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

1: Aathira R, Gulati S, Tripathi M, Shukla G, Chakrabarty B, Sapra S, Dang N, Gupta A, Kabra M, Pandey RM. Prevalence of Sleep Abnormalities in Indian Children With Autism Spectrum Disorder: A Cross-Sectional Study. Pediatr Neurol. 2017 Sep;74:62-67. doi: 10.1016/j.pediatrneurol.2017.05.019. Epub 2017 May 31. PubMed PMID: 28739359.

BACKGROUND: The prevalence of autism spectrum disorder (ASD) is on the rise. Apart from the core behavioral issues of impaired communication, impaired social interaction, and restricted and/or repeated behavioral phenotype, comorbidities like sleep problems are increasingly getting recognized as important determinants of management and overall quality of life.

METHODS: This study was conducted in a tertiary care teaching hospital in northern India over a two year period. Children diagnosed with ASD and normally developing children (control subjects) aged 3 to 10 years were enrolled in the study. Both groups underwent sleep evaluation based on the Children's Sleep Habit Questionnaire. Children with ASD also underwent polysomnography, Childhood Autism Rating Scale, Childhood Behavioral Checklist, and Developmental Profile 3 assessments.

RESULTS: The prevalence of poor sleepers among children with ASD and control subjects was 77.5% (confidence interval 66 to 86.5). and 29.2% (confidence interval 18.6 to 41.5), respectively (P < 0.001). The salient findings on polysomnography were reduced sleep efficiency, decreased rapid eye movement and slow wave sleep duration, and desaturation index>1. The Childhood Behavioral Checklist score was significantly high in poor sleepers compared with good sleepers on Children's Sleep Habit Questionnaire (P = 0.004). There was no correlation of Childhood Autism Rating Scale or Developmental Profile 3 score with sleep problems in children with ASD.

CONCLUSIONS: Nearly three fourths of children with ASD have sleep abnormalities with a possible effect on the behavioral phenotype. The polysomnographic findings provide further insight with opportunity for pharmacological interventions. Screening for sleep problems is imperative for the appropriate management and overall improvement in quality of life in children with ASD.

DOI: 10.1016/j.pediatrneurol.2017.05.019
PMID: 28739359

2: Agarwal K, Hariprasad G, Rani K, Sharma U, Mathur SR, Seenu V, Parshad R, Jagannathan NR. Is there an association between enhanced choline and Î²-catenin pathway in breast cancer? A pilot study by MR Spectroscopy and ELISA. Sci Rep. 2017 May 22;7(1):2221. doi: 10.1038/s41598-017-01459-z. PubMed PMID: 28533512; PubMed Central PMCID: PMC5440410.

Total choline (tCho) was documented as a biomarker for breast cancer diagnosis by in vivo MRS. To understand the molecular mechanisms behind elevated tCho in breast cancer, an association of tCho with β-catenin and cyclin D1 was evaluated. Hundred fractions from 20 malignant, 10 benign and 20 non-involved breast tissues were isolated. Cytosolic and nuclear expressions of β-catenin and cyclin D1 were estimated using ELISA. Higher tCho was seen in malignant compared to benign tissues. Malignant tissues showed higher cytosolic and nuclear β-catenin expressions than benign and non-involved tissues. Within malignant tissues, β-catenin and cyclin D1 expressions were higher in the nucleus than cytosol. Cyclin D1 expression was higher in the cytosolic fractions of benign and

non-involved than malignant tissues. Furthermore, in malignant tissues, tCho showed a positive correlation with the cytosolic and nuclear expression of β-catenin and cyclin D1 and also a correlation between nuclear expressions of both these proteins was seen. Higher cytosolic β-catenin expression was seen in progesterone receptor negative than positive patients. Results provide an evidence of correlation between non-invasive biomarker, tCho and the Wnt/β-catenin pathway. The findings explain the molecular mechanism of tCho elevation which may facilitate exploration of additional therapeutic targets for breast cancer.

DOI: 10.1038/s41598-017-01459-z
PMCID: PMC5440410
PMID: 28533512

3: Akhter MS, Biswas A, Abdullah SM, Behari M, Saxena R. The Role of PAI-1 4G/5G Promoter Polymorphism and Its Levels in the Development of Ischemic Stroke in Young Indian Population. Clin Appl Thromb Hemost. 2017 Nov;23(8):1071-1076. doi: 10.1177/1076029617705728. Epub 2017 May 1. PubMed PMID: 28460568.

The plasminogen activator inhibitor-1 (PAI-1) gene has been found to be associated with the pathogenesis and progression of vascular diseases including stroke. A 4G/5G, PAI-1 gene polymorphism has been found to be associated with the plasma PAI-1 levels in different ethnic populations but results are still controversial. The aim of this study was to determine the potential association of 4G/5G polymorphism and plasma PAI-1 levels in the development of ischemic stroke (IS) in young Asian Indians. One hundred patients with IS and an equal number of age- and sex-matched controls were studied. The 4G/5G polymorphism was genotyped in the study population through allele-specific polymerase chain reaction. Plasma PAI-1 levels were evaluated using a commercial kit. The PAI-1 levels were significantly higher in patients when compared to the controls (P = .03). The variant 4G allele for the PAI-I 4G/5G polymorphism showed both genotypic (P = .0013, $\chi(2)$ = 10.303; odds ratio [OR] = 3.75) as well as allelic association (P = .0004, $\chi(2)$ = 12.273; OR = 1.99) with IS. The homozygous variant 4G/4G also was found to be associated with the higher PAI-1 levels (0.005). The variant allele 4G of PAI-1 4G/5G polymorphism and higher plasma PAI-1 levels were found to be significantly associated with IS in young Asian Indians.

DOI: 10.1177/1076029617705728
PMID: 28460568

4: Appunni S, Anand V, Khandelwal M, Seth A, Mathur S, Sharma A. Altered expression of small leucine-rich proteoglycans (Decorin, Biglycan and Lumican): Plausible diagnostic marker in urothelial carcinoma of bladder. Tumour Biol. 2017 May;39(5):1010428317699112. doi: 10.1177/1010428317699112. PubMed PMID: 28459201.

Small leucine-rich proteoglycans are components of extracellular matrix that regulates neoplastic transformation. Among small leucine rich proteoglycans, Decorin, Biglycan and Lumican are most commonly implicated markers, and their expression is well studied in various malignancies. In this novel study, we have collectively evaluated expression of these three molecules in urothelial carcinoma of bladder. Thirty patients of confirmed untreated bladder cancer, 30 healthy controls for blood and 30 controls for adjacent non-tumour tissue were enrolled. Blood was collected from all subjects and tumour/adjacent normal tissue was obtained from the patients. Circulatory levels were estimated by enzyme-linked immunosorbent assay, relative messenger RNA expression by quantitative polymerase chain reaction and protein expression by immunohistochemistry and western-blotting. Circulatory levels of Biglycan (p = 0.0038) and Lumican (p < 0.0001) were significantly elevated, and that of Decorin

($p < 0.0001$) was significantly reduced in patients as compared with controls. Protein expression by immunohistochemistry and western-blotting showed elevated expression of Lumican and Biglycan and lower expression of Decorin in urothelial carcinoma of bladder. Quantitative polymerase chain reaction for messenger RNA expression from tissue specimens revealed significantly higher expression of Biglycan ($p = 0.0008$) and Lumican ($p = 0.01$) and lower expression of Decorin ($p < 0.0001$) in urothelial carcinoma of bladder. Out of all molecules receiver operating characteristic curve showed that the 0.207 ng/ml cut-off of serum Lumican provided optimum sensitivity (90.0%) and specificity (90.0%). Significant alteration of matrix small leucine-rich proteoglycans in urothelial carcinoma of bladder was observed. Higher expression of Lumican in Bladder cancer patients with the cut-off value of highest optimum sensitivity and specificity shows its importance as a potential non-invasive marker for early detection of UBC following further validation in large patient cohort.

DOI: 10.1177/1010428317699112
PMID: 28459201 [Indexed for MEDLINE]

5: Arora C, Sinha B, Malhotra A, Ranjan P. Development and Validation of Health Education Tools and Evaluation Questionnaires for Improving Patient Care in Lifestyle Related Diseases. J Clin Diagn Res. 2017 May;11(5):JE06-JE09. doi: 10.7860/JCDR/2017/28197.9946. Epub 2017 May 1. Review. PubMed PMID: 28658806; PubMed Central PMCID: PMC5483708.

Lifestyle related diseases continue to be a significant burden on the health care system. Health education is a combination of educational strategies that promote voluntary adoption of healthy lifestyle choices and dietary behaviour. The use of simple and validated education and evaluation tools is now increasing in routine clinical practice to aid health status evaluation and communication between the patient, dietitian and the health care provider. Development of effective health education materials is a systematic process which starts with setting up the goals for education, followed by literature review and focus group discussion, content selection, designing the rough draft, seeking expert comments and validation. Questionnaire development should follow a logical and structured approach. Item generation should be based on extensive literature search and target group participation. Validation by the experts makes the questionnaire more meaningful, trustworthy and applicable. Considerable effort goes into designing and testing of these tools in order to ensure that they are effective. For enhancing clinical, dietetic and educational practice, it is pertinent to learn the process of developing these tools scientifically.

DOI: 10.7860/JCDR/2017/28197.9946
PMCID: PMC5483708 [Available on 2017-07-01]
PMID: 28658806

6: Arora NK, Swaminathan S, Mohapatra A, Gopalan HS, Katoch VM, Bhan MK, Rasaily R, Shekhar C, Thavaraj V, Roy M, Das MK, Wazny K, Kumar R, Khera A, Bhatla N, Jain V, Laxmaiah A, Nair MKC, Paul VK, Ramachandran P, Ramji S, Vaidya U, Verma IC, Shah D, Bahl R, Qazi S, Rudan I, Black RE; ICMR INCLEN Research Priority Setting Network. Research priorities in Maternal, Newborn, & Child Health & Nutrition for India: An Indian Council of Medical Research-INCLEN Initiative. Indian J Med Res. 2017 May;145(5):611-622. doi: 10.4103/ijmr.IJMR_139_17. PubMed PMID: 28948951; PubMed Central PMCID: PMC5644295.

In India, research prioritization in Maternal, Newborn, and Child Health and Nutrition (MNCHN) themes has traditionally involved only a handful of experts mostly from major cities. The Indian Council of Medical Research (ICMR)-INCLEN collaboration undertook a nationwide exercise engaging faculty from 256 institutions to identify top research priorities in the MNCHN themes for

2016-2025. The Child Health and Nutrition Research Initiative method of priority setting was adapted. The context of the exercise was defined by a National Steering Group (NSG) and guided by four Thematic Research Subcommittees. Research ideas were pooled from 498 experts located in different parts of India, iteratively consolidated into research options, scored by 893 experts against five pre-defined criteria (answerability, relevance, equity, investment and innovation) and weighed by a larger reference group. Ranked lists of priorities were generated for each of the four themes at national and three subnational (regional) levels [Empowered Action Group & North-Eastern States, Southern and Western States, & Northern States (including West Bengal)]. Research priorities differed between regions and from overall national priorities. Delivery domain of research which included implementation research constituted about 70 per cent of the top ten research options under all four themes. The results were endorsed in the NSG meeting. There was unanimity that the research priorities should be considered by different governmental and non-governmental agencies for investment with prioritization on implementation research and issues cutting across themes.

DOI: 10.4103/ijmr.IJMR_139_17
PMCID: PMC5644295
PMID: 28948951

7: Arora U, Ananthakrishnan AN, Kedia S, Bopana S, Mouli PV, Yadav DP, Makharia GK, Yajnik V, Ahuja V. Effect of oral tobacco use and smoking on outcomes of Crohn's disease in India. J Gastroenterol Hepatol. 2017 May 5. doi: 10.1111/jgh.13815. [Epub ahead of print] PubMed PMID: 28475826.

INTRODUCTION: Smoking has been linked with adverse outcomes in Crohn's disease(CD), however it is not known whether oral tobacco use affects disease outcomes in these patients. The study aimed to assess the association between smoking or oral tobacco(OT) and outcomes in CD.
METHODS: Retrospective analysis was performed on prospectively maintained records of CD patients from 2004-2016. The parameters assessed included disease characteristics at baseline(location, behavior, age at onset, perianal disease, extra-intestinal manifestations), course pattern and outcomes (surgery, hospitalizations, immunomodulator or biologics use, and steroid requirement).
RESULTS: 426 patients were included(mean age:39.9 years; 60% males; median follow up: 71 months). 40 patients were ever-OT users and 59 were ever-smokers, ever-use being defined as daily use for atleast 2 years. OT use was associated with male sex and smoking. Both OT use and smoking had no effect on baseline characteristics, but upper GI disease was less common in ever-smokers. Both OT use and smoking did not have any effect on surgery, hospitalizations, immunomodulator and biologic use. Similarly, no association was found between these outcomes and duration, daily and cumulative exposure to tobacco. Current but not former tobacco use in both smoked (aOR=2.59[1.22-5.49]), and OT(aOR=2.97[1.03-8.6]) forms increased risk of hospitalizations.
CONCLUSION: Oral tobacco use and smoking had no significant detrimental effect on disease phenotype or medical and surgical requirements in CD in Indian patients, affirming other non-caucasian studies that found lack of effect of smoking. However, current tobacco use in any form was associated with hospitalization during follow up.

DOI: 10.1111/jgh.13815
PMID: 28475826

8: Bagri NK, Bagri N, Jana M, Gupta AK, Wadhwa N, Lodha R, Kabra SK, Chandran A, Aneja S, Chaturvedi MK, Sodhi J, Fitzwater SP, Chandra J, Rath B, Kainth US,

Saini S, Black RE, Santosham M, Bhatnagar S. Efficacy of Oral Zinc Supplementation in Radiologically Confirmed Pneumonia: Secondary Analysis of a Randomized Controlled Trial. J Trop Pediatr. 2017 May 30. doi: 10.1093/tropej/fmx036. [Epub ahead of print] PubMed PMID: 28575379.

Objective: To evaluate the effect of zinc as an adjuvant therapy in radiologically confirmed pneumonia in children 2-24 months of age.
Patients and Methods: We analyzed data of 212 children with pneumonia for whom chest X-ray films were available at enrollment and at least two radiologists agreed on the diagnosis of pneumonia. We compared the time to recovery in the two groups (n =121, zinc group and n =91, placebo group) using a Cox proportional hazards regression model.
Results: Time to recovery was similar in both groups [median interquartile range: zinc, 84 h (64, 140 h); placebo, 85 h (65, 140 h)]. The absolute risk reduction for treatment failure was 5.2% (95% confidence interval: -4.8, 15.1) with zinc supplementation.
Conclusion: There was no significant beneficial effect of zinc on the duration of recovery or risk of treatment failure in children with radiologically confirmed pneumonia.

DOI: 10.1093/tropej/fmx036
PMID: 28575379

9: Balhara YPS, Kalra S. Indian and American Guidance on Psychosocial Care of Persons with Diabetes. Indian J Endocrinol Metab. 2017 May-Jun;21(3):486-487. doi: 10.4103/ijem.IJEM_545_16. PubMed PMID: 28553613; PubMed Central PMCID: PMC5434741.

10: Bamola VD, Ghosh A, Kapardar RK, Lal B, Cheema S, Sarma P, Chaudhry R. Gut microbial diversity in health and disease: experience of healthy Indian subjects, and colon carcinoma and inflammatory bowel disease patients. Microb Ecol Health Dis. 2017 May 19;28(1):1322447. doi: 10.1080/16512235.2017.1322447. eCollection 2017. PubMed PMID: 28588430; PubMed Central PMCID: PMC5444350.

Background: The intestinal microbiota, through complex interactions with the gut mucosa, play a key role in the pathogenesis of colon carcinoma and inflammatory bowel disease (IBD). The disease condition and dietary habits both influence gut microbial diversity. Objective: The aim of this study was to assess the gut microbial profile of healthy subjects and patients with colon carcinoma and IBD. Healthy subjects included 'Indian vegetarians/lactovegetarians', who eat plant produce, milk and milk products, and 'Indian non-vegetarians', who eat plant produce, milk and milk products, certain meats and fish, and the eggs of certain birds and fish. 'Indian vegetarians' are different from 'vegans', who do not eat any foods derived wholly or partly from animals, including milk products. Design: Stool samples were collected from healthy Indian vegetarians/lactovegetarians and non-vegetarians, and colon cancer and IBD patients. Clonal libraries of 16S ribosomal DNA (rDNA) of bacteria were created from each sample. Clones were sequenced from one representative sample of each group. Approximately 500 white colonies were picked at random from each sample and 100 colonies were sequenced after amplified rDNA restriction analysis. Results: The dominant phylum from the healthy vegetarian was Firmicutes (34%), followed by Bacteroidetes (15%). The balance was reversed in the healthy non-vegetarian (Bacteroidetes 84%, Firmicutes 4%; ratio 21:1). The colon cancer and IBD patients had higher percentages of Bacteroidetes (55% in both) than Firmicutes (26% and 12%, respectively) but lower Bacteroidetes:Firmicutes ratios (3.8:1 and 2.4:1, respectively) than the healthy non-vegetarian. Bacterial phyla of Verrucomicrobiota and Actinobacteria were detected in 23% and 5% of IBD and colon patients, respectively. Conclusions:

Ribosomal Database Project profiling of gut flora in this study population showed remarkable differences, with unique diversity attributed to different diets and disease conditions.

