] 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

215: Singh A, Gupta N, Ganger A, Singh D, Kashyap S, Tandon R. Sutureless Customized Lamellar Corneal Transplant in a Patient with Gelatinous Drop-Like Corneal Dystrophy. *Exp Clin Transplant*. 2019 Jul 19. doi: 10.6002/ect.2019.0043. [Epub ahead of print] PubMed PMID: 31324138.

Patients with gelatinous drop-like corneal dystrophy need to be effectively managed as the disease is severely debilitating in view of associated pho-topobia and glare. Here, we report a rare case of gelatinous drop-like corneal dystrophy effectively managed by intraoperative anterior segment optical coherence tomography-guided manual deep anterior lamellar keratoplasty in 1 eye and sutureless fibrin glue-aided, microkeratome-assisted automated lamellar therapeutic keratoplasty in the other eye. The patient, a 22-year old man,

presented with gradual diminution of vision associated with foreign body sensation, glare, photophobia, and watering due to corneal lesions, which were consistent with a diagnosis of gelatinous drop-like corneal dystrophy. Visual acuity at pre-presentation was 4/60 and 3/60 in the right and left eye, respectively. The patient received customized component lamellar keratoplasty in both eyes, and host tissue was sent for histopathologic examination. Treatment resulted in a best-corrected distance visual acuity of 6/9 and 6/12 in the right and left eye, respectively. The graft was clear and well apposed, with minimal interface haze bilaterally. The histopathologic report suggested intralamellar amyloid deposition in the form of homogenous, acellular eosinophilic deposits in the epithelium and anterior corneal stroma. This is a first report of the exclusive use of a fibrin-aprotinin tissue adhesive to stabilize a donor corneal lamellar graft as a treatment modality for a patient with gelatinous drop-like corneal dystrophy, suggesting that this treatment could supplant the need for sutures.

DOI: 10.6002/ect.2019.0043

PMID: 31324138

216: Singh A, Irugu DVK, Sikka K, Verma H, Thakar A. Study of Sigmoid Sinus Variations in the Temporal Bone by Micro Dissection and its Classification - A Cadaveric Study. *Int Arch Otorhinolaryngol*. 2019 Jul;23(3):e311-e316. doi: 10.1055/s-0039-1688455. Epub 2019 May 28. PubMed PMID: 31360251; PubMed Central PMCID: PMC6660287.

Introduction Sigmoid sinus (SS) variations have been classified variously in the literature. These classifications suffer from some form of shortcoming from a clinical point of view for their application. **Objective** We propose a clinically relevant classification of the SS in relation to the posterior semicircular canal (PSCC) and to the exposure of the presigmoid dural plate. The positioning of the SS was analyzed with reference to the volume of the mastoid and to the level of mastoid pneumatization. **Methods** A total of 94 formalin-preserved human cadaveric temporal bones were microdissected to carry out a complete mastoidectomy. The SS, the presigmoid dural plate, and the PSCC were exposed, and the position of the former was analyzed in relation to the latter two in order to classify the position of the SS into three grades. **Results** Grade I had the best exposure of the presigmoid dura and of the PSCC, while grade III had the poorest exposure of the presigmoid dura and of the PSCC. Grade I SS was associated with good pneumatization and higher mastoid volumes compared with grades II and III. **Conclusions** The SS exhibits considerable anatomic variability. A favorable positioning of the SS is associated with a large mastoid volume and pneumatization. A careful preoperative study of the imaging may help in understanding the positioning of the SS and the safety of various transmastoid approaches.

DOI: 10.1055/s-0039-1688455

PMCID: PMC6660287

PMID: 31360251

217: Singh L, Subbiah AK, Singh G, Bagchi S, Dinda AK, Agarwal SK. Monoclonal gammopathy of renal significance with heavy-chain deposition disease in renal allograft: challenges in the diagnosis and management. *Transpl Int*. 2019 Jul;32(7):769-770. doi: 10.1111/tri.13461. Epub 2019 May 31. PubMed PMID: 31081947.

218: Singh N, Ray S, Srivastava A. Clinical Mimickers of Amyotrophic Lateral Sclerosis-Conditions we Cannot Afford to Miss. *Ann Indian Acad Neurol*. 2019 Jul-Sep;22(3):351. doi: 10.4103/aian.AIAN_456_18. PubMed PMID: 31359959; PubMed

Central PMCID: PMC6613410.

219: Singh N, Goyal V. Rituximab as induction therapy in refractory myasthenia gravis: 18-month follow-up study. *J Neurol*. 2019 Jul;266(7):1596-1600. doi: 10.1007/s00415-019-09296-y. Epub 2019 Mar 27. PubMed PMID: 30919039.

BACKGROUND: Myasthenia gravis is an immune-mediated disorder characterized by easy fatigability and diurnal variation in skeletal muscle weakness. Aim of therapy is to prevent crisis and maintain remission. However, despite standard therapy, some remain refractory to treatment.

AIMS AND OBJECTIVES: To look for efficacy of rituximab in treating refractory myasthenia gravis (MG) in the form of MGFA-PIS score, number of crisis, and dose reduction in immunotherapies.

MATERIAL AND METHODS: A retrospective study was performed in patients with myasthenia gravis (MG) referred to the All India Institute of Medical Sciences (AIIMS) from January 2012 to December 2017 with follow-up of at least 6 months.

RESULTS: Eight refractory MG patients (six AChR positive and two Musk-positive) were identified on oral corticosteroids and azathioprine. After four cycles of rituximab, all patients showed a dose reduction of whom seven were completely tapered off prednisone and there was a 53.8% dose reduction in azathioprine. All patients were continued on AZA after RTX infusion unless contraindicated. Seven achieved minimal manifestation (MM)-2 status as per the MGFA-PIS scale. None of the patients had infusion associated reactions or cytopenia post-RTX infusion.

CONCLUSION: In this small retrospective study, we used RTX as induction therapy and results suggest that repeated RTX infusions may not be necessary as it adds to cost of therapy, especially in LMIC like India.

DOI: 10.1007/s00415-019-09296-y
PMID: 30919039

220: Singh R, Gupta N, Vanathi M, Tandon R. Corneal transplantation in the modern era. *Indian J Med Res*. 2019 Jul;150(1):7-22. doi: 10.4103/ijmr.IJMR_141_19. Review. PubMed PMID: 31571625.