DOI: 10.1080/16512235.2017.1322447
PMCID: PMC5444350
PMID: 28588430

11: Banerjee J, Pradhan R, Gupta A, Kumar R, Sahu V, Upadhyay AD, Chaterjee P, Dwivedi S, Dey S, Dey AB. CDK4 in lung, and head and neck cancers in old age: evaluation as a biomarker. Clin Transl Oncol. 2017 May;19(5):571-578. doi: 10.1007/s12094-016-1565-2. Epub 2016 Nov 4. PubMed PMID: 27815686.

BACKGROUND: Cyclin dependent kinases (CDK) are key factors in promoting the initiation and development of tumors. These kinases are important for maintenance of mitochondrial biogenesis and imbalance in their expression in old age may lead to the oxidative stress. Lung cancer (LC), and head and neck squamous cell carcinoma (HNSCC) are two very prominent cancers in older Indians. Both the cancers are showing increasing trend in older population. The present study assessed serum concentration of one of the kinases; CDK4 in older LC and HNSCC patients.
METHODS: The study included 100 subjects each of LC and HNSCC; and older subjects without cancer or any major health problems as controls. Serum CDK4 concentration was estimated using real-time label-free Surface plasmon resonance (SPR) and was verified by western blot.
RESULTS: Significant elevation in serum CDK4 was observed in cases with LC and HNSCC compared to controls. HNSCC patients with higher CDK4 expression had distinctly shorter survival than patients with comparatively lower CDK4 expression. No such difference was observed in LC patients. The germ line mutation study of this gene in Exon-2 was performed and none was observed among cases and controls.
CONCLUSION: It can be concluded that older patients with HNSCC and lung cancer have raised serums CDK4 levels, which has the potential to emerge as a biomarker in clinical practice.

DOI: 10.1007/s12094-016-1565-2
PMID: 27815686 [Indexed for MEDLINE]

12: Bansal P, Malik MA, Das SN, Kaur J. Tinospora Cordifolia Induces Cell Cycle Arrest in Human Oral Squamous Cell Carcinoma Cells. Gulf J Oncolog. 2017 May;1(24):10-14. PubMed PMID: 28797995.

Natural products with medicinal value are gradually gaining importance in clinical research due to their well-known property of no side effects as compared to drugs. Tinospora cordifolia (Guduchi) has been used for centuries in Ayurvedic system of medicine for treating various ailments including cancer. In present study, we found that the Tinospora cordifolia extracts (TCE) induced inhibition of proliferation of KB cells was associated with arrest of G0/G1-phase of cell cycle. The effectiveness of TCE in checking the growth of KB cells without altering the growth of normal peripheral blood mononuclear cells (PBMC) indicates that Tinospora cordifolia has differential effect on normal and malignant cells hence, it may have therapeutic potential in cancer.

PMID: 28797995

13: Bansal P, Chawla R, Sharma A. Pediatric Choroidal Coloboma with Macular Hole at the Edge of the Coloboma. Ophthalmology. 2017 May;124(5):666. doi: 10.1016/j.ophtha.2016.11.005. PubMed PMID: 28433125.

14: Basu A, Chadda R, Sood M, Rizwan SA. Pre-treatment factor structures of the Montgomery and Ã…sberg Depression Rating scale as predictors of response to escitalopram in Indian patients with non-psychotic major depressive disorder. Asian J Psychiatr. 2017 Aug;28:154-159. doi: 10.1016/j.ajp.2017.04.029. Epub 2017 May 15. PubMed PMID: 28784374.

BACKGROUND: Major Depressive Disorder (MDD) is a broad heterogeneous construct resolving into several symptom-clusters by factor analysis. The aim was to find the factor structures of MDD as per Montgomery and Asberg Depression Rating Scale (MADRS) and whether they predict escitalopram response.
METHODS: In a longitudinal study at a tertiary institute in north India, 116 adult out-patients with non-psychotic unipolar MDD were assessed with MADRS before and after treatment with escitalopram (10-20mg) over 6-8 weeks for drug response.
RESULTS: For total 116 patients pre-treatment four factor structures of MADRS extracted by principal component analysis with varimax rotation altogether explained a variance of 57%: first factor 'detachment' (concentration difficulty, lassitude, inability to feel); second factor 'psychic anxiety' (suicidal thoughts and inner tension); third 'mood-pessimism' (apparent sadness, reported sadness, pessimistic thoughts) and fourth 'vegetative' (decreased sleep, appetite). Eighty patients (68.9%) who completed the study had mean age 35.37±10.9 yrs, majority were male (57.5%), with mean pre-treatment MADRS score 28.77±5.18 and majority (65%) having moderate severity (MADRS <30). Among them 56 (70%) responded to escitalopram. At the end of the treatment there were significant changes in all the 4 factor structures ($p<0.01$). Vegetative function was an important predictor of response ($p<0.01$, odd's ratio: 1.3 [1.1-1.6] 95% CI). Melancholia significantly predicted non-response ($p=0.04$).
CONCLUSIONS: Non-psychotic unipolar major depression having moderate severity in north Indian patients as per MADRS resolved into four factor-structures all significantly improved with adequate escitalopram treatment. Understanding the factor structure is important as they can be important predictor of escitalopram response.

DOI: 10.1016/j.ajp.2017.04.029
PMID: 28784374

15: Bhandari M, Gandhi AK, Devnani B, Kumar P, Sharma DN, Julka PK. Comparative Study of Adjuvant Temozolomide Six Cycles Versus Extended 12 Cycles in Newly Diagnosed Glioblastoma Multiforme. J Clin Diagn Res. 2017 May;11(5):XC04-XC08. doi: 10.7860/JCDR/2017/27611.9945. Epub 2017 May 1. PubMed PMID: 28658891; PubMed Central PMCID: PMC5483793.

INTRODUCTION: Studies have shown promising survival with the use of Extended Temozolomide (E-TMZ) as compared to Conventional six cycles of Temozolomide (C-TMZ) in malignant gliomas; however, the reports are mostly limited to retrospective studies with significant bias.
AIM: This study assesses the impact of six versus 12 cycles of adjuvant Temozolomide (TMZ) on Overall Survival (OS) in newly diagnosed postoperative patients of Glioblastoma Multiforme (GBM).
MATERIALS AND METHODS: Between January 2012 and July 2013, 40 postoperative patients of GBM between age 18-65 years and Karnofsky Performance Score (KPS) ≥70 were included. Patients were randomized to receive radiation (60 Gray in 30 fractions over six weeks) with concomitant TMZ (75 mg/m(2)/day) and adjuvant therapy with either six (C-TMZ arm) or 12 cycles (E-TMZ arm) of TMZ (150-200 mg/m(2) for five days, repeated four weekly). Twenty patients were treated in

each arm. Toxicity was assessed using Common Terminology Criteria for Adverse Events (CTCAE) version 3.0. OS and Progression Free Survival (PFS) were calculated from the time of diagnosis. Kaplan Meier method was used for survival analysis. A p-value of <0.05 was taken as significant and SPSS version 12.0 was used for all statistical analysis.
RESULTS: Median number of adjuvant TMZ cycles was six and 12 in C-TMZ and E-TMZ arm respectively. Overall, 5% and 15% patients respectively in C-TMZ and E-TMZ arm had haematological toxicity ≥ 3 in grade. Median follow up in C-TMZ and E-TMZ arm were 14.65 months and 19.85 months. Median PFS was 12.8 months and 16.8 months in C-TMZ and E-TMZ arm respectively (p=0.069). Median OS was 15.4 months vs. 23.8 months in C-TMZ and E-TMZ arm respectively (p=0.044).
CONCLUSION: Our study showed that E-TMZ is well tolerated and leads to a significant increase in PFS as well as OS in newly diagnosed patients of GBM. Further prospective randomized studies are needed to validate the findings of our study.

DOI: 10.7860/JCDR/2017/27611.9945
PMCID: PMC5483793 [Available on 2017-07-01]
PMID: 28658891

16: Bhari N, Sahni K, Arava S. Bleeding erythematous papules over nose in a middle-aged man. Int J Dermatol. 2017 May;56(5):481-482. doi: 10.1111/ijd.13412. Epub 2016 Nov 4. PubMed PMID: 27813078.

17: Bhatt S, Mishra B, Tandon A, Manchanda S, Parthsarathy G. Superior Mesenteric Artery Syndrome in association with Abdominal Tuberculosis: An Eye Opener. Malays J Med Sci. 2017 May;24(3):96-100. doi: 10.21315/mjms2017.24.3.12. Epub 2017 Jun 30. PubMed PMID: 28814938; PubMed Central PMCID: PMC5545623.

Superior Mesenteric Artery Syndrome (SMAS) is a rare clinical entity presenting as acute or chronic upper gastrointestinal obstruction. It occurs due to compression of third part of duodenum between abdominal aorta and overlying superior mesenteric artery caused by a decrease in angle between the two vessels. Rapid loss of retroperitoneal fat, in conditions leading to severe weight loss is the main factor responsible for this disorder. Superior mesenteric artery syndrome in association with abdominal tuberculosis has not been reported earlier to the best of our knowledge. Therefore, an unknown cause (SMAS) of upper gastrointestinal obstruction in a patient of abdominal tuberculosis is being presented for the first time through this case report. An imaging diagnosis of SMAS was made on contrast enhanced CT abdomen which also confirmed the clinical suspicion of abdominal tuberculosis in the patient. The patient was managed conservatively and recovered without requiring any surgical intervention for the obstructive symptoms.

DOI: 10.21315/mjms2017.24.3.12
PMCID: PMC5545623
PMID: 28814938

18: Bhoi D, Dey M, Naskar S, Talawar P. Early diagnosis of a nearly missed complication made by anatomical landmark guided internal jugular vein canulation. Asian J Anesthesiol. 2017 Jun;55(2):48-49. doi: 10.1016/j.aja.2017.05.001. Epub 2017 May 31. PubMed PMID: 28971807.

19: Bindal S, Sharma S, Singh TP, Gupta R. Evolving transpeptidase and hydrolytic variants of Î³-glutamyl transpeptidase from Bacillus licheniformis by targeted mutations of conserved residue Arg109 and their biotechnological relevance. J Biotechnol. 2017 May 10;249:82-90. doi: 10.1016/j.jbiotec.2017.03.034. Epub 2017

Mar 30. PubMed PMID: 28365292.

γ-Glutamyl transpeptidase (GGT) catalyzes the transfer of the γ-glutamyl moiety from donor compounds such as l-glutamine (Gln) and glutathione (GSH) to an acceptor. During the biosynthesis of various γ-glutamyl-containing compounds using GGT enzyme, auto-transpeptidation reaction leads to the formation of unwanted byproducts. Therefore, in order to alter the auto-transpeptidase activity of the GGT enzyme, the binding affinity of Gln should be modified. Structural studies of the Bacillus licheniformis GGT (BlGT) complexed with the glutamic acid has shown that glutamic acid has strong ionic interactions through its α-carboxlic group with the guanidine moiety of Arg109. This interaction appears to be an important contributor for the binding affinity of Gln. In view of this, six mutants of Bacillus licheniformis ER15 GGT (BlGGT) viz. Arg109Lys, Arg109Ser, Arg109Met, Arg109Leu, Arg109Glu and Arg109Phe were prepared. As seen from the structure of BlGT, the mutation of Arg109 to Lys109 may reduce the affinity for Gln to some extent, whereas the other mutations are expected to lower the affinity much more. Biophysical characterization and functional studies revealed that Arg109Lys mutant has increased transpeptidation activity and catalytic efficiency than the other mutants. The Arg109Lys mutant showed high conversion rates for l-theanine synthesis as well. Moreover, the Arg109Met mutant showed increased hydrolytic activity as it completely altered the binding of Gln at the active site. Also, the salt stability of the enzyme was significantly improved on replacing Arg109 by Met109 which is required for hydrolytic applications of GGTs in food industries.

DOI: 10.1016/j.jbiotec.2017.03.034
PMID: 28365292

20: Bisht S, Faiq M, Tolahunase M, Dada R. Oxidative stress and male infertility. Nat Rev Urol. 2017 Aug;14(8):470-485. doi: 10.1038/nrurol.2017.69. Epub 2017 May 16. Review. PubMed PMID: 28508879.

DNA damage, largely owing to oxidative stress, is a leading cause of defective sperm function. High levels of oxidative stress result in damage to sperm DNA, RNA transcripts, and telomeres and, therefore might provide a common underlying aetiology of male infertility and recurrent pregnancy loss, in addition to congenital malformations, complex neuropsychiatric disorders, and childhood cancers in children fathered by men with defective sperm cells. Spermatozoa are highly vulnerable to oxidative stress owing to limited levels of antioxidant defence and a single, limited DNA-damage detection and repair mechanism. Oxidative stress is predominantly caused by a host of lifestyle-related factors, the majority of which are modifiable. Antioxidant regimens and lifestyle modifications could both be plausible therapeutic approaches that enable the burden of oxidative-stress-induced male factor infertility to be overcome. Lifestyle interventions including yoga and meditation can substantially improve the integrity of sperm DNA by reducing levels of oxidative DNA damage, regulating oxidative stress and by increasing the expression of genes responsible for DNA repair, cell-cycle control and anti-inflammatory effects. Oxidative stress is caused by various modifiable factors, and the use of simple interventions can decrease levels of oxidative stress, and therefore reduce the incidence of both infertility and complex diseases in the resultant offspring.

DOI: 10.1038/nrurol.2017.69
PMID: 28508879

21: Biswas A, Julka PK, Bakhshi S, Singh M, Rath GK. Treatment Outcome in Patients with Primary Central Nervous System Germ Cell Tumour: Clinical

Experience from a Regional Cancer Centre in North India. Pediatr Neurosurg. 2017;52(4):240-249. doi: 10.1159/000474946. Epub 2017 May 25. PubMed PMID: 28538229.

BACKGROUND: Primary intracranial germ cell tumour is a rare entity and constitutes 2-3% of all paediatric brain tumours in Western countries. We herein intend to report the clinical features and treatment outcome of patients with primary central nervous system germ cell tumour treated at our institute.
METHODS: Clinical data were collected by retrospective chart review from 2006 to 2012. Histopathology slides were reviewed and relevant immunohistochemistry stains were done. Overall survival (OS) and progression-free survival (PFS) were analysed by the Kaplan-Meier product-limit method.
RESULTS: Twenty patients met the study criterion (male:female = 7:3). Median age at presentation was 13 years. Tumour location was pineal in 10 patients, suprasellar in 6, thalamic in 2, basal ganglion in 1, and spinal in 1. Leptomeningeal spread was noted in 1 patient at presentation. Surgical resection was gross-total in 7 patients (35%), near-total in 2 (10%), subtotal in 4 (20%), and limited to biopsy in 6 (30%). The tumours were germinomatous, non-germinomatous, and of mixed germ cell subtype in 17 patients (85%), 2 patients (10%), and 1 patient (5%), respectively. Systemic chemotherapy (median of 4 cycles) was given to 19 patients (95%). The common regimens used were a combination of bleomycin, etoposide and cisplatin (BEP) in 14 patients (70%) and etoposide and cisplatin (EP) in 5 patients (25%). Radiation therapy (40-50 Gy in conventional fractionation; median of 42 Gy) was delivered to 17 patients (85%): local radiation in 6 and whole ventricular, whole brain, and craniospinal irradiation followed by a boost in 5, 3, and 3 patients, respectively. After a median follow-up of 44.52 months, 17 patients (85%) were in complete response and 3 (15%) had progressive disease. Death and disease recurrence were noted in 6 patients (30%) and 1 patient, respectively. Median OS and PFS were not reached. The actuarial rates of OS at 3 and 5 years were 75.8 and 68.9%, respectively. The actuarial rates of PFS at both 3 and 5 years were 81.6%.
CONCLUSION: Multimodality treatment consisting of limited resection followed by platinum-based systemic chemotherapy and radiotherapy (40-50 Gy) is a reasonable treatment strategy in patients of primary central nervous system germ cell tumour in a developing nation.