Corneal blindness is one of the major causes of reversible blindness, which can be managed with transplantation of a healthy donor cornea. It is the most successful organ transplantation in the human body as cornea is devoid of vasculature, minimizing the risk of graft rejection. The first successful transplant was performed by Zirm, and since then, corneal transplantation has seen significant evolution. It has been possible because of the relentless efforts by researchers and the increase in knowledge about corneal anatomy, improvement in instruments and advancements in technology. Keratoplasty has come a long way since the initial surgeries wherein the whole cornea was replaced to the present day where only the selective diseased layer can be replaced. These newer procedures maintain structural integrity and avoid catastrophic complications associated with open globe surgery. Corneal transplantation procedures are broadly classified as full-thickness penetrating keratoplasty and partial lamellar corneal surgeries which include anterior lamellar keratoplasty [superficial anterior lamellar keratoplasty (SALK), automated lamellar therapeutic keratoplasty (ALTK) and deep anterior lamellar keratoplasty (DALK)] and posterior lamellar keratoplasty [Descemet stripping automated endothelial keratoplasty (DSAEK) and Descemet membrane endothelial keratoplasty (DMEK)] broadly.

DOI: 10.4103/ijmr.IJMR_141_19
PMID: 31571625

221: Singh S, Naveed S, Mehta N, Arava S, Bhari N. Firm asymptomatic nodule on the epigastrium in an adult male. *Indian J Dermatol Venereol Leprol*. 2019

Jul-Aug;85(4):439. doi: 10.4103/ijdv1.IJDVL_380_18. PubMed PMID: 31089009.

222: Sinha M, Pandey NN, Sharma A. Total anomalous pulmonary venous connection with dual drainage: A rare configuration. *J Cardiovasc Comput Tomogr*. 2019 Jul 6. pii: S1934-5925(19)30330-2. doi: 10.1016/j.jcct.2019.07.001. [Epub ahead of print] PubMed PMID: 31300374.

223: Sinha S, Agarwal MM, Vasudeva P, Khattar N, Madduri VKS, Yande S, Sarkar K, Patel A, Vaze A, Raina S, Jain A, Gupta M, Mishra N. The Urological Society of India Guidelines for the Evaluation and Management of Nonneurogenic Urinary Incontinence in Adults (Executive Summary). *Indian J Urol*. 2019 Jul-Sep;35(3):185-188. doi: 10.4103/iju.IJU_125_19. PubMed PMID: 31367068; PubMed Central PMCID: PMC6639992.

224: Sofi NY, Jain M, Kapil U, Yadav CP. Epidemiological characteristics of breast cancer patients attending a tertiary health-care institute in the National Capital Territory of India. *J Cancer Res Ther*. 2019 Jul-Sep;15(5):1087-1091. doi: 10.4103/jcrt.JCRT_868_16. PubMed PMID: 31603115.

Background: Limited data are available on the epidemiology of breast cancer (BC) in India.

Objective: To study the epidemiological characteristics of BC patients attending a tertiary care hospital in National Capital Territory of India.

Materials and Methods: A cross-sectional study was conducted and information from 320 women with confirmed BC was collected on a questionnaire for demographic profile, socioeconomic status (SES), reproductive risk factors, and family history of BC. Information on clinical presentation and staging of BC was recorded. Anthropometric assessment for body mass index (BMI) was done. Data were analyzed and presented as mean \pm standard deviation and frequency tables.

Results: The mean age at diagnosis of BC was 47 ± 10 years. Fifty-three percent of patients were illiterate or only primary school education. About 74% of patients were from urban areas. Only 11% of patients were from upper SES and 26% from lower SES. Forty-seven percent of patients had stage II followed by 36% with stage III BC. About 15% patients had experienced early menarche (<13 years of age) and 15% of women had attained late menopause (>51 years of age). About 42% of patients had <3 children and 15% patients had a family history of BC. About 38% patients were overweight and 21% were obese.

Conclusion: Other than the established risk factors, other factors such as lack of education, SES, and higher BMI were present in our study. A higher percentage of women were diagnosed with BC at later stages. There is a need for educating women about BC, self-examination of breast, and screening programs for early detection of BC.

DOI: 10.4103/jcrt.JCRT_868_16
PMID: 31603115

225: Sokhal S, Goyal K, Sokhal N, Kumar N, Kedia S. Iatrogenic Seizures during Intraoperative Transcranial Motor-Evoked Potential Monitoring. *Asian J Neurosurg*. 2019 Jul-Sep;14(3):967-969. doi: 10.4103/ajns.AJNS_96_18. PubMed PMID: 31497142; PubMed Central PMCID: PMC6703068.

Intraoperative neurophysiological monitoring (IONM) is an important tool for early detection of inadvertent damage and guide intra-operative manipulation during complex neurosurgical procedures. However trans-cranial stimulation can evoke an iatrogenic seizure and it remains a real concern while using Tc-MEP. We report a case of intra-operative seizure during transcranial electrical stimulation for motor evoked potential monitoring in a patient without seizure disorder, who underwent surgery for thoracic intra-medullary tumor excision.

DOI: 10.4103/ajns.AJNS_96_18
PMCID: PMC6703068
PMID: 31497142

226: Soni KD, Arasu T, Aggarwal R, Darlong V. A unique way of securing the tracheostomy tube in a case of facial and neck burns. *J Anaesthesiol Clin Pharmacol*. 2019 Jul-Sep;35(3):412-413. doi: 10.4103/joacp.JOACP_278_17. PubMed PMID: 31543601; PubMed Central PMCID: PMC6747993.

227: Sood A, Ahuja V, Kedia S, Midha V, Mahajan R, Mehta V, Sudhakar R, Singh A, Kumar A, Puri AS, Tantry BV, Thapa BR, Goswami B, Behera BN, Ye BD, Bansal D, Desai D, Pai G, Yattoo GN, Makharia G, Wijewantha HS, Venkataraman J, Shenoy KT, Dwivedi M, Sahu MK, Bajaj M, Abdullah M, Singh N, Singh N, Abraham P, Khosla R, Tandon R, Misra SP, Nijhawan S, Sinha SK, Bopana S, Krishnaswamy S, Joshi S, Singh SP, Bhatia S, Gupta S, Bhatia S, Ghoshal UC. Diet and inflammatory bowel disease: The Asian Working Group guidelines. *Indian J Gastroenterol*. 2019 Jun;38(3):220-246. doi: 10.1007/s12664-019-00976-1. Epub 2019 Jul 27. PubMed PMID: 31352652; PubMed Central PMCID: PMC6675761.

INTRODUCTION: These Asian Working Group guidelines on diet in inflammatory bowel disease (IBD) present a multidisciplinary focus on clinical nutrition in IBD in Asian countries.

METHODOLOGY: The guidelines are based on evidence from existing published literature; however, if objective data were lacking or inconclusive, expert opinion was considered. The conclusions and 38 recommendations have been subject to full peer review and a Delphi process in which uniformly positive responses (agree or strongly agree) were required.

RESULTS: Diet has an important role in IBD pathogenesis, and an increase in the incidence of IBD in Asian countries has paralleled changes in the dietary patterns. The present consensus endeavors to address the following topics in relation to IBD: (i) role of diet in the pathogenesis; (ii) diet as a therapy; (iii) malnutrition and nutritional assessment of the patients; (iv) dietary recommendations; (v) nutritional rehabilitation; and (vi) nutrition in special situations like surgery, pregnancy, and lactation.

CONCLUSIONS: Available objective data to guide nutritional support and primary nutritional therapy in IBD are presented as 38 recommendations.

DOI: 10.1007/s12664-019-00976-1
PMCID: PMC6675761
PMID: 31352652

228: Subbiah A, Bagchi S, Yadav RK, Mahajan S, Bhowmik D, Agarwal SK. Moxifloxacin-associated Neutropenia in a Patient Planned for Renal Transplantation. *Indian J Nephrol*. 2019 Jul-Aug;29(4):303-305. doi: 10.4103/ijn.IJN_234_18. PubMed PMID: 31423071; PubMed Central PMCID: PMC6668311.

229: Subhadarshani S, Aggarwal M, Kumar V. Symmetrical Peripheral Gangrene Due to Disseminated Intravascular Coagulation. *Dermatol Pract Concept*. 2019 Jul 31;9(3):220-221. doi: 10.5826/dpc.0903a12. eCollection 2019 Jul. PubMed PMID: 31384500; PubMed Central PMCID: PMC6659596.

230: Sudhan MD, Satyarthee GD, Joseph L, Sharma MC, Kakkar A, Sharma BS. Management and Outcome Analysis of Conus and Filum ependymoma: A Tertiary Center Study. *Asian J Neurosurg*. 2019 Jul-Sep;14(3):821-827. doi: 10.4103/ajns.AJNS_326_16. PubMed PMID: 31497108; PubMed Central PMCID: PMC6703025.

Background: Spinal ependymomas constitute approximately 2%-8% of primary adult

central nervous system tumors. Authors analyzed demographic, clinical, radiological, surgical, and histopathological factors which correlated with the postoperative neurological outcome of patients who underwent surgery for conus and filum ependymoma (CFE).

Materials and Methods: A retrospective analysis of 31 patients regarding clinical feature, imaging study, surgical management, and McCormick grading system for assessing functional neurological status was carried out, who underwent surgical management for CFE between January 2009 and April 2014. Final neurological outcome at follow-up period was correlated with various factors in search to find out probable prognostic factors affecting final neurological outcome following surgical management.

Results: The myxopapillary ependymoma was observed in 55% of cases (n = 17), while 39% cases (n = 12) had Grade II ependymoma and rest 6% (n = 2) cases had anaplastic ependymomas. The mean age was 30 years (range 7-60 years) with male to female ratio of 1:0.82. Patients predominantly presented with pain (80.65%); mean duration of symptoms was 28.61 months. Only, the preoperative McCormick grade was found to be the statistically significant prognostic factor (P = 0.045), affecting neurological outcome however, the age, sex, duration of symptoms, location of the tumor, extent of the tumor, extradural spread, degree of surgical excision, vascularity of tumor, and histopathological World Health Organization grades were not found to be significant prognostic factors in the current study.

Conclusion: The preoperative McCormick score was found to be the only statistically significant factor predicting the functional and neurological outcome after surgery, so surgical treatment should be offered early in the course of the disease to provide chance of preservation and good neurological recovery.

DOI: 10.4103/ajns.AJNS_326_16

PMCID: PMC6703025

PMID: 31497108

231: Suliankatchi Abdulkader R, Sinha DN, Jeyashree K, Rath R, Gupta PC, Kannan S, Agarwal N, Venugopal D. Trends in tobacco consumption in India 1987-2016: impact of the World Health Organization Framework Convention on Tobacco Control. *Int J Public Health*. 2019 Jul;64(6):841-851. doi: 10.1007/s00038-019-01252-x. Epub 2019 May 28. PubMed PMID: 31134319.

OBJECTIVES: We describe national and subnational trends in tobacco use over three decades in India, assess the impact of the World Health Organization's Framework Convention on Tobacco Control (FCTC) on them and draw inferences for regional tobacco control policy.

METHODS: Data from nine cross-sectional surveys conducted between 1987 and 2016 were analysed. Time trends in gender- and state-wise prevalence were derived for different forms of tobacco. To assess Framework Convention's impact, relative changes in tobacco prevalence before and after its implementation were estimated. Progress towards global noncommunicable diseases target was also measured.

RESULTS: Post-implementation of the FCTC, smoking and smokeless tobacco use declined by 52.9% and 17.6%, respectively. The tobacco product mix (exclusive smokeless/exclusive smoked/dual) underwent a reversal from 37:52:11 in 1987 to 65:22:13 in 2016. Having achieved 20.5% relative reduction since 2009, India is en route to achieving the global noncommunicable diseases target.

CONCLUSIONS: Steep declines in tobacco use have followed the implementation of FCTC in India. However, the impact has been unequal on smokeless and smoked forms. Tobacco-control policies in high smokeless burden countries should take cognizance of this pattern and design comprehensive and flexible policies.

DOI: 10.1007/s00038-019-01252-x

PMID: 31134319

232: Sullender WM, Fowler KB, Gupta V, Krishnan A, Ram Purakayastha D, Srungaram Vln R, Lafond KE, Saha S, Palomeque FS, Gargiullo P, Jain S, Lal R, Widdowson MA, Broor S. Efficacy of inactivated trivalent influenza vaccine in rural India: a 3-year cluster-randomised controlled trial. *Lancet Glob Health*. 2019 Jul;7(7):e940-e950. doi: 10.1016/S2214-109X(19)30079-8. PubMed PMID: 31200893.

BACKGROUND: Paediatric vaccination against influenza can result in indirect protection, by reducing transmission to their unvaccinated contacts. We investigated whether influenza vaccination of children would protect them and their household members in a resource-limited setting.

METHODS: We did a cluster-randomised, blinded, controlled study in three villages in India. Clusters were defined as households (ie, dwellings that shared a courtyard), and children aged 6 months to 10 years were eligible for vaccination as and when they became age-eligible throughout the study. Households were randomly assigned (1:1) by a computer-based system to intramuscular trivalent inactivated influenza vaccine (IIV3) or a control of inactivated poliovirus vaccine (IPV) in the beginning of the study; vaccination occurred once a year for 3 years. The primary efficacy outcome was laboratory-confirmed influenza in a vaccinated child with febrile acute respiratory illness, analysed in the modified intention-to-treat population (ie, children who received at least one dose of vaccine, were under surveillance, and had not an influenza infection within 15 days of last vaccine dose). The secondary outcome for indirect effectiveness (surveillance study) was febrile acute respiratory illness in an unvaccinated household member of a vaccine study participant. Data from each year (year 1: November, 2009, to October, 2010; year 2: October, 2010, to October, 2011; and year 3: October, 2011, to May, 2012) were analysed separately. Safety was analysed among all participants who were vaccinated with at least one dose of the vaccine. This trial is registered with ClinicalTrials.gov, number NCT00934245.