DOI: 10.1159/000474946
PMID: 28538229

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The modified acid fast staining technique is a commonly used procedure for the detection of coccidian parasites in developing countries. The morphological variations observed in these parasites play a significant role to some extent in

both identification and diagnosis of these parasitic infections. A prospective cross sectional study was performed over three years. The fecal smears were stained by modified Kinyoun acid-fast staining technique and were extensively studied for morphological variations in the coccidian parasites. Out of a total of two thousand one hundred fifty one (n=2,151) fecal samples received during the study period, 259 samples (12%) were positive for any one of the coccidian parasites. Morphological variations, especially in the staining character was noted in all the three coccidian parasites. This study was an attempt to characterize different variations in size, shape and staining characteristics of the three coccidian parasites.

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26: Datta G, Hossain ME, Asad M, Rathore S, Mohmmed A. Plasmodium falciparum OTU-like cysteine protease (PfOTU) is essential for apicoplast homeostasis and associates with noncanonical role of Atg8. Cell Microbiol. 2017 Sep;19(9). doi: 10.1111/cmi.12748. Epub 2017 May 17. PubMed PMID: 28423214.

The metabolic pathways associated with the mitochondrion and the apicoplast in Plasmodium, 2 parasite organelles of prokaryotic origin, are considered as suitable drug targets. In the present study, we have identified functional role of a novel ovarian tumour unit (OTU) domain-containing cysteine protease of Plasmodium falciparum (PfOTU). A C-terminal regulatable fluorescent affinity tag on native protein was utilised for its localization and functional characterization. Detailed studies showed vesicular localization of PfOTU and its association with the apicoplast. Degradation-tag mediated knockdown of PfOTU resulted in abnormal apicoplast development and blocked development of parasites beyond early-schizont stages in subsequent cell cycle; downregulation of PfOTU hindered apicoplast protein import. Further, the isoprenoid precursor-mediated parasite growth-rescue experiments confirmed that PfOTU knockdown specifically effect development of functional apicoplast. We also provide evidence for a possible biological function of PfOTU in membrane deconjugation of Atg8, which may be linked with the apicoplast protein import. Overall, our results show that the PfOTU is involved in apicoplast homeostasis and associates with the noncanonical function of Atg8 in maintenance of parasite apicoplast.

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A 13-year-old girl presented with exertional dyspnea and congestive heart

failure. Echocardiography revealed severe congenital mitral stenosis due to anomalous mitral arcade with severe pulmonary hypertension. She underwent successful mitral valve repair. The case is reported for its rarity.

DOI: 10.4103/apc.APC_141_16
PMCID: PMC5431035
PMID: 28566831

Conflict of interest statement: There are no conflicts of interest.

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A 15-year-old boy had persistent and refractory erythroderma since early childhood. His parents noticed polycyclic skin lesions and hair fragility around the age of 5 years. He was treated by a local untrained practitioner for more than 3 years without any significant improvement, and he developed weight gain, thinning of skin, muscle weakness and growth retardation. He was evaluated in 2015 and found to have iatrogenic Cushing's disease with severe skeletal complications and pituitary-adrenal-gonadal suppression, which persisted despite gradual withdrawal of steroids.

DOI: 10.1136/bcr-2017-220227
PMID: 28554884

Conflict of interest statement: Competing interests: None declared.

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Systemic inflammatory rheumatic diseases have shown an increase in frequency of internal malignancies, predominantly lymphoproliferative disorders. Occurrence of solid organ tumours is exceedingly rare. It is even rarer for it to manifest as recurrent syncope. We report a 55-year-old woman with systemic lupus erythematosus, who later developed episodes of syncope and dizziness along with diaphoresis and palpitations. She also had associated abdominal pain and vomiting. Imaging revealed a gall bladder (GB) mass with hepatic extension, which was histologically consistent with adenocarcinoma of the GB. Subsequently she succumbed to death during chemotherapy.

DOI: 10.1136/bcr-2017-219511
PMID: 28500262

Conflict of interest statement: Competing interests: None declared.

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Background and study aims We analyzed NIS (National Inpatient Sample) database from 2007-2013 to determine if early esophagogastroduodenoscopy (EGD) (24 hours) for upper gastrointestinal bleeding improved the outcomes in terms of mortality, length of stay and costs. Patients and methods Patients were classified as having upper gastrointestinal hemorrhage by querying all diagnostic codes for the ICD-9-CM codes corresponding to upper gastrointestinal bleeding. For these patients, performance of EGD during admission was determined by querying all procedural codes for the ICD-9-CM codes corresponding to EGD; early EGD was defined as having EGD performed within 24 hours of admission and late EGD was defined as having EGD performed after 24 hours of admission. Results A total of 1,789,532 subjects with UGIH were identified. Subjects who had an early EGD were less likely to have hypovolemia, acute renal failure and acute respiratory failure. On multivariable analysis, we found that subjects without EGD were 3 times more likely to die during the admission than those with early EGD. In addition, those with late EGD had 50% higher odds of dying than those with an early EGD. Also, after adjusting for all factors in the model, hospital stay was on average 3 and 3.7 days longer for subjects with no or late EGD, respectively, then for subjects with early EGD. Conclusion Early EGD (within 24 hours) is associated with lower in-hospital mortality, morbidity, shorter length of stay and lower total hospital costs.

DOI: 10.1055/s-0042-121665
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Recent years have seen an increase in the use of nebulizers for delivering maintenance therapy in obstructive airway diseases (OADs) such as asthma and chronic obstructive pulmonary disease (COPD). The probable factors associated with this increase at home are: convenience of drug delivery, technological advances making the nebulizer equipment more efficient and portable, increase in the prevalence of OADs and the ageing population which may impact the optimal use of handheld inhalers such as pressurized metered dose inhalers (pMDIs) and dry powder inhalers (DPIs). Although there is increase in the use of maintenance therapy with nebulization, there has been no such increase in the evidence base available for the appropriate use of nebulizers. The last international guidelines were published in 2001. Hence there is a need to address this knowledge gap especially with the widespread use of home nebulization in India. With this objective, we organized a consensus meeting to address certain critical questions pertaining to the use of nebulizers for maintenance treatment in OADs. This article presents the findings of the consensus panel on the use of maintenance treatment of OADs with nebulization at home.

PMID: 28598050

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PURPOSE: To study the effect of endometrial scratching in infertile couples undergoing ovulation induction and intrauterine insemination (IUI) cycles.
METHODS: A prospective randomized controlled trial was conducted in the Department of Obstetrics and Gynaecology, AIIMS, New Delhi, India. One hundred forty-four women with primary/secondary infertility were recruited. Couples were either unexplained or male factor infertility. Subjects were randomized into intervention (scratching) and control group. All patients received ovulation induction with clomiphene citrate (day 2-6) 50 mg/day +75 IU HMG on days 6 and 7. In addition, endometrial scratching was done on day 8 of ovulation induction cycle in intervention group. All couples were planned for three cycles of ovulation induction and IUI over 6 months. After each failed cycle, couple was advised to try for natural conception for one cycle. Those who conceived were excluded from further analysis. Primary outcome was clinical pregnancy rate. Secondary outcome measures included conception rate, ongoing pregnancy, abortion and ectopic rate.
RESULTS: Baseline characteristics were comparable in both groups. Clinical pregnancy rate was significantly higher in intervention group (31.9%; 23/72) as compared to control group (16.7%; 12/72) (p value 0.030). On per cycle analysis, first IUI cycle had significantly high pregnancy rate (18.1%; 13/72) as compared to control group (5.6%; 4/72). Three patients in intervention group and one in control group conceived in wash out cycle. Ongoing pregnancy rate was significantly higher in scratching group (30.0%; 21/70) as compared to control group (15.7%; 11/70) (p value0.044).
CONCLUSIONS: Endometrial scratching can be used as a low cost-effective tool to improve clinical pregnancy and ongoing pregnancy rate in IUI cycles. Further large number studies are required to document its role in improving live birth rate.
TRIAL REGISTRATION NUMBER: CTRI/2015/12/006419.

DOI: 10.1007/s10815-017-0949-8
PMCID: PMC5533680 [Available on 2018-08-01]
PMID: 28551840

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Anomalies affecting the capillary and venous channels form the bulk of the spectrum of vascular anomalies. As per International Society for the Study of Vascular Anomalies (ISSVA) classification, these are referred to as hemangiomas and venous malformations respectively. The present article is a descriptive note of their management and outcomes. Retrospective records of patients over 17 y (January 2000 through December 2016) were reviewed for presentation, management and outcomes. Outcomes were graded into 3 subgroups based on subjective assessment of clinical images: Group A = near-total response (>90%); Group B = 50-90% and Group C = <50% reduction. Among 90 cases of hemangioma, majority

were located in head and neck (86.7%). Outcomes recorded in children who received steroids (n = 36) were: Group A = 61.1%, B = 25% and C = 13.9%; steroids and beta-blockers (n = 8): Group A = 62.5%, B = 25% and C = 12.5%; only beta-blockers (n = 4): Group A = 75% and B = 25%; intralesional sclerotherapy (n = 32): Group A = 55.2% and B = 44.8%; steroids followed by sclerotherapy (n = 7): Group A = 28.6% and B = 71.4%; excision (n = 3): Group A = 100%. Among 171 cases of venous malformation, majority were located in head and neck (49.6%). Outcomes recorded in children who received sclerotherapy (n = 165) were Group A = 20.7%, B = 51% and C = 28.3%; steroids (n = 3): Group A = 100%; beta-blockers (n = 1): Group C = 100%; excision (n = 2): Group A = 100%. Better outcome was noted in smaller-sized lesions and those who required lesser volume of sodium tetradecyl sulfate (STS) injection. Thus, to conclude, the decision regarding the choice and timing of each therapeutic modality should be individualized based on location, size and type of the lesion. The goal of management in these lesions should be to improve the quality of life rather than elimination of the lesion.

DOI: 10.1007/s12098-017-2355-8
PMID: 28466404

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DNA gyrase, a type II topoisomerase maintains the topology of DNA by introducing negative supercoils using energy generated by ATP hydrolysis. It is composed of two subunits, GyrA and GyrB (GyrA2GyrB2 hetero-tetramer). GyrB comprises two domains, a 43kDa amino N-terminus (GBNTD) and 47kDa carboxyl C- terminus (GBCTD). Till now no study has been reported in terms of stability of Gyrase B and its domains using chemical denaturants related to its function. To understand the role of each domain in GyrB subunit, we estimated the thermodynamic stability of GBF and its individual domains using urea and GdmCl. Changes in secondary and tertiary structures were monitored using circular dichroism and fluorescence spectroscopy. The Cm values for GBNTD, GBCTD and GBF proteins were found to be 2.25, 1.65 and 1.82M during GdmCl-induced denaturation and 2.95, 2.25 and 2.67M for urea-induced denaturation. It is observed that GBNTD is more stable than GBCTD and it contributes to overall stability of GyrB. The lower Cm and ΔG values reflect the flexibility of GBCTD to form the catalytic site along with GANTD for cleavage or religation reaction. Both GdmCl- and urea-induced denaturation of GyrB domains were reversible over the entire range of concentration.

DOI: 10.1016/j.ijbiomac.2017.05.013
PMID: 28499947

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Background.: Crucial gaps in our understanding of Plasmodium vivax reticulocyte invasion and protective immunity have hampered development of vivax vaccines. P. vivax exclusively invades reticulocytes that is mediated by the P. vivax reticulocyte-binding proteins (PvRBPs) specifically PvRBP2c and PvRBP1a. Vivax infections in Duffy-null individuals have suggested the evolution of alternate invasion pathways that may be mediated by the PvRBPs. Thus, PvRBPs appear as

potential targets for efficacious P. vivax neutralization. However, there are limited data validating their vaccine efficacy. In the absence of vivax invasion assays, binding-inhibitory activity of antibodies has been reported to be associated with protection and a measure of vaccine potential.
Methods.: -based analysis was performed of the PvRBP reticulocyte-binding properties and binding-inhibitory activity of specific anti-PvRBP2c/PvRBP1a human antibodies.
Results.: PvRBP2c and PvRBP1a displayed a distinct reticulocyte-binding specificity, and their specific reticulocyte-binding domains were mapped within their N-terminal regions. Importantly, naturally acquired antibodies against the reticulocyte-binding domains efficaciously blocked reticulocyte binding of native PvRBPs, suggesting that the human immune system produced functional binding-inhibitory antibodies through exposure to vivax malaria.
Conclusions.: Reticulocyte-binding domains of PvRBP2c/PvRBP1a are targets of naturally acquired binding-inhibitory antibodies, substantiating their promise as candidate antigens against which vaccine-inducible immunity could potentially be boosted through natural infections.

DOI: 10.1093/infdis/jix170
PMID: 28379500 [Indexed for MEDLINE]

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BACKGROUND: Evidence on the optimal time to initiation of complementary feeding in preterm infants is scarce. We examined the effect of initiation of complementary feeding at 4 months versus 6 months of corrected age on weight for age at 12 months corrected age in preterm infants less than 34 weeks of gestation.
METHODS: In this open-label, randomised trial, we enrolled infants born at less than 34 weeks of gestation with no major malformation from three public health facilities in India. Eligible infants were tracked from birth and randomly assigned (1:1) at 4 months corrected age to receive complementary feeding at 4 months corrected age (4 month group), or continuation of milk feeding and initiation of complementary feeding at 6 months corrected age (6 month group), using computer generated randomisation schedule of variable block size, stratified by gestation (30 weeks or less, and 31-33 weeks). Iron supplementation was provided as standard. Participants and the implementation team could not be masked to group assignment, but outcome assessors were masked. Primary outcome was weight for age Z-score at 12 months corrected age (WAZ12) based on WHO Multicentre Growth Reference Study growth standards. Analyses were by intention to treat. The trial is registered with Clinical Trials Registry of India, number

CTRI/2012/11/003149.
FINDINGS: Between March 20, 2013, and April 24, 2015, 403 infants were randomly assigned: 206 to receive complementary feeding from 4 months and 197 to receive complementary feeding from 6 months. 22 infants in the 4 month group (four deaths, two withdrawals, 16 lost to follow-up) and eight infants in the 6 month group (two deaths, six lost to follow-up) were excluded from analysis of primary outcome. There was no difference in WAZ12 between two groups: -1·6 (SD 1·2) in the 4 month group versus -1·6 (SD 1·3) in the 6 month group (mean difference 0·005, 95% CI -0·24 to 0·25; p=0·965). There were more hospital admissions in the 4 month group compared with the 6 month group: 2·5 episodes per 100 infant-months in the 4 month group versus 1·4 episodes per 100 infant-months in the 6 month group (incidence rate ratio 1·8, 95% CI 1·0-3·1, p=0·03). 34 (18%) of 188 infants in the 4 month group required hospital admission, compared with 18 (9%) of 192 infants in the 6 month group.
INTERPRETATION: Although there was no evidence of effect for the primary endpoint of WAZ12, the higher rate of hospital admission in the 4 month group suggests a recommendation to initiate complementary feeding at 6 months over 4 months of corrected age in infants less than 34 weeks of gestation.
FUNDING: Indian Council of Medical Research supported the study until Nov 14, 2015. Subsequently, Shuchita Gupta's salary was supported for 2 months by an institute fellowship from All India Institute Of Medical Sciences, and a grant by Wellcome Trust thereafter.

DOI: 10.1016/S2214-109X(17)30074-8
PMCID: PMC5388893
PMID: 28395845

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Testicular maturation arrest is characterized by interruption of germ cell development and differentiation. Genetic factors play important role in the causation of human disease, including male infertility. The objective was to study copy number variations in testicular maturation arrest using single nucleotide polymorphism (SNP) microarray technique. Conventional cytogenetics, targeted fluorescence in situ hybridization (FISH) and sequence-tagged site (STS) polymerase chain reaction (PCR) were used to confirm some of the SNP microarray findings. SNP microarray on 68 cases of testicular maturation arrest detected copy number variations (CNVs) mostly on sex chromosomes involving pseudoautosomal regions (PAR) 1, 2 and 3 as well as azoospermic factors (AZFs) besides three cases of chromosomal abnormalities (two Klinefelter syndromes and one case of dicentric Y). The AZF deletion was observed in 14 (20.6%) cases and the AZFc gain was observed in 6 (8.8%) cases. PAR 1 and 2 CNVs was observed in 5 (7.3%) cases.

PAR 3 CNVs was detected in 19 cases and 2 controls. The TSPY2 gene gain (within PAR 3 CNVs) was observed in 16 cases and 1 control. CNV containing autosomal genes possibly associated with male infertility in this study was SPATA31A2-A5 (9p12) in five cases. In this study, SNP microarray identified possible underlying aetiology in 55.9% (38/68) cases besides identifying minimal critical region of AZFc deletion as 0.51 mb (Y:24356128-24873665) involving TTY5, RBMY2FP, RBMY1F, RBMY1J, TTY6 and PRY genes. SNP microarray seems superior, sensitive, specific as well as cost-effective method and has potential to be the first tier investigations to explore underlying genomic factors of testicular maturation arrest. The present study is an attempt to find out probable genomic factors with idiopathic testicular maturation arrest.

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PMID: 28217965 [Indexed for MEDLINE]

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Insulinomas are rare pancreatic neuroendocrine tumors. The genetic causes underlying insulinoma are still being investigated. Recently, 3 independent studies reported a recurrent somatic mutation in YY1 gene (C>G; Thr372Arg) among insulinoma patients belonging to Chinese and Western Caucasian populations, which was found to increase insulin secretion by β-cells. However, the status of this key gene variation remains unknown in patients of other ethnicities. We, therefore, screened Indian sporadic insulinoma patients for YY1 T372R mutation in the present study. Seventeen patients diagnosed with insulinoma were recruited retrospectively and their records of family history and clinical parameters were collected. Formalin-fixed paraffin-embedded tumor tissues were used to extract genomic DNA, which was subjected to PCR amplification of YY1 exon 5, followed by Sanger sequencing. Nucleotide sequences thus obtained were aligned against the documented sequence of YY1 exon 5. We found absence of C to G mutation at YY1 codon 372 in all 17 (100%) insulinoma tissues analyzed. On comparison with the mutation frequency observed in the Chinese patients, our results point to genetic heterogeneity in the pathogenesis of insulinoma. This is the first report on the status of YY1 T372R in insulinoma cases of Indian origin. This also warrants analysis of other documented as well as novel mutations in genes in insulinoma tumorigenesis.

DOI: 10.1055/s-0043-107244
PMID: 28472826

Conflict of interest statement: Conflicts of interest: The authors declare that they have no conflict of interest.

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Chronic pancreatitis (CP) is a progressive inflammatory disease of the pancreas. The currently available treatment of CP is aimed at controlling symptoms and managing complications. Unfortunately, no specific treatment is available to halt the progression of the disease process because the pathophysiological

perturbations in CP are not well understood. In this review, we discuss various therapeutic targets and investigational agents acting on these targets. Among these, therapies modulating immune cells and those acting on pancreatic stellate cells appear promising and may translate into clinical benefit in near future. However, these experimental therapies are mostly in animal models and they do not recapitulate all aspects of human disease. Still they may be beneficial in developing effective therapeutic modalities to curb inflammation in chronic pancreatitis.

DOI: 10.1007/s10620-017-4604-0
PMID: 28551708 [Indexed for MEDLINE]

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BACKGROUND: There is lack of reliable predictors of disease severity and mortality in dengue. The present study was carried out to identify these predictors during the 2015 outbreak in India.
METHODS: This prospective observational study included confirmed adult dengue patients hospitalized between August and November 2015 in a tertiary care centre in New Delhi, India. Appropriate statistical tests were used to compare clinicolaboratory characteristics, derive predictors of severe disease and mortality, and compute a predictive score for mortality. Serotyping was done.
RESULTS: Data of 369 patients were analyzed (mean age, 30.9 years; 67% males). Of these, 198 (54%) patients had dengue fever, 125 (34%) had dengue hemorrhagic fever (grade 1 or 2), and 46 (12%) developed dengue shock syndrome (DSS). Twenty-two (6%) patients died. Late presentation to the hospital (≥5 days after onset) and dyspnea at rest were identified as independent predictors of severe disease. Age ≥24 years, dyspnea at rest and altered sensorium were identified as independent predictors of mortality. A clinical risk score was developed (12*age + 14*sensorium + 10*dyspnea), which, if ≥22, predicted mortality with a high sensitivity (81.8%) and specificity (79.2%). The predominant serotypes in Delhi (2015) were dengue virus DENV2 and DENV4.
CONCLUSION: Age ≥24 years, dyspnea at rest, and altered sensorium were identified as independent predictors of mortality. Platelet counts did not determine outcome in dengue patients. Timely referral/access to healthcare is important. The clinical risk score for mortality prediction that was developed in this study can be used in all healthcare settings, after validation in larger cohorts.

DOI: 10.1093/ofid/ofx056
PMCID: PMC5419201
PMID: 28491893

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Calcium/calmodulin-dependent protein kinase IV (CAMKIV) is a multifunctional Ser/Thr kinase, associated with cerebral hypoxia, cancer, and neurodegenerative diseases. Here, we report design, synthesis, and biological evaluation of seven pyrimidine-substituted novel inhibitors of CAMKIV. We successfully synthesized and extensively characterized (ESI-MS, (1) H NMR, and (13) C NMR studies) seven compounds that are showing appreciable binding affinity to the CAMKIV. Molecular

docking and fluorescence binding studies revealed that compound 1 is showing very high binding free energy (ΔG = -11.52 kcal/mol) and binding affinity (K = 9.2 × 10(10) m(-1)) to the CAMKIV. We further performed MTT assay to check the cytotoxicity and anticancer activity of these compounds. An appreciable IC50 (39 μm) value of compound 1 was observed on human hepatoma cell line and nontoxic till the 400 μm on human embryonic kidney cells. To ensure anticancer activity of all these compounds, we further performed propidium iodide assay to evaluate cell viability and DNA content during the cell cycle. We found that compound 1 is again showing a better anticancer activity on both human hepatoma and human embryonic kidney cell lines.

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PURPOSE: The purpose of this study is to determine the effect of phacoemulsification cataract extraction on measurement of retinal nerve fiber layer and optic nerve head parameters using spectral domain optical coherence tomography.
MATERIAL AND METHODS: A prospective, hospital-based study of 100 patients of 40 years of age and above, with no other ocular morbidity except cataract and planned for phacoemulsification with IOL implantation (SN60WF) at a tertiary centre at AIIMS, New Delhi, India. All patients underwent imaging with Cirrus SD-OCT model 400 and the optic disc cube 200x200 protocol at baseline and at 1 month follow up. Paired sample t-test was used to compare the RNFL parameters and ONH parameters.
RESULTS: The mean age of subjects was 56.6 ± 12.3 years (70 males, 30 females). The average RNFL increased from 92.6 ± 5.4 μm to 101.3 ± 5.6 μm after phacoemulsification, an increase of 9% (P = 0.003) and the signal strength increased from 5.6 ± 0.5 to 7.6 ± 0.7, increasing by 35.7% (P = 0.004). There was a significant increase in the disc area (P = 0.004) and rim area (P = 0.004) but no significant change in vertical cup-disc ratio (P = 0.45) or average cup-disc ratio (P = 0.075). The quadrant-wise RNFL thickness increase in inferior, superior, nasal, and temporal quadrants was 12.6% (P = 0.001), 10% (P = 0.001), 5.6% (P = 0.001), and 3.2% (P = 0.001), respectively. The change in RNFL thickness was maximum in posterior subcapsular cataract (P = 0.001) followed by cortical (P = 0.001) and nuclear (P = 0.001) subtypes.
CONCLUSIONS: A significant increase in RNFL thickness and signal strength was observed after cataract surgery using SD-OCT. The maximum change in RNFL thickness was in the inferior quadrant, where RNFL thinning is a significant predictor of glaucoma progression. The posterior subcapsular cataract interfered with RNFL measurement maximally due to its density and proximity to nodal point. After the cataract surgery, a new baseline needs to be established by obtaining fresh OCT images for assessing the longitudinal follow-up of a glaucoma patient.

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PMID: 28757693

Conflict of interest statement: There are no conflicts of interest.

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Reproductive tract malformations are rare in general population but are commonly encountered in women with infertility and recurrent pregnancy loss. Obstructive anomalies present around menarche causing extreme pain and adversely affecting the life of the young women. The clinical signs, symptoms and reproductive problems depend on the anatomic distortions, which may range from congenital absence of the vagina to complex defects in the lateral and vertical fusion of the Müllerian duct system. Identification of symptoms and timely diagnosis are an important key to the management of these defects. Although MRI being gold standard in delineating uterine anatomy, recent advances in imaging technology, specifically 3-dimensional ultrasound, achieve accurate diagnosis. Surgical management depend on the type of anomaly, its complexity and the proper embryological interpretation of the anomaly and involves multiple specialties; thus, patients should be referred to centres with experience in the treatment of complex genital malformations.

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AIM: To evaluate the role of oral curcumin in inducing clinical remission in patients with mild to moderate ulcerative colitis (UC).
METHODS: A prospective randomized double-blind placebo-controlled trial comparing the remission inducing effect of oral curcumin and mesalamine 2.4 g with placebo and mesalamine 2.4 g in patients of ulcerative colitis with mild to moderate severity was conducted from January 2003 to March 2005. The included patients received 1 capsule thrice a day of placebo or curcumin (150 mg) for 8 wk. Patients were evaluated clinically and endoscopically at 0, 4 and 8 wk. The primary outcome was clinical remission at 8 wk and secondary outcomes were clinical response, mucosal healing and treatment failure at 8 wk. The primary analysis was intention to treat worst case scenario (ITT-WCS).
RESULTS: Of 300 patients with UC, 62 patients (curcumin: 29, placebo: 33) fulfilled the inclusion criteria and were randomized at baseline. Of these, 21 patients did not complete the trial, 41 patients (curcumin: 16, placebo: 25) finally completed 8 wk. There was no significant difference in rates of clinical remission (31.3% vs 27.3%, P = 0.75), clinical response (20.7% vs 36.4%, P = 0.18), mucosal healing (34.5% vs 30.3%, P = 0.72), and treatment failure (25% vs 18.5%, P = 0.59) between curcumin and placebo at 8 wk.
CONCLUSION: Low dose oral curcumin at a dose of 450 mg/d was ineffective in inducing remission in mild to moderate cases of UC.

DOI: 10.4292/wjgpt.v8.i2.147
PMCID: PMC5421114
PMID: 28533925

Conflict of interest statement: Conflict-of-interest statement: No conflict of interest for all authors.

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Primary malignant melanoma of the gastrointestinal tract is extremely rare. A 35-year-old man presented with complaints of abdominal pain and weight loss. Contrast enhanced computed tomography showed a large mass involving the duodenum and the superior mesenteric vessels. Upper gastrointestinal endoscopy demonstrated a large, friable mass along the duodenal wall and biopsy was suggestive of malignant melanoma. A detailed physical examination and whole body imaging (positron emission tomography and computed tomography) did not reveal any other lesion. The patient underwent a pancreaticoduodenectomy with segmental resection and anastomosis of the superior mesenteric vein as well as a segmental colectomy. His postoperative recovery was uneventful. The histopathology of the operative specimen showed a malignant amelanotic melanoma arising from the duodenum with lymph nodal involvement. He received oral temozolomide. However, he developed liver metastasis at six months and again at ten months, which was managed with radiofrequency ablation both times. He is doing well at 32 months of follow-up review. Multimodality treatment including surgery, adjuvant chemotherapy and salvage therapy appears to be a promising tool for achieving long-term survival in such patients.

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Background: Household coverage with iodized salt was assessed in 10 countries that implemented Universal Salt Iodization (USI).Objective: The objective of this paper was to summarize household coverage data for iodized salt, including the relation between coverage and residence type and socioeconomic status (SES).Methods: A review was conducted of results from cross-sectional multistage household cluster surveys with the use of stratified probability proportional to size design in Bangladesh, Ethiopia, Ghana, India, Indonesia, Niger, the Philippines, Senegal, Tanzania, and Uganda. Salt iodine content was assessed with quantitative methods in all cases. The primary indicator of coverage was percentage of households that used adequately iodized salt, with an additional indicator for salt with some added iodine. Indicators of risk were SES and residence type. We used 95% CIs to determine significant differences in coverage.Results: National household coverage of adequately iodized salt varied from 6.2% in Niger to 97.0% in Uganda. For salt with some added iodine, coverage varied from 52.4% in the Philippines to 99.5% in Uganda. Coverage with adequately iodized salt was significantly higher in urban than in rural households in Bangladesh (68.9% compared with 44.3%, respectively), India (86.4% compared with 69.8%, respectively), Indonesia (59.3% compared with 51.4%, respectively), the Philippines (31.5% compared with 20.2%, respectively), Senegal (53.3% compared with 19.0%, respectively), and Tanzania (89.2% compared with 57.6%, respectively). In 7 of 8 countries with data, household coverage of adequately iodized salt was significantly higher in high- than in low-SES households in Bangladesh (58.8% compared with 39.7%, respectively), Ghana (36.2% compared with 21.5%, respectively), India (80.6% compared with 70.5%, respectively), Indonesia (59.9% compared with 45.6%, respectively), the Philippines (39.4% compared with 17.3%, respectively), Senegal (50.7% compared with 27.6%, respectively) and Tanzania (80.9% compared with 51.3%, respectively).Conclusions: Uganda has achieved USI. In other countries, access to iodized salt is inequitable. Quality control and regulatory enforcement of salt iodization remain challenging. Notable progress toward USI has been made in Ethiopia and India. Assessing progress toward USI only through household salt does not account for potentially iodized salt consumed through processed foods.

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PMID: 28404840 [Indexed for MEDLINE]

Conflict of interest statement: 3: Author disclosures: JM Knowles, GS Garrett, J Gorstein, R Kupka, R Situma, K Yadav, R Yusufali, C Pandav, and GJ Aaron, no conflicts of interest. R Kupka and R Situma are UNICEF staff members. The opinions and statements in this article are those of the authors and may not reflect official UNICEF policies.

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INTRODUCTION: Periarthritis (PA) shoulder characterised by pain and restricted range of motion has a plethora of treatment options with inconclusive evidence. Platelet Rich Plasma (PRP) is an emerging treatment option and its efficacy needs to be examined and compared with other routine interventions.
AIM: To assess the efficacy of PRP injection and compare it with corticosteroid injection and ultrasonic therapy in the treatment of PA shoulder.
MATERIALS AND METHODS: Patients with PA shoulder (n=195) were randomised to receive single injection of PRP (2 ml) or corticosteroid (80 mg of methylprednisolone) or ultrasonic therapy (seven sittings in two weeks; 1.5

W/cm(2), 1 MHz, continuous mode). All participants were also advised to perform a home based 10 minute exercise therapy. The primary outcome measure was active range of motion of the shoulder. Secondary outcome measures used were Visual Analogue Scale (VAS) for pain and a shortened version of Disabilities of the Arm, Shoulder and Hand (QuickDASH) for function. Participants were evaluated at 0, 3, 6 and 12 weeks. Chi-square test, one way and repeated measures of ANOVA tests were used to determine significant differences.
RESULTS: PRP treatment resulted in statistically significant improvements over corticosteroid and ultrasonic therapy in active as well as passive range of motion of shoulder, VAS and QuickDASH at 12 weeks. At six weeks, PRP treatment resulted in statistically significant improvements over ultrasonic therapy in VAS and QuickDASH. No major adverse effects were observed.
CONCLUSION: This study demonstrates that single injection of PRP is effective and better than corticosteroid injection or ultrasonic therapy in treatment of PA shoulder.

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BACKGROUND: Autonomic dysfunction is common in children with Rett syndrome. They usually manifest with agitation, persistent screaming, constipation, gastroesophageal reflux, aerophagia, hyperventilation, and breath-holding episodes. Cardiovascular autonomic dysfunction may result in fatal a arrhythmia. Many of these events are mistaken for seizures and treated with antiepileptics.
METHODS: The present study was conducted in a tertiary care teaching hospital in north India for more than a six month period. MeCP2 mutation positive, 24 cases with Rett syndrome and 24 age-matched healthy girls were evaluated for cardiovascular autonomic dysfunction (heart rate variability, head-up tilt test, and cold pressor test).
RESULTS: The mean age was 9.06 years (±3.4) and 9.75 years (±3.13) for patients and control subjects, respectively. The heart rate variability contributed independently by parasympathetic and sympathetic nervous system was significantly reduced in cases compared with control subjects (P = 0.033 and P = 0.001, respectively). There was significant sympathovagal imbalance with sympathetic overactivity in cases compared with control subjects (P = 0.001). The mean longest QTc interval was significantly prolonged in cases compared with control subjects (P = 0.001). Cold pressor test and head-up tilt test could be done in 16 Rett syndrome patients (because of poor cooperation) and in all 24 control subjects. The change in blood pressure during cold pressor test and head-up tilt test was not significantly different in cases and control subjects.
CONCLUSIONS: Children with Rett syndrome exhibited significant cardiovascular autonomic dysfunction in the form of sympathetic overactivity, parasympathetic

underactivity, and sympathovagal imbalance. These findings have potentially important therapeutic- and outcome-related implications.