FINDINGS: Between Nov 1, 2009, to May 1, 2012, we enrolled 3208 households, of which 1959 had vaccine-eligible children. 1010 households were assigned to IIV3 and 949 households were assigned to IPV. In 3 years, we vaccinated 4345 children (2132 with IIV3 and 2213 with IPV) from 1868 households (968 with IIV3 and 900 with IPV) with 10 813 unvaccinated household contacts. In year 1, influenza virus was detected in 151 (10%) of 1572 IIV3 recipients and 206 (13%) of 1633 of IPV recipients (total IIV3 vaccine efficacy 25·6% [95% CI 6·8-40·6]; $p=0\cdot010$). In year 2, 105 (6%) of 1705 IIV3 recipients and 182 (10%) of 1814 IPV recipients had influenza (vaccine efficacy 41·0% [24·1-54·1]; $p<0\cdot0001$). In year 3, 20 (1%) of 1670 IIV3 recipients and 81 (5%) of 1786 IPV recipients had influenza (vaccine efficacy 74·2% [57·8-84·3]; $p<0\cdot0001$). In year 1, total vaccine efficacy against influenza A(H1N1)pdm09 was 14·5% (-20·4 to 39·3). In year 2, total vaccine efficacy against influenza A(H3N2) was 64·5% (48·5-75·5). Total vaccine efficacy against influenza B was 32·5% (11·3-48·6) in year 1, 4·9% (-38·9 to 34·9) in year 2, and 76·5% (59·4-86·4) in year 3. Indirect vaccine effectiveness was statistically significant only in year 3 (38·1% [7·4-58·6], $p=0\cdot0197$) when influenza was detected in 39 (1%) of 4323 IIV3-allocated and 60 (1%) of 4121 IPV-allocated household unvaccinated individuals. In the IIV3 group, 225 (12%) of 1632 children in year 1, 375 (22%) of 1718 in year 2, and 209 (12%) of 1673 in year 3 had an adverse reaction (compared with 216 [13%] of 1730, 380 [21%] of 1825, and 235 [13%] of 1796, respectively, in the IPV group). The most common reactions in both groups were fever and tenderness at site. No vaccine-related deaths occurred in either group.

INTERPRETATION: IIV3 provided variable direct and indirect protection against influenza infection. Indirect protection was significant during the year of highest direct protection and should be considered when quantifying the effect of vaccination programmes.

FUNDING: US Centers for Disease Control and Prevention.

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DOI: 10.1016/S2214-109X(19)30079-8

PMID: 31200893

233: Suri T, Makkar N, Ray A, Sood R. A unique case of hydropneumothorax in allergic bronchopulmonary aspergillosis. *Med Mycol Case Rep.* 2019 Jul 5;25:29-31. doi: 10.1016/j.mmcr.2019.07.003. eCollection 2019 Sep. PubMed PMID: 31338287; PubMed Central PMCID: PMC6626827.

Allergic bronchopulmonary aspergillosis (ABPA) is an immunologically mediated disease characterized by a hypersensitivity reaction to fungal colonization by *Aspergillus*. Hydropneumothoraces and bronchopleural fistulae are rare occurrences in patients with ABPA. However, the diagnosis of ABPA is important to consider, as it is easily treatable with specific therapy. We report an unusual case of a patient with ABPA who presented to us with hydropneumothorax with bronchopleural fistula.

DOI: 10.1016/j.mmcr.2019.07.003

PMCID: PMC6626827

PMID: 31338287

234: Surve A, Azad S, Venkatesh P, Kumar V, Chawla R, Gupta V, Vohra R. Choroidal Vascular Pattern in Cases of Sturge-Weber Syndrome. *Ophthalmol Retina.* 2019 Jul 22. pii: S2468-6530(19)30468-3. doi: 10.1016/j.oret.2019.07.009. [Epub ahead of print] PubMed PMID: 31523035.

PURPOSE: To study the choroidal vascular pattern in patients with Sturge-Weber syndrome (SWS) using swept-source OCT (SS-OCT).

DESIGN: Prospective comparative observational study.

PARTICIPANTS: All patients with SWS with no history of prior treatment for posterior segment pathology were included.

METHODS: Both eyes of all patients were studied using fundus imaging, SS-OCT, fundus fluorescein angiography (FFA), and indocyanine green angiography (ICG) by 2 independent observers.

MAIN OUTCOME MEASURES: The FFA and ICG were screened for any vascular abnormalities. The SS-OCT was evaluated for choroidal changes.

RESULTS: A total of 34 eyes of 17 patients with diagnosed SWS in the age group 9 to 26 years were studied. The FFA and ICG in 7 and 11 patients, respectively, showed some vascular abnormalities. SS-OCT was performed in all patients. The diffuse choroidal hemangioma (DCH) was characterized by loss of the choroidal vascular pattern, increase in the choroidal thickness and loss of visualization of the sclerochoroidal interface. Based on the FFA, ICG, and SS-OCT imaging, there were 3 patients with no DCH, 5 with bilateral DCH, and the remaining 9 patients had unilateral DCH. The detection rate was 50% clinically: 52.94% with FFA, 82.35% with ICG, and 86.36% with SS-OCT. There was substantial agreement between the 2 observers for all 3 investigations.

CONCLUSION: SS-OCT is a reliable noninvasive imaging modality for early diagnosis and follow-up of DCH over time.

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DOI: 10.1016/j.oret.2019.07.009

PMID: 31523035

235: Tandon V, Chandra PS, Singla R, Bajaj J, Kakkar A, Sharma MC, Mahapatra AK, Tripathi M. Drug Refractory Epilepsy - A Series of Lesions with Triple Pathology. *Neurol India*. 2019 Jul-Aug;67(4):1093-1096. doi: 10.4103/0028-3886.266289. PubMed PMID: 31512643.

The associations between gangliogliomas, dysembryoplastic neuroepithelial tumors (DNETs), and cortical dysplasias remain debatable. We report five cases of drug refractory epilepsy with temporal lobe lesions. On resection, histopathological examination showed distinctive areas of gangliogliomas and DNETs with cortical dysplasia. The coexistence of the above three lesions as distinct entities in a single lesion is virtually unknown. This points to the presence of a possible etiological relationship among them. Finally, we also delve into a plausible hypothesis for such a pathogenesis.

DOI: 10.4103/0028-3886.266289
PMID: 31512643

236: Tansir G, Kumar P, Pius A, Sunny SK, Soneja M. Pseudo-pseudo Meigs' syndrome: a rare presentation of systemic lupus erythematosus. *Reumatismo*. 2019 Jul 9;71(2):108-112. doi: 10.4081/reumatismo.2019.1140. PubMed PMID: 31309785.

Systemic lupus erythematosus (SLE) is a chronic inflammatory multisystem autoimmune disease. Ascites when associated with pleural effusion and raised CA-125 levels in SLE patient, is known as pseudo-pseudo Meigs' syndrome (PPMS). This is the case of a 22-year-old lady who presented with complaints of abdominal distension for one month and had a history of spontaneous abortion in the past. Abdominal imaging did not reveal any tumor and after extensive workup a diagnosis of PPMS was made. She was successfully treated with steroids, hydroxychloroquine and cyclophosphamide.

DOI: 10.4081/reumatismo.2019.1140
PMID: 31309785

237: Tanwar S, Mattoo B, Kumar U, Bhatia R. Can aberrant spinal nociception be a marker of chronicity of pain in fibromyalgia syndrome? *J Clin Neurosci*. 2019 Jul;65:17-22. doi: 10.1016/j.jocn.2019.04.029. Epub 2019 May 10. PubMed PMID: 31080004.

Pain sensitivity is a recognized feature of fibromyalgia syndrome (FMS) but the contribution of spinal nociceptive circuitry to this phenomenon is unknown. Therefore, the objectives were to study the changes in spinal nociception i.e. nociceptive flexion reflex (NFR) in patients with FMS and to investigate correlation if any, between NFR threshold, pain duration and tender points in FMS. One hundred and three patients with FMS and 74 healthy volunteers participated in the study. To record NFR, sural nerve was stimulated in the retro malleolar region and the reflex response was recorded from the short head of biceps femoris muscle. NFR was elicited at significantly lower [21.0(18.0-25.0)V] thresholds in FMS group when compared to healthy subjects [30.0(24.75-35.0)V; p=0.001] indicating hyperalgesic response to electrocutaneous stimulation in FMS patients. The latency and other parameters of NFR were comparable in both the groups. No significant correlation was found among NFR threshold and pain duration or tender points. On the basis of results of present study, it may be concluded that the functional deficit of the spinal nociceptive system can contribute to hyperalgesia in FMS. This is first study that correlates a marker of central hyper-excitability (NFR threshold) with clinical symptoms (pain duration and tender points) of FMS.

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DOI: 10.1016/j.jocn.2019.04.029
PMID: 31080004 [Indexed for MEDLINE]

238: 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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DOI: 10.1111/mcn.12857
PMID: 31216382

239: Thakar A, Sakthivel P, Prashanth A, Kumar R, Sharma SC, Kumar R. Clinical Utility of ^{68}Ga -Prostate-Specific Membrane Antigen PET/CT Scan on Postoperative Assessment of Juvenile Nasal Angiofibroma. *Clin Nucl Med.* 2019 Jul 24. doi: 10.1097/RLU.0000000000002745. [Epub ahead of print] PubMed PMID: 31348086.

Prostate-specific membrane antigen (PSMA) is expressed on the endothelial cells of tumor-associated neovasculature of various nonprostatic benign and malignant neoplasms. Positive uptake on PET/CT imaging with Ga-labeled PSMA is noted in a patient with juvenile nasal angiofibroma, and the same is noted to be absent following complete surgical excision. Ga-PSMA PET/CT may be a useful tool for juvenile nasal angiofibroma recurrence identification and in differentiating recurrence from surgical site reparative tissue.

DOI: 10.1097/RLU.0000000000002745
PMID: 31348086

240: Tripathy S, Ballal S, Yadav MP, Joshi P, Bal C, Damle NA. Coexistence of Multiple Metastatic Lesions Showing Various Grades of Differentiation in a Single Patient with Neuroendocrine Tumor of Lung as Primary: A Combined Modality Approach of $(^{68}\text{Ga})\text{-DOTANOC}$ Positron Emission Tomography/Computed Tomography and $(^{18}\text{F})\text{-Fluorodeoxyglucose}$ Positron Emission Tomography/Computed Tomography Imaging. *Indian J Nucl Med.* 2019 Jul-Sep;34(3):260–262. doi: 10.4103/ijnm.IJNM_161_18. PubMed PMID: 31293318; PubMed Central PMCID:

PMC6593945.

Neuroendocrine tumors (NETs) of gastrointestinal (GI) tract and lungs are a rare variety of tumors but given their indolent nature are quite prevalent. These tumors are mostly malignant in nature and are often diagnosed in advanced stages. GI tracts are the most common sites of NETs followed by lungs, thymus, and other less common sites being ovaries, testis, and hepatobiliary system. Nuclear medicine imaging modalities include 68Ga-DOTANOC positron emission tomography/computed tomography (PET/CT) which is sensitive for low-grade NETs and 18F-fluorodeoxyglucose (FDG) PET/CT which is more valuable for high-grade NETs. However, intermediate-grade NETs are equally sensitive to both 68Ga-DOTANOC PET/CT and 18F-FDG PET/CT.

DOI: 10.4103/ijnm.IJNM_161_18

PMCID: PMC6593945

PMID: 31293318

241: Tripathy S, Parida GK, Naswa N, Subudhi K, Sreedharan Thankarajan AR, Reddy S. Elastofibroma Dorsi: Findings on (18)F-Fluorodeoxyglucose Positron Emission Tomography-Computed Tomography. Indian J Nucl Med. 2019 Jul-Sep;34(3):258-259. doi: 10.4103/ijnm.IJNM_6_19. PubMed PMID: 31293317; PubMed Central PMCID: PMC6593937.

Elastofibroma dorsi (EFD) is a relatively rare soft-tissue pseudotumor that arises from mesenchymal tissue. We present a case of 48-year-old woman who underwent 18F fluorodeoxyglucose (FDG) positron emission tomography-computed tomography for initial staging of suspected carcinoma of the left breast. Incidental detection of soft-tissue masses showing moderate FDG uptake was seen in the bilateral infrascapular location characteristic of EFD.

DOI: 10.4103/ijnm.IJNM_6_19

PMCID: PMC6593937

PMID: 31293317

242: Tripathy S, Gupta R, Arun Raj ST, Bal C, Shamim SA. Pheochromocytoma: Positive on (131)I-MIBG Single-Photon Emission Computed Tomography-Computed Tomography and Negative on (68)Ga DOTANOC Positron Emission Tomography-Computed Tomography. Indian J Nucl Med. 2019 Jul-Sep;34(3):254-255. doi: 10.4103/ijnm.IJNM_166_18. PubMed PMID: 31293315; PubMed Central PMCID: PMC6593950.