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Bone marrow mononuclear cell (BM-MNC) therapy has emerged as a potential therapy for the treatment of stroke. We performed a systematic review of published studies using BM-MNC therapy in patients with ischaemic stroke (IS). Literature was searched using MEDLINE, PubMed, EMBASE, Trip Database, Cochrane library and clinicaltrial.gov to identify studies on BM-MNC therapy in IS till June, 2016. Data were extracted independently by two reviewers. STATA version 13 was used for carrying out meta-analysis. We included non-randomized open-label, single-arm and non-randomized comparative studies or randomized controlled trials (RCTs) if BM-MNCs were used to treat patients with IS in any phase after the index stroke. One randomized trial, two non-randomized comparative trials and four single-arm open-label trials (total seven studies) involving 227 subjects (137 patients and 90 controls) were included in the systematic review and meta-analysis. The pooled proportion for favourable clinical outcome (modified Rankin Scale score ≤2) in six studies involving 122 subjects was 29% (95% CI 0.16-0.43) who were exposed to BM-MNCs and pooled proportion for favourable clinical outcome of 69 subjects (taken from two trials) who did not receive BM-MNCs was 20% (95% CI 0.12-0.32). The pooled difference in the safety outcomes was not significant between both the groups. Our systematic review suggests that BM-MNC therapy is safe up to 1 year post-intervention and is feasible; however, its efficacy in the case of IS patients is debatable. Well-designed randomized controlled trials are required to provide more information on the efficacy of BM-MNC transplantation in patients with IS.

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BACKGROUND: Stroke remains a leading cause of death and disability worldwide. Ischemic stroke (IS) accounts for around 80-85% of total stroke and is a complex polygenic multi-factorial disorder which is affected by a complex combination of vascular, environmental, and genetic factors.
OBJECTIVE: The study was conducted with an aim to examine the relationship of single nucleotide polymorphisms (SNPs) of PDE4D (T83C, C87T, and C45T) gene with increasing risk of IS in patients in North Indian population.
METHODS: In this hospital-based case-control study, 250 IS subjects and 250 age-and sex-matched control subjects were enrolled from the Neurosciences Centre, A.I.I.M.S., New Delhi, India. Deoxyribonucleic acids (DNAs) were extracted using the conventional Phenol-Chloroform isolation method. Different genotypes were determined by Polymerase chain reaction- Restriction fragment length polymorphism method. Odds ratio (OR) and 95% Confidence Interval (CI) of relationship of

polymorphisms with risk of IS were calculated by conditional multivariable regression analysis.
RESULTS: High blood pressure, low socioeconomic status, dyslipidemia, diabetes, and family history of stroke were observed to be statistically significant risk factors for IS. Multivariable adjusted analysis demonstrated a statistically significant relationship between SNP 83 of PDE4D gene polymorphism and increasing odds of IS under the dominant model of inheritance (OR, 1.59; 95% CI, 1.02 to 2.50; p value = 0.04) after adjustment of potential confounding variables. Stratified analysis on the basis of TOAST classification demonstrated a statistically significant association for increasing 2.73 times odds for developing large vessel disease stroke as compared to controls (OR, 2.73; 95% CI, 1.16 to 0.02; p value = 0.02). We did not find any significant association of SNPs (C87T and C45T) of the PDE4D gene with the risk of IS.
CONCLUSION: SNP 83 of PDE4D gene may increase the risk for developing IS whereas SNP 87 and SNP45 of PDE4D may not be associated with the risk of IS in the North Indian population. Prospective cohort studies are required to corroborate these findings.

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FTIR imaging has been used to diagnose and differentiate the molecular differences between normal and diseased tissues. The differences correspond to the distribution and structure of lipids, proteins, nucleic acids as well as other metabolites. These differences depended on the type and the grade of cancer. The sensitivity of chemotherapy drugs on individual specific was also discussed. Here, we emphasize that FTIR spectroscopy and imaging can be considered as a promising technique and will find its place on the detection of this dreadful disease because of high sensitivity, accuracy and inexpensive technique. Now the medical community started using and accepting this technique for early stage cancer detection. But, this technique endures several challenges on its application into the diagnosis of cancer in regards of sample preparations, data interpretation, and data analysis. In general, more research is needed in this field and it is necessary to understand the morphology and biology of the sample before using the spectroscopy and imaging because invaluable information to be figured out.

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An essential protein for bacterial growth, GTPase-Obg (Obg), is known to play an unknown but crucial role in stress response as its expression increases in Mycobacterium under stress conditions. It is well reported that Obg interacts with anti-sigma-F factor Usfx; however, a detailed analysis and structural characterization of their physical interaction remain undone. In view of above-mentioned points, this study was conceptualized for performing binding analysis and structural characterization of Obg-Usfx interaction. The binding

studies were performed by surface plasmon resonance, while in silico docking analysis was done to identify crucial residues responsible for Obg-Usfx interaction. Surface plasmon resonance results clearly suggest that N-terminal and G domains of Obg mainly contribute to Usfx binding. Also, binding constants display strong affinity that was further evident by intermolecular hydrogen bonds and hydrophobic interactions in the predicted complex. Strong interaction between Obg and Usfx supports the view that Obg plays an important role in stress response, essentially required for Mycobacterium survival. As concluded by various studies that Obg is crucial for Mycobacterium survival under stress, this structural information may help us in designing novel and potential inhibitors against resistant Mycobacterium strains.

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The authors describe leukemic retinopathy with foveal leukemic infiltrates as the presenting feature of chronic myeloid leukemia. Spectral domain optical coherence tomography (SD-OCT) features of leukemic foveal infiltrates are presented. Though the retinopathy resolved with remission of disease, visual recovery was not complete due to loss of ellipsoid zone on SD-OCT.

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CONTEXT: Family accommodation (FA) is the phenomenon whereby caregivers assist or facilitate rituals or behaviours related to obsessive compulsive disorder (OCD). There is a need for a self-rated instrument to assess this construct in resource-strained clinical settings of India.
AIM: To explore the factor structure of Hindi version of Family Accommodation Scale-Self Rated version (FAS-SR) and compare its validity with the gold standard Family Accommodation Scale-Interviewer Rated (FAS-IR) scale.
MATERIAL & METHODS: The Hindi version of FAS-SR scale and FAS-IR scale was applied on 105 caregivers of patients with OCD.
RESULTS: The initial factor analysis yielded three-factor models with an eigenvalue of >1 and the total variance explained by these factors was 72.017%. The internal consistency of the 19-item scale was 0.93 indicating good inter-item correlation. There was a significant positive correlation between FAS-IR scale total score and all the factors of the FAS-SR Scale. The average measure ICC was 0.889 with a 95% confidence interval from 0.783 to 0.981 ($F_{(62,84)}=37.547$, $p<001$) indicating high degree of reliability between the Hindi version of FAS-SR and the FAS-IR scale.
CONCLUSIONS: FAS-SR is a practical alternative to FAS-IR and has the potential to be used widely in an Indian setting.

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Craniopharyngiomas (CP) are rare benign epithelial tumors, with two histological variants, namely the adamantinomatous variant (ACP) and the rarer papillary variant (PCP). They are locally infiltrative and surgically challenging tumors with severe long term morbidity. CTNNB1 mutations with β-catenin immunopositivity and BRAFV600E mutations with anti-VE immunopositivity have been recently described in ACPs and PCPs respectively. We aimed to study BRAF and CTNNB1 gene mutations in CPs operated at our institute, and correlate it with clinicopathological parameters including histopathology and immunohistochemistry (IHC) for proteins VE-1 and β-catenin. A total of 54 CPs diagnosed over 3-year duration were included. IHC for β-catenin and VE-1 proteins, and Sanger sequencing for CTNNB1 (exon 3) and BRAF (exon 15) genes were performed. CTNNB1 mutations were identified in 63% (27/43) of ACPs while nuclear immunopositivity for β-catenin was observed in 79% (34/43) of them. Seven ACPs showed β-catenin immunopositivity in the absence of mutations. BRAFV600E (p.Val600Glu) mutations were observed in 57% of PCPs (4/7), while cytoplasmic immunopositivity for anti-VE1 antibody was observed only in 43% of PCPs (3/7), all of which also harboured BRAFV600E mutations. The mutations and IHC staining patterns of ACPs and PCPs were non-overlapping. Four cases with uncertain histological pattern could be subcategorised into specific variants only following mutation analysis/IHC. The identification of hallmark molecular signatures in the two CP variants holds promise for alternate improved treatment modalities, emphasizing the need for sub-categorization in routine histopathology reporting. IHC for β-catenin and targeted sequencing for BRAFV600E serve as useful adjuncts.

DOI: 10.1007/s11060-017-2465-1
PMID: 28500561

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Diabetic nephropathy (DN), a microvascular complication of diabetes, has emerged as an important health problem worldwide. There is strong evidence to suggest that oxidative stress, inflammation, and fibrosis play a pivotal role in the progression of DN. Apigenin has been shown to possess antioxidant, anti-inflammatory, antiapoptotic, antifibrotic, as well as antidiabetic properties. Hence, we evaluated whether apigenin halts the development and progression of DN in streptozotocin (STZ)-induced diabetic rats. Male albino Wistar rats were divided into control, diabetic control, and apigenin treatment

groups (5-20 mg/kg po, respectively), apigenin per se (20 mg/kg po), and ramipril treatment group (2 mg/kg po). A single injection of STZ (55 mg/kg ip) was administered to all of the groups except control and per se groups to induce type 1 diabetes mellitus. Rats with fasting blood glucose >250 mg/dl were included in the study and randomized to different groups. Thereafter, the protocol was continued for 8 mo in all of the groups. Apigenin (20 mg/kg) treatment attenuated renal dysfunction, oxidative stress, and fibrosis (decreased transforming growth factor-β1, fibronectin, and type IV collagen) in the diabetic rats. It also significantly prevented MAPK activation, which inhibited inflammation (reduced TNF-α, IL-6, and NF-κB expression) and apoptosis (increased expression of Bcl-2 and decreased Bax and caspase-3). Furthermore, histopathological examination demonstrated reduced inflammation, collagen deposition, and glomerulosclerosis in the renal tissue. In addition, all of these changes were comparable with those produced by ramipril. Hence, apigenin ameliorated renal damage due to DN by suppressing oxidative stress and fibrosis and by inhibiting MAPK pathway.

DOI: 10.1152/ajprenal.00393.2016
PMID: 28566504 [Indexed for MEDLINE]

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BACKGROUND: Astroblastoma (AB) is a rare tumor with significant dilemma regarding diagnostic criteria, behavior, and optimum treatment.
MATERIALS AND METHODS: We searched PubMed, Google Search, and Cochrane Library for eligible studies with the following search words: astroblastoma, high-grade astroblastoma, and anaplastic astroblastoma till July 1, 2016, published in English language and collected data regarding age, sex, site of disease, pathological grade, treatment received, and survival.
RESULTS: Data of 152 patients were retrieved from 63 publications. Median age was 16 years (range 0-71). Females were affected twice more frequently than male (70.3 vs. 29.7%). Tumors were most commonly located in the frontal (39%) followed by parietal lobe (26.7%). Fifty-two and 25% of the patients had headache and seizure at presentation, 76.3% of the patients underwent a gross total resection, 41 out of 89 had a high-grade tumor, and 56 patients received adjuvant radiation with a median dose of 54 Gy (range 20-72). Adjuvant chemotherapy was used in 23 patients. Temozolomide was the most common drug used in 30% of the patients. A combination of cisplatin, etoposide with vincristine, or ifosfamide was used in 17%. Median follow-up duration was 37 months (range 1-238). Median progression-free survival and OS were 36 and 184 months, respectively. Patients with a higher-grade tumor had significantly worse OS with HR 5.260 and p = 0.001. Forty patients experienced local progression. Sixty-five percent patients underwent surgery while 50% underwent radiation as salvage.
CONCLUSION: AB has two distinct grades with higher-grade tumors having significantly poor survival. Maximal safe surgery followed by adjuvant radiation and temozolomide should be advocated for these tumors.

DOI: 10.1007/s00381-017-3410-5
PMID: 28477040

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In this study, we explored the effect of aqueous extract of leaves of Aegle marmelos (AM) on hepatic carbohydrate metabolism and insulin downstream signalling in rats given fructose (15%) in drinking water from weaning to adulthood. Wistar albino rats (4 weeks old) were randomly divided into normal control (NC), fructose control (FC), and treatment (AMT) groups and were fed for a period of 8 weeks the following diets: chow + water, chow + fructose (15%), and chow + fructose (15%) + AM (500 mg/kg per day, p.o.), respectively. Compared with the NC group, the FC group was found to have significantly ($p < 0.05$) raised levels of fasting blood glucose, lipid, visceral mass, plasma insulin and leptin, glycogen, and gluconeogenesis enzyme but decreased glycolytic enzyme activity. Raised levels of glucose transporter 2 protein but decreased activity of phosphatidylinositol-3-kinase (PI3K/Akt) and Janus kinase - signal transducer and activator of transcription-3 (JAK-STAT3) in hepatic tissue indicate a state of insulin and leptin resistance in the FC group. A significant ($p < 0.05$) lowering of physical and glycemic parameters, strengthening of the hepatic glycolytic pathway over the gluconeogenic pathway, and upregulation of the PI3K/Akt and JAK-STAT3 pathways was observed in the AMT group, as compared with the FC group. For the first time, the mechanism underlying the development of insulin resistance syndrome is delineated here, along with the potential of A. marmelos to impede it.

DOI: 10.1139/cjpp-2016-0236
PMID: 28177684

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Computed tomography (CT) scan is the mainstay for diagnosis of stroke; but the facility of CT scan is not easily available. A blood-based biomarker approach is required to distinguish ischemic stroke (IS) from hemorrhagic stroke (HS) in pre-hospital settings.To conduct a systematic review of diagnostic utility of blood biomarkers for differential diagnosis of stroke.A comprehensive literature search was carried out till March 7, 2017 in PubMed, Cochrane, Medline, OVID, and Google Scholar databases. Methodological quality of each study was assessed using the modified Quality Assessment of Diagnostic Accuracy Studies questionnaire.Eighteen studies were identified relevant to our systematic review. Ten single biomarkers and seven panels of different biomarkers were identified which showed potential for differentiating IS and HS. Activated Protein C-Protein C Inhibitor Complex (APC-PCI) (sensitivity-96%), Glial Fibrillary Acidic Protein (GFAP) (specificity-100%) and a panel of APC-PCI & GFAP (sensitivity-71%) and Retinol Binding Protein 4 (RBP4) & GFAP (specificity- 100%) were found to have high sensitivity and specificity for differentiating the two stroke types.Our systematic review does not recommend the use of any blood biomarker for clinical purposes yet based on the studies conducted till date.

DOI: 10.1002/prca.201700007
PMID: 28452132

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AIM: To compare the results of arthroscopic capsular release with intra-articular steroid injections in patients of frozen shoulder.
METHODS: Fifty-six patients with frozen shoulder were randomised to one of two treatment groups: Group 1, complete 360 degree arthroscopic capsular release and group 2, intra-articular corticosteroid injection (40 mg methyl prednisolone acetate). Both groups were put on active and passive range of motion exercises following the intervention. The outcome parameters were visual analogue scale (VAS) score for pain, range of motion and Constant score which were measured at baseline, 4, 8, 12, 16 and 20 wk after intervention.
RESULTS: All the parameters improved in both the groups. The mean VAS score improved significantly more in the group 1 as compared to group 2 at 8 wk. This greater improvement was maintained at 20 wk with P value of 0.007 at 8 wk, 0.006 at 12 wk, 0.006 at 16 wk and 0.019 at 20 wk. The Constant score showed a more significant improvement in group 1 compared to group 2 at 4 wk, which was again maintained at 20 wk with P value of 0.01 at 4, 8, 12 and 16 wk. The gain in abduction movement was statistically significantly more in arthroscopy group with P value of 0.001 at 4, 8, 12, 16 wk and 0.005 at 20 wk. The gain in external rotation was statistically significantly more in arthroscopy group with P value of 0.007 at 4 wk, 0.001 at 8, 12, and 16 wk and 0.003 at 20 wk. There was no statistically significant difference in extension and internal rotation between the two groups at any time.
CONCLUSION: Arthroscopic capsular release provides subjective and objective improvement earlier than intra-articular steroid injection.

DOI: 10.5312/wjo.v8.i5.394
PMCID: PMC5434346
PMID: 28567343

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79: Mutreja D, Sharma RK, Purohit A, Aggarwal M, Saxena R. Evaluation of platelet surface glycoproteins in patients with Glanzmann thrombasthenia: Association with bleeding symptoms. Indian J Med Res. 2017 May;145(5):629-634. doi: 10.4103/ijmr.IJMR_718_14. PubMed PMID: 28948953; PubMed Central PMCID: PMC5644297.

BACKGROUND & OBJECTIVES: Glanzmann thrombasthenia (GT) is a rare, inherited autosomal recessive disorder characterized by qualitative or quantitative deficiency of integrin αIIbβ3 [glycoprotein IIb (GPIIb)/IIIa, CD41/CD61] diagnosed by absent or reduced platelet aggregation to physiological agonists, namely, collagen, adenosine-di-phosphate, epinephrine and arachidonic acid. The objective of this study was to quantitate platelet surface GPs, classify GT patients and relate the results with the severity of bleeding and platelet aggregation studies.
METHODS: Fifty one patients of GT diagnosed by platelet aggregation studies were evaluated for the expression of CD41, CD61, CD42a and CD42b on platelet surface by flow cytometry. The association between the clinical phenotype based on bleeding score and GT subtype on flow cytometric evaluation was assessed.

RESULTS: Twenty four (47%) patients of GT were classified as type I (as CD41/CD61 were virtually absent, <5%), six (11.8%) patients as type II (5-20% CD41/CD61) and 21 (41.2%) as type III or GT variants as they had near normal levels of CD41 and CD61. Type III GT patients had significantly lower numbers of severe bleeders (P=0.034), but the severity of bleeding did not vary significantly in type I and II GT patients. In all GT patients, mean CD41 expression was found to be lower than mean CD61 expression (P=0.002).
INTERPRETATION & CONCLUSIONS: Type I GT was found most common in our patients and with lowered mean CD41 expression in comparison with CD61. Type III GT patients had significantly lower numbers of severe bleeders, but the severity of bleeding did not vary significantly in type I and II GT patients.

DOI: 10.4103/ijmr.IJMR_718_14
PMCID: PMC5644297
PMID: 28948953

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82: Panda SP, Chinnaswamy G, Vora T, Prasad M, Bansal D, Kapoor G, Radhakrishnan V, Agarwala S, Laskar S, Arora B, Kaur T, Rath GK, Bakhshi S. Diagnosis and Management of Rhabdomyosarcoma in Children and Adolescents: ICMR Consensus Document. Indian J Pediatr. 2017 May;84(5):393-402. doi: 10.1007/s12098-017-2315-3. Epub 2017 Apr 5. PubMed PMID: 28378141.

Rhabdomyosarcoma (RMS) is a highly malignant tumor which is thought to originate from the pluripotent mesenchyme. It is the most common soft-tissue sarcoma of childhood. This review article summarizes the recent and older published literature and gives an overview of management of RMS in children. RMS can arise in a wide variety of primary sites, some of which are associated with specific patterns of local invasion, regional lymph nodal spread, therapeutic response and long term outcome, hence requiring physicians to be familiar with site-specific staging and treatment details. Most common primary sites include the head and neck region, genitourinary tract, and extremities. Prognosis for children and adolescents with RMS has recently improved substantially, especially for patients with local or locally extensive disease because of the development of multi-modal therapy incorporating surgery, dose-intensive combination chemotherapy, and radiation therapy. Despite aggressive approaches the outcome for patients who present with metastatic disease remains unsatisfactory. Clinical trials are ongoing to reduce toxicity and improve outcomes of such patients; newer agents in combination are being investigated.

DOI: 10.1007/s12098-017-2315-3
PMID: 28378141

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PMCID: PMC5578903.

OBJECTIVE: To examine the timing and microbiology of neonatal sepsis in a population-based surveillance in the Indian community setting.
STUDY DESIGN: All live born infants in 223 villages of Odisha state were followed at home for 60 days. Suspect sepsis cases were referred to study hospitals for further evaluation including blood culture.
RESULTS: Of 12 622 births, 842 were admitted with suspected sepsis of whom 95% were 4 to 60 days old. Culture-confirmed incidence of sepsis was 6.7/1000 births with 51% Gram negatives (Klebsiella predominating) and 26% Gram positives (mostly Staphylococcus aureus). A very high level of resistance to penicillin and ampicillin, moderate resistance to cephalosporins and extremely low resistance to Gentamicin and Amikacin was observed.
CONCLUSION: The bacterial burden of sepsis in the Indian community is not high. Judicious choice of empiric antibiotics, antibiotic stewardship and alternate modalities should be considered for the management or prevention of neonatal sepsis in India.

DOI: 10.1038/jp.2017.67
PMCID: PMC5578903
PMID: 28492525

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Penis is an extremely uncommon site for metastases to occur and is often associated with very grave prognosis. Most of the secondary tumors originating in the penis have primaries from prostate, urinary bladder, and gastrointestinal tract. We hereby report a 65-year-old man, known case of carcinoma urinary bladder, who came for FDG PET/CT for metastatic workup. PET/CT study revealed FDG-avid mass lesion in the root and shaft of the penis, making it suggestive of metastases, which was confirmed later by MRI correlation.

DOI: 10.1097/RLU.0000000000001607
PMID: 28288040 [Indexed for MEDLINE]

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Introduction Posterior midline laminectomy is associated with risks of postoperative instability, spinal deformity, extensive bilateral subperiosteal muscle stripping, partial or total facetectomy especially in foraminal tumor extension, increased cerebrospinal fluid leakage, and wound infection. Minimally invasive approaches with the help of a microscope or endoscope using hemilaminectomy have been found to be safe and effective. We report our initial experience of 18 patients using the endoscopic technique. Material and Methods A retrospective study of intradural extramedullary tumors extending up to two vertebral levels was studied. Pre- and postoperative clinical status, magnetic resonance imaging was done in all patients. The Destandau technique was used, and resection of ipsilateral lamina, medial part of the facet joint, base of the spinous process, and undercutting of the opposite lamina was performed. Dura repair was done using an endoscopic technique. Fibrin glue was used to reinforce repair in the later part of the study. Results The sagittal and axial diameter of

tumor ranged from 21 to 41 mm and 12 to 18 mm, respectively. There were four cervical, two cervicothoracic, five thoracic, three thoracolumbar, and four lumbar tumors, respectively. All 18 patients improved after total excision of tumor. Average duration of surgery and blood loss was 140 minutes and 60 mL, respectively. Postoperative stay and follow-up ranged from 3 to 7 days and 9 to 24 months, respectively. Conclusion Although the study is limited by the small number of patients with a short follow-up and is a technically demanding procedure, endoscopic management of intradural extramedullary tumors was an effective and safe alternative technique to microsurgery in such patients.

Georg Thieme Verlag KG Stuttgart · New York.

DOI: 10.1055/s-0036-1594014
PMID: 27951615 [Indexed for MEDLINE]

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Bone metastases, often a consequence of breast, prostate, and lung carcinomas, are characterized by an increased bone turnover, which can be visualized by positron emission tomography (PET), as well as single-photon emission computed tomography (SPECT). Bisphosphonate complexes of (99m)Tc are predominantly used as SPECT tracers. In contrast to SPECT, PET offers a higher spatial resolution and, owing to the (68)Ge/(68)Ga generator, an analog to the established (99m)Tc generator exists. Complexation of Ga(III) requires the use of chelators. Therefore, DOTA (1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid), NOTA (1,4,7-triazacyclododecane-1,4,7-triacetic acid), and their derivatives, are often used. The combination of these macrocyclic chelators and bisphosphonates is currently studied worldwide. The use of DOTA offers the possibility of a therapeutic application by complexing the β-emitter (177)Lu. This overview describes the possibility of diagnosing bone metastases using [(68)Ga]Ga-BPAMD ((68)Ga-labeled (4-{[bis-(phosphonomethyl))carbamoyl]methyl}-7,10-bis(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl)acetic acid) as well as the successful application of [(177)Lu]Lu-BPAMD for therapy and the development of new diagnostic and therapeutic tools based on this structure. Improvements concerning both the chelator and the bisphosphonate structure are illustrated providing new (68)Ga- and (177)Lu-labeled bisphosphonates offering improved pharmacological properties.

DOI: 10.3390/ph10020045
PMCID: PMC5490402
PMID: 28524118

Conflict of interest statement: The authors declare no conflict of interest.

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Mobile phones emit electromagnetic radiations that are classified as possibly carcinogenic to humans. Evidence for increased risk for brain tumours accumulated in parallel by epidemiologic investigations remains controversial. This paper aims to investigate whether methodological quality of studies and source of funding can explain the variation in results. PubMed and Cochrane CENTRAL searches were conducted from 1966 to December 2016, which was supplemented with relevant articles identified in the references. Twenty-two case control studies were included for systematic review. Meta-analysis of 14 case-control studies showed practically no increase in risk of brain tumour [OR 1.03 (95% CI 0.92-1.14)]. However, for mobile phone use of 10 years or longer (or >1640 h), the overall result of the meta-analysis showed a significant 1.33 times increase in risk. The summary estimate of government funded as well as phone industry funded studies showed 1.07 times increase in odds which was not significant, while mixed funded studies did not show any increase in risk of brain tumour. Metaregression analysis indicated that the association was significantly associated with methodological study quality ($p < 0.019$, 95% CI 0.009-0.09). Relationship between source of funding and log OR for each study was not statistically significant ($p < 0.32$, 95% CI 0.036-0.010). We found evidence linking mobile phone use and risk of brain tumours especially in long-term users (≥10 years). Studies with higher quality showed a trend towards high risk of brain tumour, while lower quality showed a trend towards lower risk/protection.

DOI: 10.1007/s10072-017-2850-8
PMID: 28213724

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Pediatric Hodgkins lymphoma is a highly curable disease even in the developing world. Current treatment paradigms follow a risk and response based approach. The goal is to minimise treatment related short and long-term toxicity while maintaining excellent survival. A confirmed histopathological diagnosis and full staging work-up are essential prior to embarking on treatment and guidelines for these are provided in the text. All patients require combination chemotherapy while radiotherapy is usually reserved for a select subgroup depending on the protocol used. It is important to follow these patients for relapse in the first five years and life-long for late effects as most of them will be cured.

DOI: 10.1007/s12098-017-2304-6
PMID: 28357582

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CONTEXT: There are limited data about the effect of metformin use on serum Vitamin B12 levels in type 2 diabetes patients from India.
AIMS: We studied serum Vitamin B12 levels in patients with type 2 diabetes mellitus who were receiving metformin and compared them to those never treated with metformin.
SUBJECTS AND METHODS: A total of 183 patients ("metformin" group 121, "no metformin" group 63) of type 2 diabetes from the endocrinology clinic of a tertiary care center in North India were studied. Serum Vitamin B12 levels were measured in all patients. Diabetic neuropathy symptom score (DNS) and diabetic neuropathy examination score (DNE) were used to assess peripheral neuropathy

while hemoglobin and mean corpuscular volume (MCV) were used to assess anemia.
RESULTS: The serum Vitamin B12 levels were 267.7 ± 194.4 pmol/l in metformin group and 275.1 ± 197.2 pmol/l in the no metformin group (P = 0.78). When adjusted for duration of diabetes, metformin use was associated with a 87.7 ± 37.7 pmol/l (95% confidence interval [CI], -162.1--3.3, P = 0.02) lower serum Vitamin B12 levels. No significant increase in the prevalence of neuropathy (DNS and DNE scores), anemia, or MCV was found in the Vitamin B12 deficient patients (levels <150 pmol/l) as compared to patients with normal Vitamin B12. However, serum Vitamin B12 levels for the entire cohort were higher by 12.2 ± 3.0 pmol/l (95% CI 6.4-18.0, P < 0.001) for every 1 year increase in the duration of diabetes.
CONCLUSIONS: Metformin use was associated with a lower serum Vitamin B12 levels when adjusted for duration of diabetes. Increasing duration of diabetes was associated with higher serum Vitamin B12 levels.

DOI: 10.4103/ijem.IJEM_529_16
PMCID: PMC5434727
PMID: 28553599

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Glioma accounts for the majority of human brain tumors. With prevailing treatment regimens, the patients have poor survival rates. In spite of current development in mainstream glioma therapy, a cure for glioma appears to be out of reach. The infiltrative nature of glioma and acquired resistance substancially restrict the therapeutic options. Better elucidation of the complicated pathobiology of glioma and proteogenomic characterization might eventually open novel avenues for the design of more sophisticated and effective combination regimens. This could be accomplished by individually tailoring progressive neuroimaging techniques, terminating DNA synthesis with prodrug-activating genes, silencing gliomagenesis genes (gene therapy), targeting miRNA oncogenic activity (miRNA-mRNA interaction), combining Hedgehog-Gli/Akt inhibitors with stem cell therapy, employing tumor lysates as antigen sources for efficient depletion of tumor-specific cancer stem cells by cytotoxic T lymphocytes (dendritic cell vaccination), adoptive transfer of chimeric antigen receptor-modified T cells, and combining immune checkpoint inhibitors with conventional therapeutic modalities. Thus, the present review captures the latest trends associated with the molecular mechanisms involved in glial tumorigenesis as well as the limitations of surgery, radiation and chemotherapy. In this article we also critically discuss the next generation molecular therapeutic strategies and their mechanisms for the successful treatment of glioma.

DOI: 10.1038/aps.2016.167
PMCID: PMC5457688 [Available on 2018-05-01]
PMID: 28317871

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The Pregnane and Xenobiotic Receptor (PXR; NR1I2) is a ligand-modulated transcription factor that belongs to the nuclear receptor superfamily. It is expressed at higher levels primarily in liver and intestine as compared to the levels in several other organs. It is activated by a broad spectrum of

xenobiotics and endobiotics. The primary function of PXR is to regulate the expression of drug metabolizing enzymes and transporters and prevent the accumulation of toxic chemicals in the body, thereby maintaining body's homeostasis. In this study, we identified a C/T single nucleotide polymorphism at position -831 from the transcriptional start site of the PXR gene promoter and examined the functional significance of this variant using both the luciferase reporter gene assays and electrophoretic mobility shift assays (EMSA). Transient transfection experiments showed that the T-allele was associated with significantly greater transcriptional activity than the C-allele of SNP rs3814055. These results indicate that the -831C/T polymorphism has a direct effect on transcriptional regulation of PXR gene. This allelic variation may be a potential genetic marker that can help identify individuals at higher risk for Inflammatory Bowel Disease (IBD).

DOI: 10.1002/cbin.10744
PMID: 28198586 [Indexed for MEDLINE]

93: Rani L, Mathur N, Gupta R, Gogia A, Kaur G, Dhanjal JK, Sundar D, Kumar L, Sharma A. Genome-wide DNA methylation profiling integrated with gene expression profiling identifies PAX9 as a novel prognostic marker in chronic lymphocytic leukemia. Clin Epigenetics. 2017 May 30;9:57. doi: 10.1186/s13148-017-0356-0. eCollection 2017. PubMed PMID: 28572861; PubMed Central PMCID: PMC5450117.

BACKGROUND: In chronic lymphocytic leukemia (CLL), epigenomic and genomic studies have expanded the existing knowledge about the disease biology and led to the identification of potential biomarkers relevant for implementation of personalized medicine. In this study, an attempt has been made to examine and integrate the global DNA methylation changes with gene expression profile and their impact on clinical outcome in early stage CLL patients.
RESULTS: The integration of DNA methylation profile (n = 14) with the gene expression profile (n = 21) revealed 142 genes as hypermethylated-downregulated and; 62 genes as hypomethylated-upregulated in early stage CLL patients compared to CD19+ B-cells from healthy individuals. The mRNA expression levels of 17 genes identified to be differentially methylated and/or differentially expressed was further examined in early stage CLL patients (n = 93) by quantitative real time PCR (RQ-PCR). Significant differences were observed in the mRNA expression of MEIS1, PMEPA1, SOX7, SPRY1, CDK6, TBX2, and SPRY2 genes in CLL cells as compared to B-cells from healthy individuals. The analysis in the IGHV mutation based categories (Unmutated = 39, Mutated = 54) revealed significantly higher mRNA expression of CRY1 and PAX9 genes in the IGHV unmutated subgroup ($p < 0.001$). The relative risk of treatment initiation was significantly higher among patients with high expression of CRY1 (RR = 1.91, $p = 0.005$) or PAX9 (RR = 1.87, $p = 0.001$). High expression of CRY1 (HR: 3.53, $p < 0.001$) or PAX9 (HR: 3.14, $p < 0.001$) gene was significantly associated with shorter time to first treatment. The high expression of PAX9 gene (HR: 3.29, 95% CI 1.172-9.272, $p = 0.016$) was also predictive of shorter overall survival in CLL.
CONCLUSIONS: The DNA methylation changes associated with mRNA expression of CRY1 and PAX9 genes allow risk stratification of early stage CLL patients. This comprehensive analysis supports the concept that the epigenetic changes along with the altered expression of genes have the potential to predict clinical outcome in early stage CLL patients.

DOI: 10.1186/s13148-017-0356-0
PMCID: PMC5450117
PMID: 28572861

94: Rathi A, Takkar B, Azad S. Ectopia lentis and blue sclera in hyperhomocysteinaemia. Natl Med J India. 2017 May-Jun;30(3):176. PubMed PMID: 28937010.

95: Rathi A, Takkar B, Gaur N, Maharana PK. Optical coherence tomography of the Kayser-Fleischer ring: an ancillary diagnostic tool for Wilson's disease in children. BMJ Case Rep. 2017 May 5;2017. pii: bcr-2017-220007. doi: 10.1136/bcr-2017-220007. PubMed PMID: 28476917.

This report presents anterior segment optical coherence tomography (AS-OCT) images of Kayser-Fleischer ring (KFR) in a child. The AS-OCT images highlight differential reflectivity of the KFR depending on amount of copper deposited in cornea, thus supporting the role of AS-OCT as a follow-up tool. Utility of AS-OCT for diagnosing and documenting the KFR in children otherwise uncooperative for detailed slit lamp examination is discussed.