Pheochromocytomas are tumors arising from sympathetic lineage-derived cells in adrenal medulla, and 68Ga DOTANOC positron emission tomography-computed tomography (PET-CT) has been found to be superior than 131I MIBG single-photon emission computed tomography-computed tomography (SPECT-CT) for initial localization/diagnosis of the adrenal lesion. We discuss the 68DOTANOC PET-CT and 131I MIBG SPECT-CT findings of a 24-year-old male who presented with clinical and biochemical findings suspicious of pheochromocytoma.

DOI: 10.4103/ijnm.IJNM_166_18

PMCID: PMC6593950

PMID: 31293315

243: Tripathy S, Shamim SA, Behera A, Bal C, Kumar R. Adenoid Cystic Carcinoma of Trachea: Findings on (18)F FDG Positron Emission Tomography-Computed Tomography. Indian J Nucl Med. 2019 Jul-Sep;34(3):249-250. doi: 10.4103/ijnm.IJNM_172_18. PubMed PMID: 31293313; PubMed Central PMCID: PMC6593938.

Adenoid cystic carcinoma (ACC) of the trachea is the second most common tumor of trachea after squamous cell carcinomas. It arises from the submucosal layer and predominantly has a rapid locoregional spread. We describe the 18F FDG positron emission tomography-computed tomography findings of a 51-year-old woman, a biopsy-proven case of ACC of trachea who underwent the scan for initial staging.

DOI: 10.4103/ijnm.IJNM_172_18

PMCID: PMC6593938

PMID: 31293313

244: Tripathy S, Tripathi M, Parida GK, Bal C, Shamim SA. Primary Cardiac Angiosarcoma with Extensive Visceral Metastases: Utility of (18)F-Fluorodeoxyglucose Positron Emission Tomography-Computed Tomography in Response Assessment to Sorafenib. *Indian J Nucl Med.* 2019 Jul-Sep;34(3):241-243. doi: 10.4103/ijnm.IJNM_167_18. PubMed PMID: 31293310; PubMed Central PMCID: PMC6593936.

Primary cardiac angiosarcomas although rare neoplasms remain the most common primary malignant neoplasms affecting the heart. We discuss the sequential positron-emission tomography-computed tomography findings of a 50-year-old man who was diagnosed with the metastatic cardiac angiosarcoma at the outset and developed progressive disease despite sorafenib therapy.

DOI: 10.4103/ijnm.IJNM_167_18

PMCID: PMC6593936

PMID: 31293310

245: Tripathy S, Subudhi TK, Kumar R. Stoma Site Infection Mimicking Lymphoma Recurrence: Potential Pitfall on (18)F FDG Positron Emission Tomography-Computed Tomography. *Indian J Nucl Med.* 2019 Jul-Sep;34(3):233-234. doi: 10.4103/ijnm.IJNM_5_19. PubMed PMID: 31293307; PubMed Central PMCID: PMC6593944.

FDG uptake is an unreliable tool when it comes to distinguish between infectious and malignant etiology particularly in conditions involving the lymph nodes. We describe a case of a 42-year-old man who has been operated for ileal lymphoma two decades back and now developed ileostomy site infection which masqueraded as lymphoma recurrence on 18F FDG positron emission tomography-computed tomography.

DOI: 10.4103/ijnm.IJNM_5_19

PMCID: PMC6593944

PMID: 31293307

246: Tripathy S, Parida GK, Singhal A, Shamim SA, Kumar R. Thyroid Cartilage Metastases on F-18 Fluorodeoxyglucose Positron Emission Tomography-Computed Tomography: A Tale of Two Cases with a Brief Review of Literature. *Indian J Nucl Med.* 2019 Jul-Sep;34(3):220-222. doi: 10.4103/ijnm.IJNM_34_19. PubMed PMID: 31293303; PubMed Central PMCID: PMC6593948.

Metastases to thyroid cartilage are rare entities and can often easily be missed on computed tomography (CT) scan alone. Positron emission tomography (PET)-CT imaging has overcome this diagnostic dilemma due to its ability to provide for both anatomical and functional imaging. We report two rare cases of thyroid cartilage metastases on F-18 fluorodeoxyglucose PET-CT from breast and papillary thyroid malignancies as primaries.

DOI: 10.4103/ijnm.IJNM_34_19

PMCID: PMC6593948

PMID: 31293303

247: Tripathy S, Kumar R. Role of Serial 68Ga DOTANOC PET-CT Scans in Follow-up of Metastatic Bronchial Carcinoid: 12 Year Follow-up From a Tertiary Care Institute. *Clin Nucl Med*. 2019 Jul;44(7):602-603. doi: 10.1097/RLU.0000000000002593. PubMed PMID: 31021915.

Neuroendocrine tumors are slow-growing indolent tumors and often present with metastatic disease at the outset. We hereby discuss the Ga DOTANOC PET-CT findings of a 48-year-old man who has underwent lobectomy for bronchial carcinoid and developed multiple metastatic disease thereafter with event-free survival for the last 12 years.

DOI: 10.1097/RLU.0000000000002593
PMID: 31021915 [Indexed for MEDLINE]

248: U M P, Bhatia R, Sreenivas V, Singh N, Joseph R, Dash D, Singh RK, Tripathi M, Srivastava MVP, Singh MM, Suri A, Prasad K. Validation of ICH and ICH-GS Scores in an Indian Cohort: Impact of Medical and Surgical Management. *J Stroke Cerebrovasc Dis*. 2019 Aug;28(8):2213-2220. doi: 10.1016/j.jstrokecerebrovasdis.2019.05.003. Epub 2019 Jul 10. PubMed PMID: 31151837.

OBJECTIVE: Prognostic scores help in predicting mortality and functional outcome post intracerebral hemorrhage (ICH). We aimed to validate the ICH and ICH-GS scores in a cohort of Indian patients with ICH and observe the impact of any surgical intervention on prognostication.

METHODS: This was an ambispective observational study of primary ICH cases enrolled between January 2014 and April 2018. Observed mortality on ICH and ICH GS scores for the entire cohort and individually for the medically and surgically managed patients was compared to the published mortality in the original derivation cohorts.

RESULTS: 617 patients, (464 retrospective and 153 prospective) of ICH were included. In hospital mortality and 30-day mortality was 28.7% and 28.5% respectively. There was a significant association of increasing mortality with increasing ICH and ICH-GS scores. Area under receiver operating characteristic curve for 30-day mortality was 75.9% and 74.1% for ICH and ICH-GS scores respectively. However, mortality observed at individual scores was significantly less than previously reported. Among the surgically intervened patients (n=265), both the expected mortality at baseline and discriminative ability of ICH and ICH-GS scores for 30-day mortality was significantly reduced following surgical intervention (ROC in surgically intervened groups: 59.9 (52.6-67.2) and 63(56-70) for ICH and ICH-GS scores respectively).