DOI: 10.1136/bcr-2017-220007
PMID: 28476917

Conflict of interest statement: Competing interests: None declared.

96: Reddy B V, Kusuma YS, Pandav CS, Goswami AK, Krishnan A. Water and Sanitation Hygiene Practices for Under-Five Children among Households of Sugali Tribe of Chittoor District, Andhra Pradesh, India. J Environ Public Health. 2017;2017:7517414. doi: 10.1155/2017/7517414. Epub 2017 May 31. PubMed PMID: 28642797; PubMed Central PMCID: PMC5470013.

BACKGROUND: Increased mortality is associated with poor household water, sanitation, and hygiene (WaSH) practices. The objective was to study the WaSH practices for under-five children among households of Sugali Tribe, Chittoor district, Andhra Pradesh, India.
METHODS: A community-based cross-sectional study was conducted in four mandals in 2012. A total of 500 households with under-five children were identified. Data was collected from mothers/caregivers. A summary WaSH score was generated from four specific indices, water, sanitation, hygiene, and hand washing practices, and determinants were identified.
RESULTS: Of the total households, 69% reported doing nothing at home to make the water safe for drinking. Over 90% of the households reported storing water in a utensil covered with a lid and retrieving water by dipping glass in the vessels. Open defecation was a commonly reported practice (84.8%). About three-fifths of the study's households reported using water and soap for cleaning dirty hands and one-third (37.4%) reported using water and soap after defecation. The median WaSH score was 15. In the hierarchical stepwise multiple linear regression, only socioeconomic variables were significantly associated with WaSH score.
CONCLUSION: WaSH related practices were generally poor in people of the Sugali Tribe in Andhra Pradesh, India.

DOI: 10.1155/2017/7517414
PMCID: PMC5470013
PMID: 28642797 [Indexed for MEDLINE]

97: Reddy S, Swamy R, Kumar Irugu DV, Ramji KVV. Transtracheal endoscopic-assisted resection of a rare inflammatory myofibroblastic tumour in adult trachea, a case report. Acta Otorhinolaryngol Ital. 2017 May 22. doi:

10.14639/0392-100X-1278. [Epub ahead of print] PubMed PMID: 28530262.

Inflammatory myofibroblastic tumours (IMTs) are rare and clinically benign in childhood, and malignant in adults. The aetiology of IMTs is not clear, and recent studies report it as true neoplasm rather than a reactive or inflammatory lesion. IMTs can involve any part of the body, but are usually common in lungs. These are rarely seen in adults and tracheal involvement is also rare in both adults and children. We describe an 18-year-old woman who presented with respiratory difficulty to the emergency department. On clinical examination, the patient had complete absence of breath sounds on the right side of the chest. CT of the chest and virtual bronchoscopy revealed a polypoidal soft tissue mass lesion involving the carina with occlusion of right main bronchus. Endoscopic-assisted resection was performed under general anaesthesia and the final pathological diagnosis was tracheal IMT.

Publisher: I tumori miofibroblastici infiammatori sono rari in età pediatrica, età nella quale sono clinicamente benigni; tuttavia sono maligni in età adulta. L'eziologia non è chiara, recenti studi affermano che essi siano delle vere neoplasia piuttosto che delle lesioni reattive o infiammatoriea. I tumori miofibroblastici infiammatori sono raramente riscontrati negli adulti e il coinvolgimento tracheale è raro sia nei bambini sia negli adulti. Noi descriviamo il caso di una paziente femmina di diciotto anni, che si è presentata al pronto soccorso per difficoltà respiratoria. All'esame clinico della paziente si evidenziava assenza dei suoni polmonari a destra, pertanto si eseguiva TC del torace e la broncoscopia virtuale rivelava una lesione polipoide soffice che coinvolgeva la carena occludendo completamente il bronco principale di destra. La resezione endoscopio-assistita è stata eseguita in anestesia generale e all'esame istopatologico definitivo la diagnosi è stata di tumore miofibroblastico infiammatorio.

DOI: 10.14639/0392-100X-1278
PMID: 28530262

98: Roy SG, Tripathi M, Tripathi M, Ramanujam B, Singhal A, Bal C. Ictal PET in Ohtahara Syndrome With Hemimegalencephaly. Clin Nucl Med. 2017 May;42(5):e263-e264. doi: 10.1097/RLU.0000000000001593. PubMed PMID: 28195914.

Ohtahara syndrome is one of the causes of infantile epilepsies, which presents with refractory seizures and characteristic EEG changes. It is often associated with structural anomalies in the brain. We report a case of 5-month-old girl with Ohtahara syndrome with hemimegalencephaly who presented with refractory seizures and ictal FDG PET/CT helped in localizing the seizure focus.

DOI: 10.1097/RLU.0000000000001593
PMID: 28195914 [Indexed for MEDLINE]

99: Rufai SB, Singh A, Singh J, Kumar P, Sankar MM, Singh S; TB Research Team. Diagnostic usefulness of Xpert MTB/RIF assay for detection of tuberculous meningitis using cerebrospinal fluid. J Infect. 2017 Aug;75(2):125-131. doi: 10.1016/j.jinf.2017.04.010. Epub 2017 May 10. PubMed PMID: 28501491.

OBJECTIVE: Tuberculous meningitis (TBM) is the most severe form of extra-pulmonary tuberculosis (TB) due to association of diseases with high rates of mortality and morbidity. Diagnosis continues to be a clinical challenge as microbiological confirmation is rare and time consuming resulting in delayed treatment. Xpert MTB/RIF assay is a rapid and simple test, which has been endorsed by World Health Organization as an initial diagnostic test for the

diagnosis of TBM. However, evidence still lacks for its performance on cerebrospinal fluid (CSF) for the diagnosis of TBM especially from India.
METHODS: A total of 267 CSF samples from patients with high clinico-radiological suspicion of TBM were included in this study. Ziehl-Neelsen (ZN) staining, BACTEC Mycobacterial Growth Indicator Tube (MGIT-960) culture system, and Xpert MTB/RIF assay (using cartridge version G4) were tested on all samples.
RESULTS: Of total 267 samples, all were negative for smear AFB and 52 (19.5%) were culture positive by MGIT-960 culture system. However, out of 52 (19.5%) cultures detected positive by MGIT-960, 5 (9.6%) were detected as resistant to rifampicin. Xpert MTB/RIF assay was positive in 38 (14.2%) samples and negative in 223 (83.5%) samples. Cartridge error was detected in 6 (2.2%) samples, which could not be repeated due to insufficient sample volume. The sensitivity and specificity of Xpert MTB/RIF assay in comparison to MGIT-960 was 55.1% (95%, CI: 40.2-69.3) and 94.8% (95%, CI: 90.9-97.4) respectively. Overall, Xpert MTB/RIF assay detected 38 (14.2%) as positive for MTB of which 4 (10.5%), 31 (81.6%) and 3 (7.9%) were found to be rifampicin resistant, sensitive and indeterminate respectively.
CONCLUSION: Xpert MTB/RIF assay showed lower sensitivity as compared to MGIT 960 culture for the diagnosis of TBM from CSF samples.

DOI: 10.1016/j.jinf.2017.04.010
PMID: 28501491 [Indexed for MEDLINE]

100: Sahu MK, Siddharth CB, Devagouru V, Talwar S, Singh SP, Chaudhary S, Airan B. Hospital-acquired Infection: Prevalence and Outcome in Infants Undergoing Open Heart Surgery in the Present Era. Indian J Crit Care Med. 2017 May;21(5):281-286. doi: 10.4103/ijccm.IJCCM_62_17. PubMed PMID: 28584431; PubMed Central PMCID: PMC5455021.

BACKGROUND: The aim of this study is to evaluate the causal relation between hospital-acquired infection (HAI) and clinical outcomes following cardiac surgery in neonates and infants and to identify the risk factors for the development of HAI in this subset of patients.
MATERIALS AND METHODS: After Ethics committee approval, one hundred consecutive infants undergoing open heart surgery (OHS) between June 2015 and June 2016 were included in this prospective observational study. Data were prospectively collected. The incidence and distribution of HAI, the microorganisms, their antibiotic resistance and patients' outcome were determined. The Centers for Disease Control and Prevention criteria were used for defining HAIs. Univariate and multivariate risk factor analysis was done using Stata 14.
RESULTS: Sixteen infants developed microbiologically documented HAI after cardiac surgery. Neonatal age group was found to be most susceptible. Lower respiratory tract infections accounted for majority of the infections (47.4%) followed by bloodstream infection (31.6%), urinary tract infection (10.5%), and surgical site infection (10.5%). Klebsiella (36.8%) and Acinetobacter (26.3%) were the most frequently isolated pathogens. HAI was associated with prolonged ventilation duration (P = 0.005), Intensive Care Unit stay (P = 0.0004), and hospital stay (P = 0.002). Multivariate risk factor analysis revealed that preoperative hospital stay (odds ratio [OR] 1.22, 95% confidence interval (CI) 1.6-1.39, P = 0.004), and prolonged cardiopulmonary bypass (CPB) (OR 1.03, 95% CI 1.01-1.05, P = 0.001) were associated with the development of HAI.
CONCLUSION: HAI still remains a dreaded complication in infants after OHS and contributing to morbidity and mortality. Strategies such as decreasing preoperative hospital stay, CPB time, and early extubation should be encouraged to prevent HAI.

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PMCID: PMC5455021
PMID: 28584431

Conflict of interest statement: There are no conflicts of interest.

101: Saini L, Chakrabarty B, Kumar A, Gulati S. Microcephaly with generalized dystonia: Exception to the rule. Neurol India. 2017 May-Jun;65(3):669-670. doi: 10.4103/neuroindia.NI_1368_15. PubMed PMID: 28488652.

102: Saini L, Chakrabarty B, Pastel H, Israni A, Kumar A, Gulati S. Dengue fever triggering hemiconvulsion hemiplegia epilepsy in a child. Neurol India. 2017 May-Jun;65(3):636-638. doi: 10.4103/neuroindia.NI_1367_15. PubMed PMID: 28488637.

103: Saluja T, Palkar S, Misra P, Gupta M, Venugopal P, Sood AK, Dhati RM, Shetty A, Dhaded SM, Agarkhedkar S, Choudhury A, Kumar R, Balasubramanian S, Babji S, Adhikary L, Dupuy M, Chadha SM, Desai F, Kukian D, Patnaik BN, Dhingra MS. Live attenuated tetravalent (G1-G4) bovine-human reassortant rotavirus vaccine (BRV-TV): Randomized, controlled phase III study in Indian infants. Vaccine. 2017 Jun 16;35(28):3575-3581. doi: 10.1016/j.vaccine.2017.05.019. Epub 2017 May 20. PubMed PMID: 28536027.

BACKGROUND: Rotavirus remains the leading cause of diarrhoea among children <5years. We assessed immunogenic non-inferiority of a tetravalent bovine-human reassortant rotavirus vaccine (BRV-TV) over the licensed human-bovine pentavalent rotavirus vaccine RV5.
METHODS: Phase III single-blind study (parents blinded) in healthy infants randomized (1:1) to receive three doses of BRV-TV or RV5 at 6-8, 10-12, and 14-16weeks of age. All concomitantly received a licensed diphtheria, tetanus, pertussis, hepatitis B, Haemophilus influenzae type b conjugate vaccine (DTwP-HepB-Hib) and oral polio vaccine (OPV). Immunogenic non-inferiority was evaluated in terms of the inter-group difference in anti-rotavirus serum IgA seroresponse (primary endpoint), and seroprotection/seroresponse rates to DTwP-HepB-Hib and OPV vaccines. Seroresponse was defined as a ≥4-fold increase in titers from baseline to D28 post-dose 3. Non-inferiority was declared if the difference between groups (based on the lower limit of the 95% confidence interval [CI]) was above -10%. Each subject was evaluated for solicited adverse events 7days and unsolicited & serious adverse events 28days following each dose of vaccination.
RESULTS: Of 1195 infants screened, 1182 were randomized (590 to BRV-TV; 592 to RV5). Non-inferiority for rotavirus serum IgA seroresponse was not established: BRV-TV, 47.1% (95%CI: 42.8; 51.5) versus RV5, 61.2% (95%CI: 56.8; 65.5); difference between groups, -14.08% (95%CI: -20.4; -7.98). Serum IgA geometric mean concentrations at D28 post-dose 3 were 28.4 and 50.1U/ml in BRV-TV and RV5 groups, respectively. For all DTwP-HepB-Hib and OPV antigens, seroprotection/seroresponse was elicited in both groups and the -10% non-inferiority criterion between groups was met. There were 16 serious adverse events, 10 in BRV-TV group and 6 in RV5 group; none were classified as vaccine related. Both groups had similar vaccine safety profiles.
CONCLUSION: BRV-TV was immunogenic but did not meet immunogenic non-inferiority criteria to RV5 when administered concomitantly with routine pediatric antigens in infants.

DOI: 10.1016/j.vaccine.2017.05.019
PMID: 28536027

104: Sarkar S, Balhara YPS, Tewari A, Singh J, Gautam N. Reasons of Disciplinary Discharges from a Tertiary Care De-addiction Setting in India. Indian J Psychol Med. 2017 May-Jun;39(3):378-379. doi: 10.4103/0253-7176.207321. PubMed PMID: 28615784; PubMed Central PMCID: PMC5461860.

105: Sethi SK, Sinha R, Rohatgi S, Kher V, Iyengar A, Bagga A. Pediatric renal transplant practices in India. Pediatr Transplant. 2017 May;21(3). doi: 10.1111/petr.12892. Epub 2017 Feb 1. PubMed PMID: 28145625.

Limited access to tertiary-level health care, limited trained pediatric nephrologists and transplant physicians, lack of facilities for dialysis, lack of an effective deceased donor program, non-affordability, and non-adherence to immunosuppressant drugs poses a major challenge to universal availability of pediatric transplantation in developing countries. We present the results of a survey which, to the best of our knowledge, is the first such published attempt at understanding the current state of pediatric renal transplantation in India. A designed questionnaire formulated by a group of pediatric nephrologists with the aim of understanding the current practice of pediatric renal transplantation was circulated to all adult and pediatric nephrologists of the country. Of 26 adult nephrologists who responded, 16 (61.5%) were involved in pediatric transplantation, and 10 of 15 (66.6%) pediatric nephrologists were involved in pediatric transplantation. Most of the centers doing transplants were private/trust institution with only three government institutions undertaking it. Induction therapy was varied among pediatric and adult nephrologists. There were only a few centers (n=5) in the country routinely doing >5 transplants per year. Preemptive transplants and protocol biopsies were a rarity. The results demonstrate lower incidence of undertaking pediatric transplants in children below 6 years, paucity of active cadaveric programs and lack of availability of trained pediatric nephrologists and staff. In contrast to these dissimilarities, the immunosuppressant use seems to be quite similar to Western registry data with majority favoring induction agent and triple immunosuppressant (steroid, mycophenolate mofetil and tacrolimus) for maintenance. The survey also identifies major concerns in availability of this service to all regions of India as well as to all economic segments.

DOI: 10.1111/petr.12892
PMID: 28145625 [Indexed for MEDLINE]

106: Shaik S, Rajkumar RP, Menon V, Sarkar S. Gender, Life Events, and Depression: An Exploratory Study. Indian J Psychol Med. 2017 May-Jun;39(3):330-335. doi: 10.4103/0253-7176.207339. PubMed PMID: 28615769; PubMed Central PMCID: PMC5461845.

CONTEXT: Literature is inconsistent about the role of gender in mediating the relationship between life events and depression.
AIM: Our objective was to explore gender differences in patterns and frequencies of stressful life events before onset of a depressive episode.
SETTING AND DESIGN: Cross-sectional study at a tertiary care center.
SUBJECTS AND METHODS: One hundred patients fulfilling Diagnostic and Statistical Manual of Mental Disorders fourth edition criteria for current major depression (50 males and 50 females) were recruited for the study. Structured instruments were used to assess psychiatric comorbidity, episode severity, and stressful life events. We compared the number and frequency of stressful life events between genders and their relationship with demographic and clinical variables.
STATISTICAL ANALYSIS USED: Mann-Whitney U-test and Chi-square test.

RESULTS: Women with depression were older, more likely to be married (P < 0.01), had lower rates of comorbid panic disorder (P < 0.01) and nicotine dependence (P = 0.016) compared to men. Total stress scores and median number of stressful events in the year before onset of depression were significantly lower in women (P < 0.01). Getting married, job or property-related stressors, and breakup of friendship were more commonly reported stressors among males while more females reported dowry-related issues before symptom onset. In stratified analysis, these gender differences continued to hold good only in those with comorbid dysthymia.
CONCLUSION: There appears to be a sex-specific effect of certain life events on depression. Comorbid dysthymia may play an important role in mediating this differential stress sensitivity across genders.