CONCLUSIONS: Although ICH and ICH-GS scores are valid in Indian population, mortality at individual scores is lower than previously reported. Mortality prediction using ICH and ICH GS scores is significantly modified by surgical interventions. Thus, newer prognostic tools which incorporate surgical intervention need to be developed and validated in future.

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DOI: 10.1016/j.jstrokecerebrovasdis.2019.05.003
PMID: 31151837 [Indexed for MEDLINE]

249: Vashisht KR, Arava SK, Tembhre MK, Parihar AS, Sharma VK, Das BK, Sreenivas V, Sethuraman G, Gupta S. A randomized pilot study to compare hair follicle cell suspensions prepared using trypsin alone versus trypsin in combination with collagenase type I for transplantation in vitiligo. *Clin Exp Dermatol*. 2019 Jul 30. doi: 10.1111/ced.14061. [Epub ahead of print] PubMed PMID: 31361909.

BACKGROUND: Noncultured extracted hair follicle outer root sheath cell suspension (NC-EHF-ORS-CS) is an upcoming surgical technique to treat stable vitiligo. Conventionally it employs trypsin to tap the hair follicle (HF) reservoir for autologous melanocytes and their precursors for transplantation. However, a perifollicular dermal sheath composed of type 1 collagen encases the target 'bulge' region of the HF. Adding collagenase type 1 would digest the ORS, facilitating better release of cells.

AIM: To compare the repigmentation achieved using trypsin and a combination of collagenase plus trypsin, respectively, with dermabrasion alone, and to compare cell counts, viability and composition of both suspensions.

METHODS: This was a randomized, double-blind, comparative, therapeutic trial, conducted as a pilot study on 22 patients with stable vitiligo. Three similar patches were randomized into three parallel treatment arms [(A) trypsin plus collagenase, (B) trypsin alone and (C) dermabrasion with vehicle alone]. Each patient's HF sample was divided and digested by the two methods, and transplanted as suspensions onto dermabraded patches, while a third dermabraded patch received the vehicle only. Suspensions were sent for laboratory analysis. Repigmentation was assessed over a follow-up of 6 months.

RESULTS: There was a significant increase in cell yield and comparable viability when collagenase was added. Immunohistochemical and flow cytometry studies showed a nonsignificant increase in HMB45+ melanocytes and their precursor stem cells in group A. This trend was reflected clinically in the extent of repigmentation [group A (33.22%) > B (24.31%) > C (16.59%); P = 0.13]. Adding collagenase induced significantly higher repigmentation than dermabrasion alone (P < 0.05).

CONCLUSIONS: Incorporating collagenase type I into the conventional NC-EHF-ORS-CS technique resulted in enhanced retrieval of pigment-forming cells and subsequently improved repigmentation in vitiligo.

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DOI: 10.1111/ced.14061

PMID: 31361909

250: Vishnu VY, Vinny PW. The Neurologist and Artificial Intelligence: Titans at Crossroads. *Ann Indian Acad Neurol.* 2019 Jul-Sep;22(3):264-266. doi: 10.4103/aian.AIAN_493_18. PubMed PMID: 31359934; PubMed Central PMCID: PMC6613413.

Clinical judgment to reach final diagnosis has remained a challenge since time immemorial. The present times are witness to artificial intelligence (AI) and machine learning programs competing to outperform the seasoned physician in arriving at a differential diagnosis. We discuss here the possible roles of AI in neurology.

DOI: 10.4103/aian.AIAN_493_18

PMCID: PMC6613413

PMID: 31359934

251: Viswanathan R, George S, Murhekar MV, Abraham AM, Singh MP, Jadhav SM, Nag V, Naik S, Raut C, Munivenkatappa A, Gupta M, Jagtap V, Kaduskar O, Gupta N, Sapkal GN. Comparison of two commercial ELISA kits for detection of rubella specific IgM in suspected congenital rubella syndrome cases and rubella IgG antibodies in a serosurvey of pregnant women. *Diagn Microbiol Infect Dis.* 2019 Jul;94(3):243-247. doi: 10.1016/j.diagmicrobio.2019.01.009. Epub 2019 Jan 24. PubMed PMID: 30782464.

Enzyme linked immunosorbent assay (ELISA) for antibody identification, is important for laboratory confirmation of rubella infection in different settings.

The Enzygnost rubella ELISA, widely used in the World Health Organization (WHO) Global Measles and Rubella Laboratory Network, is expensive and often unavailable. Qualitative and quantitative performance of the Euroimmun ELISA was compared with the Enzygnost ELISA, for detection of rubella specific IgM, using 283 sera collected from suspected congenital rubella syndrome (CRS) patients and IgG antibodies using 435 sera from a serosurvey among pregnant women. Good qualitative agreement was observed for detection of both rubella specific IgM (94.7% agreement and κ of 0.86) and IgG (96.3% agreement and κ of 0.84). Bland-Altman analysis for IgG yielded a mean difference of 0.781 IU/ml with 97.1% values within ± 2 SD of the mean difference. Our study findings suggest that Euroimmun ELISA may be considered for detection of rubella specific IgM in suspected CRS cases and rubella specific IgG in surveillance studies.

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DOI: 10.1016/j.diagmicrobio.2019.01.009
PMID: 30782464

252: Wundavalli L, Kumar P, Dutta S. Workload Indicators of Staffing Need as a tool to determine nurse staffing for a high volume academic Emergency Department: An observational study. *Int Emerg Nurs*. 2019 Jul 19:100780. doi: 10.1016/j.ienj.2019.06.003. [Epub ahead of print] PubMed PMID: 31331837.

INTRODUCTION: Determination of staffing requirement for an Emergency Department (ED) is often difficult due to random arrivals of a complex mix of cases, fluctuating volumes and lengths of stay. Most staffing strategies are based on patient census, lengths of stay, patient dependency or patient classification systems. However, the actual quantity of workload is seldom employed as a basis to calculate staffing.

AIM: The aim of this study was to determine the requirement of nurses for a high volume academic ED and to suggest measures to optimally schedule them.

METHODOLOGY: Structured interviews were held with ED nurses to list their health service activities, support and additional activities. Time taken for the activities was calculated based on observations and interviews. Records were perused to obtain annual service statistics. Workload Indicators of Staffing Need (WISN) described by World Health Organization was utilized to analyze and determine staffing need.

RESULTS: The study identified 34 health service activities, 21 support activities and 3 additional activities to be performed by 125 nurses with a total available working time of 187,250h for an annual volume of 105,103 patients. The WISN ratio was 0.90 which indicates that the current staff strength was inadequate. The Emergency Department requires 13 more full time staff nurses for it to function optimally. In case of reallocation of certain relevant duties to phlebotomists or nursing assistants, the requirement of staff nurses is 102. Consequently, a skill mix ratio of 82% nurses to 18% nursing assistants and phlebotomists is suggested.

DISCUSSION: The Workload Indicators of Staffing Need is a simple, easy to use method that can prospectively measure direct and indirect nursing activities and translate workload into nursing full time equivalents for the ED. This method is also useful to identify activities that do not require nursing professional skills and prescribe the skill mix of staff.

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DOI: 10.1016/j.ienj.2019.06.003
PMID: 31331837

253: Yadav HN, Sharma US, Singh S, Gupta YK. Effect of *Tribulus terrestris* in

mercuric chloride-induced renal accumulation of mercury and nephrotoxicity in rat. *J Adv Pharm Technol Res.* 2019 Jul-Sep;10(3):132-137. doi: 10.4103/japtr.JAPTR_386_18. PubMed PMID: 31334096; PubMed Central PMCID: PMC6621347.

Mercury generates free radicals and subsequently increases oxidative stress, which leads to renal injury. *Tribulus terrestris* (TT) has good anti-inflammatory and antioxidant properties. Hydroalcoholic extract of different dose of TT was evaluated against mercuric chloride-induced nephrotoxicity. Rats (n = 6) were treated with TT at doses of 100, 200, and 300 mg/kg. Drugs were administered orally for 7 days. Single dose of mercuric chloride (5 mg/kg, intraperitoneal) on the 5th day caused significant elevation of blood urea nitrogen, serum creatinine, malondialdehyde, liver fatty acid binding protein, kidney injury molecule-1, and kidney mercury level and fall in glutathione, superoxide dismutase, glutathione peroxidase, and histopathological changes in disease control as compared to normal control group (P < 0.001). Dose of TT 200 and 300 mg/kg significantly (P < 0.001) prevented the renal injury, and mercury accumulation in kidney tissues significantly decreases in higher dose, i.e., 300 mg/kg as compared to control group. Our result indicates that the treatment of TT exerted significant protection against renal damage induced by mercuric chloride possibly due to its antioxidant and anti-inflammatory properties and by decreasing the renal accumulation of mercury.

DOI: 10.4103/japtr.JAPTR_386_18
PMCID: PMC6621347
PMID: 31334096

254: Yadav RK, Ariga KK, Subbiah A, Bagchi S, Mahajan S, Bhowmik D, Agarwal SK. Novel Heterozygous Mutations of Congenital Thrombotic Thrombocytopenic Purpura: A Rare Case Report. *Indian J Nephrol.* 2019 Jul-Aug;29(4):295-297. doi: 10.4103/ijn.IJN_241_18. PubMed PMID: 31423067; PubMed Central PMCID: PMC6668320.

Hereditary thrombotic thrombocytopenic purpura (TTP) is a genetic condition caused by mutations in ADAMTS13 gene, leading to very low levels of ADAMTS13 (a disintegrin and metalloprotease with thrombospondin type I domain 13) activity. It is a rare condition associated with multiple reported mutations. Here, we describe a case of hereditary TTP with a compound novel heterozygous mutation along with secondary focal segmental glomerulosclerosis. The patient responded clinically to plasma infusions with resolution of thrombocytopenia, stabilization of renal function, and control of blood pressures. Genetic analysis of the entire family helped in the characterization of the inheritance of this mutation. Our case illustrates the need for focused genetic analysis in a subset of patients presenting with features of TTP to decide the therapeutic plan and manage accordingly.

DOI: 10.4103/ijn.IJN_241_18
PMCID: PMC6668320
PMID: 31423067

255: Yadav RK, Bhowmik D, Subbiah A, Yadav S, Bagchi S, Mahajan S, Agarwal SK. To Study the Impact of Donor Nephrectomy on Blood Pressure as Measured by Ambulatory Blood Pressure Monitoring and Renal Function. *Indian J Nephrol.* 2019 Jul-Aug;29(4):272-277. doi: 10.4103/ijn.IJN_266_18. PubMed PMID: 31423062; PubMed Central PMCID: PMC6668323.

Prospective living kidney donors need meticulous evaluation prior to kidney donation. Ambulatory blood pressure monitoring (ABPM) is considered the reference standard for diagnosing hypertension. With no prior study available in India in

this context, we undertook this study to evaluate the utility of ABPM in kidney donors and effect of donor nephrectomy on renal function. This was a prospective observational study involving healthy prospective kidney donors between 18 and 70 years with normal office blood pressure measurements (OBPM). Detailed clinical and biochemical parameters were recorded. OBPM and 24-hour ABPM was done preoperatively and 3 months following donor nephrectomy. There were 51 donors with a mean age of 46.1 ± 11.3 years, of which 40 (78.4%) were females. Preoperatively, three (5.8%) donors were hypertensive on ABPM but normal on OBPM ($P = 0.08$). Three months post nephrectomy, hypertension was present in seven (13.7%) donors by ABPM, while only two (3.9%) donors were diagnosed as hypertensive by OBPM ($P = 0.02$). Median pre-nephrectomy proteinuria was 70 mg (10 mg-180 mg) with a mean estimated glomerular filtration rate (eGFR) using the Modification of Diet in Renal Disease (MDRD) formula of 86.86 ± 19.1 ml/min. Six donors developed >300 mg/day proteinuria, and 17 (33.3%) had a 24-hour urinary protein excretion greater than 150 mg/day. Mean serum creatinine (0.79 ± 0.11 vs 1.03 ± 0.16 mg/dl) significantly increased post donation, more so in donors >55 years of age (1.14 ± 0.25 mg/dl). Our study shows that in transplant donors, ABPM is better for diagnosing hypertension, which otherwise remains masked in 10% of the donors on routine OBPM. Significance of post-nephrectomy hypertension and increasing proteinuria needs further evaluation.

DOI: 10.4103/ijn.IJN_266_18

PMCID: PMC6668323

PMID: 31423062

256: Yelamarthy PKK, Chhabra HS, Vaccaro A, Vishwakarma G, Kluger P, Nanda A, Abel R, Tan WF, Gardner B, Chandra PS, Chatterjee S, Kahraman S, Naderi S, Basu S, Theron F. Management and prognosis of acute traumatic cervical central cord syndrome: systematic review and Spinal Cord Society-Spine Trauma Study Group position statement. *Eur Spine J.* 2019 Oct;28(10):2390-2407. doi: 10.1007/s00586-019-06085-z. Epub 2019 Jul 31. PubMed PMID: 31367852.

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.

DOI: 10.1007/s00586-019-06085-z
PMID: 31367852