DOI: 10.4103/0253-7176.207339
PMCID: PMC5461845
PMID: 28615769

Conflict of interest statement: There are no conflicts of interest.

107: Sharma P, Dahiya S, Kumari B, Balaji V, Sood S, Das BK, Kapil A. Pefloxacin as a surrogate marker for quinolone susceptibility in Salmonella enterica serovars Typhi & Paratyphi A in India. Indian J Med Res. 2017 May;145(5):687-692. doi: 10.4103/ijmr.IJMR_494_16. PubMed PMID: 28948961; PubMed Central PMCID: PMC5644305.

BACKGROUND & OBJECTIVES: The emergence of resistance to fluoroquinolones in enteric fever despite the pathogen being susceptible by in vitro laboratory results, led to repeated changes in Clinical and Laboratory Standard Institute (CLSI) guidelines for this class of antibiotics to have specific and sensitive interpretative criteria. In 2015, CLSI added pefloxacin disk diffusion criteria as a surrogate marker for fluoroquinolone susceptibility. This study was carried out to evaluate the use of pefloxacin as a surrogate marker for ciprofloxacin, ofloxacin and levofloxacin susceptibility in clinical isolates of Salmonella Typhi and S. Paratyphi A.
METHODS: A total of 412 strains of S. Typhi and S. Paratyphi A were studied for pefloxacin disk diffusion test as a surrogate marker for susceptibility to ciprofloxacin, ofloxacin and levofloxacin as per CLSI and the European Committee on Antimicrobial Susceptibility Testing (EUCAST) guidelines. Molecular mechanisms of resistance to fluoroquinolones were also determined and correlated with pefloxacin susceptibility breakpoints.
RESULTS: Of the total 412 strains, 34 were susceptible to ciprofloxacin and 33 each to levofloxacin and ofloxacin using CLSI minimum inhibitory concentration (MIC) breakpoints. There was a positive correlation between MICs with correlation coefficients 0.917, 0.896 and 0.958 for the association between ciprofloxacin and ofloxacin, ciprofloxacin and levofloxacin and ofloxacin and levofloxacin, respectively (P <0.001). The sensitivity, specificity and positive predictive value of pefloxacin as a surrogate marker using ciprofloxacin MIC as a gold standard were 100, 99.5 and 94.4 per cent, while 100, 99.2 and 91.7 per cent taking ofloxacin and levofloxacin MIC as gold standard. Mutations in target genes correlated with the pefloxacin susceptibility results.
INTERPRETATION & CONCLUSIONS: Our results showed that pefloxacin served as a good surrogate marker for the detection of susceptibility to ciprofloxacin, ofloxacin and levofloxacin in S. Typhi and S. Paratyphi A. Further studies are required to confirm these findings.

DOI: 10.4103/ijmr.IJMR_494_16
PMCID: PMC5644305
PMID: 28948961

108: Sharma R, Garg K, Agarwal S, Agarwal D, Chandra PS, Kale SS, Sharma BS,

Mahapatra AK. Microvascular decompression for hemifacial spasm: A systematic review of vascular pathology, long term treatment efficacy and safety. Neurol India. 2017 May-Jun;65(3):493-505. doi: 10.4103/neuroindia.NI_1166_16. Review. PubMed PMID: 28488609.

INTRODUCTION: Hemifacial spasm (HS) is a rare disorder caused by the compression of facial nerve root exit zone (REZ) at the brainstem by a vascular loop. Microvascular decompression (MVD) is a popular treatment modality for HS.
OBJECTIVE: The purpose of this study was to determine the long-term efficacy and safety of MVD for HS by assessing the effect of the procedure from the literature published over the last 25 years.
MATERIALS AND METHODS: A systematic data review from 1992 to 2015 using specific eligibility criteria yielded 27 studies on MVD for HS, the data of which were pooled and subjected to a meta-analysis.
RESULTS: The pooled odds ratio (OR) revealed by the meta-analysis showed that anterior inferior cerebellar artery was the most common offending vessel in 37.8% (95% confidence interval [CI]: 27.8-47.7%) of the patients. Complete resolution of HS was seen in 88.5% (95% CI: 86.7-90.4%) of the patients after a long-term follow up. The complication rate was low following MVD, the most common being temporary facial paresis in 5.9% (95% CI: 4.3-7.5%) of patients.
CONCLUSIONS: MVD is a safe and effective treatment for HS with long-term benefits and a low complication rate.

DOI: 10.4103/neuroindia.NI_1166_16
PMID: 28488609

109: Sharma S, Gupta DK. Surgical techniques for esophageal replacement in children. Pediatr Surg Int. 2017 May;33(5):527-550. doi: 10.1007/s00383-016-4048-1. Epub 2017 Jan 6. Review. PubMed PMID: 28062891.

PURPOSE: Surgical techniques for esophageal replacement (ER) in children include colon interposition, gastric tube, gastric transposition, and jejunal interposition. This review evaluates the merits and demerits of each.
METHOD: Surgical techniques, complications, and outcome of ER are reviewed over last seven decades.
RESULTS: Colon interposition is the time-tested procedure with minimal and less serious complications. Long-term complications include reflux, halitosis, colonic segment dilatation, and anastomotic stricture, sometimes requiring surgical interventions especially for dilatation and reflux. Gastric tube is technically more risky, and associated with early serious complications like prolonged leak in neck or mediastinum, graft necrosis, and ischemia leading to stricture of the tube. Long-term results are good. Gastric transposition is much simpler, can be performed in emergency and in newborns. It involves a single anastomosis in the neck. Post-operative complications include gastric stasis, bile reflux, restricted growth, and decreased pulmonary functional capacity. Jejunal interposition has not been used extensively due to short mesentery but long-term results are good in expert hands.
CONCLUSION: Colon is the most preferred and safest organ for ER. Stomach is a vascular and muscular organ with lower risk of ischemia. Gastric tube is a demanding technique. Jejunum or ileum is alternative for redo cases.

DOI: 10.1007/s00383-016-4048-1
PMID: 28062891 [Indexed for MEDLINE]

110: Sharma SK, Yadav SL, Singh U, Wadhwa S. Muscle Activation Profiles and Co-Activation of Quadriceps and Hamstring Muscles around Knee Joint in Indian Primary Osteoarthritis Knee Patients. J Clin Diagn Res. 2017 May;11(5):RC09-RC14. doi: 10.7860/JCDR/2017/26975.9870. Epub 2017 May 1. PubMed PMID: 28658860; PubMed Central PMCID: PMC5483762.

INTRODUCTION: Osteoarthritis (OA) of knee is a common joint disease. It is associated with reduced knee joint stability due to impaired quadriceps strength, pain, and an altered joint structure. There is altered muscle activation in knee OA patients, which interferes with normal load distribution around the knee and facilitates disease progression.
AIM: Our primary aim was to determine activation patterns of the muscles i.e., quadriceps and hamstrings in knee OA patients during walking. We also studied co-activation of muscles around knee joint in primary OA knee patients including directed medial and lateral co-contractions.
MATERIALS AND METHODS: This observational study was done at Department of Physical Medicine and Rehabilitation, All India Institute of Medical Sciences, New Delhi, India. Fourty-four patients with medial compartment primary knee OA were included in study after satisfying inclusion and exclusion criteria. All the patients were assessed for mean, peak and integrated Root Mean Square (RMS), EMG values, muscle activation patterns and co-activation of muscles around knee joint by surface Electromyography (EMG) analysis of Vastus Medialis Obliques (VMO), Vastus Lateralis (VL), Semitendinosus (SMT) and Biceps Femoris (BF) muscles during gait cycle. The EMG waveform for each muscle was amplitude normalized and time normalized to 100% of gait cycle and plotted on graph. Quantitative variables were assessed for normal distribution and accordingly mean±SD or median (range), as appropriate, was computed.
RESULTS: For primary OA knee, mean age 61±5 years, mean weight 63.7±10.1 kg, mean height 153.9±7.2 cm, and mean Body Mass Index (BMI) 26.8±3.0 kg/m(2) was found. The muscle activity of hamstrings (SMT muscle and BF) was increased during midstance, late stance and early swing phase of gait cycle as compared to quadriceps (VMO and VL) muscle activity respectively, suggesting co-contraction of opposing muscles around knee joint.
CONCLUSION: Patients with knee OA walk with increased hamstring muscle activity (during late stance and early swing phase) and reduced quadriceps recruitment. Altered neuro-muscular control around knee interferes with normal load distribution and facilitates disease progression in knee joint.

DOI: 10.7860/JCDR/2017/26975.9870
PMCID: PMC5483762 [Available on 2017-07-01]
PMID: 28658860

111: Sikka K, Kairo A, Singh CA, Roy TS, Lalwani S, Kumar R, Thakar A, Sharma SC. An Evaluation of the Surgical Trauma to Intracochlear Structures After Insertion of Cochlear Implant Electrode Arrays: A Comparison by Round Window and Antero-Inferior Cochleostomy Techniques. Indian J Otolaryngol Head Neck Surg. 2017 Sep;69(3):375-379. doi: 10.1007/s12070-017-1143-0. Epub 2017 May 5. PubMed PMID: 28929071; PubMed Central PMCID: PMC5581770.

To evaluate the extent of intracochlear damage by histologic assessment of cadaveric temporal bones after insertion of cochlear implants by: round window approach and cochleostomy approach. Cochlear implantation was performed by transmastoid facial recess approach in 10 human cadaveric temporal bones. In 5 temporal bones, electrode insertion was acheieved by round window approach and in the remaining 5 bones, by cochleostomy approach. The bones were fixed, decalcified, sectioned and studied histologically. Grading of insertion trauma was assessed. In the round window insertion group, 2 bones had to be excluded from the study: one was damaged during handling with electrode extrusion and another bone did not show any demonstrable identifiable cochlear structure. Out of the 3 temporal bones, a total of 35 sections were examined: 24 demonstrated normal cochlea, 4 had basilar membrane bulging and 7 had fracture of bony spiral lamina. In the cochleostomy group, histology of 2 bones had to be discarded due to lack of any identifiable inner ear structures. Out of the 3 bones studied, 18 sections were examined: only 3 were normal, 4 sections had some bulge in spiral

lamina and 11 had fracture of bony spiral lamina. The fracture of spiral lamina and bulge of basement membrane proportion is relatively higher if we perform cochleostomy as compared to round window approach. Therefore, round window insertion is relatively less traumatic as compared to cochleostomy. However, our sample size was very small and a study with a larger sample is required to further validate these findings.

DOI: 10.1007/s12070-017-1143-0
PMCID: PMC5581770 [Available on 2018-09-01]
PMID: 28929071

112: Singh A, Kumar P, Chandrashekhara SH, Kumar A. Unravelling chloroma: review of imaging findings. Br J Radiol. 2017 Jul;90(1075):20160710. doi: 10.1259/bjr.20160710. Epub 2017 May 23. Review. PubMed PMID: 28445074; PubMed Central PMCID: PMC5594979.

Chloroma refers to the extramedullary proliferation of immature myeloid precursors occurring in a gamut of myeloproliferative and myelodysplastic conditions; acute myeloid leukaemia being the commonest. With non-specific clinical and imaging manifestations, it runs a high risk of misdiagnosis which may significantly affect the outcome of an otherwise treatable lesion. Also with these lesions heralding impending blast crises, awareness of the imaging findings becomes imperative. Imaging not only helps raise the suspicion but also guides further confirmation by demonstration of specific immunohistochemistry markers, ensuring timely institution of chemotherapy. In general, solid enhancing lesions in any haematological disorder could be chloromas, especially if multifocal with mass effect.

DOI: 10.1259/bjr.20160710
PMCID: PMC5594979 [Available on 2018-07-01]
PMID: 28445074 [Indexed for MEDLINE]

113: Singh D, K Mishra S, Agarwal E, Sharma R, Bhartiya S, Dada T. Assessment of Retinal Nerve Fiber Layer Changes by Cirrus High-definition Optical Coherence Tomography in Myopia. J Curr Glaucoma Pract. 2017 May-Aug;11(2):52-57. doi: 10.5005/jp-journals-10028-1223. Epub 2017 Aug 5. PubMed PMID: 28924339; PubMed Central PMCID: PMC5577120.

INTRODUCTION: To evaluate the relationship between retinal nerve fiber layer (RNFL) thickness measured by Cirrus high-definition (HD) optical coherence tomography (OCT) and the axial length and refractive error of the eye.
MATERIALS AND METHODS: A total of 100 eyes of 100 healthy subjects (age 20-34 years with M/F ratio of 57/43), comprising 50 eyes with emmetropia [spherical equivalent (SE) 0 D], 25 eyes with moderate myopia (SE between -4 D and -8 D), and 25 eyes with high myopia (SE between -8 D and -12 D) were analyzed in this cross-sectional study. Average and mean clock hour RNFL thicknesses were measured by cirrus HD-OCT and compared between the three groups. Associations between RNFL measurements and axial length and SE were evaluated by linear regression analysis.
RESULTS: The average RNFL measurements were significantly lower in high myopia (78.68 +/- 5.67) and moderate myopia (83.76 +/- 3.44) group compared with emmetropia group (91.26 +/- 2.99), also in the superior and inferior mean clock hours. Significant correlations were evident between RNFL measurements and the SE and axial length. The average RNFL thickness decreased with increasing axial length (r = -0.8115) and negative refractive power (r = 0.8397). Myopia also affected the RNFL thickness distribution. As the axial length increased and the SE decreased, the thickness of the superior, inferior, and nasal peripapillary RNFL decreased.
CONCLUSION: The axial length/refractive error of the eye affected the average

RNFL thickness and the RNFL thickness distribution. Analysis of RNFL thickness in the evaluation of glaucoma should always be interpreted with reference to the refractive status. When interpreting the RNFL thickness of highly myopic patients by OCT, careful attention must be given to the inherently thinner RNFL to avoid a false diagnosis of glaucoma.
HOW TO CITE THIS ARTICLE: Singh D, Mishra SK, Agarwal E, Sharma R, Bhartiya S, Dada T. Assessment of Retinal Nerve Fiber Layer Changes by Cirrus High-definition Optical Coherence Tomography in Myopia. J Curr Glaucoma Pract 2017;11(2):52-57.

DOI: 10.5005/jp-journals-10028-1223
PMCID: PMC5577120
PMID: 28924339

Conflict of interest statement: Source of support: Nil Conflict of interest: None

114: Singh I, Swarup V, Shakya S, Goyal V, Faruq M, Srivastava AK. Single-step blood direct PCR: A robust and rapid method to diagnose triplet repeat disorders. J Neurol Sci. 2017 Aug 15;379:49-54. doi: 10.1016/j.jns.2017.05.042. Epub 2017 May 22. PubMed PMID: 28716278.

OBJECTIVE: DNA extraction prior to polymerase chain reaction (PCR) amplification in genetic diagnoses of triplet repeat disorders (TRDs) is tedious and labour-intensive and has the limitations of sample contamination with foreign DNA, including that from preceding samples. Therefore, we aimed to develop a rapid, robust, and cost-effective method for expeditious genetic investigation of TRDs from whole blood as a DNA template.
METHODS: Peripheral blood samples were collected from 70 clinically suspected patients of progressive ataxia. The conventional method using genomic DNA and single-step Blood-Direct PCR (BD-PCR) method with just 2µl of whole blood sample were tested to amplify triplet repeat expansion in genes related to spinocerebellar ataxia (SCA) types 1, 2, 3, 12 and Friedreich's ataxia (FRDA). Post-PCR, the allele sizes were mapped and repeat numbers were calculated using GeneMapper and macros run in Microsoft Excel programmes.
RESULTS: Successful amplification of target regions was achieved in all samples by both methods. The frequency of the normal and mutated allele was concordant between both methods, diagnosing 37% positive for a mutation in either of the candidate genes. The BD-PCR resulted in higher intensities of product peaks of normal and pathogenic alleles.
CONCLUSIONS: The nearly-accurate sizing of the normal and expanded allele was achieved in a shorter time (4-5h), without DNA extraction and any risk of cross contamination, which suggests the BD-PCR to be a reliable, inexpensive, and rapid method to confirm TRDs. This technique can be introduced in routine diagnostic procedures of other tandem repeat disorders.

DOI: 10.1016/j.jns.2017.05.042
PMID: 28716278

115: Singh M, Thakral D, Kar HK, Rishi N, Sharma PK, Mitra DK. Distinct clinico-immunological profile of patients infected with human papilloma virus genotypes 6 and 11. Virusdisease. 2017 Jun;28(2):200-204. doi: 10.1007/s13337-017-0370-z. Epub 2017 May 20. PubMed PMID: 28770246; PubMed Central PMCID: PMC5510631.

Anogenital warts are primarily caused by Human Papillomavirus (HPV) type 6 and 11, which belong to the taxonomic family Papillomaviridae, genus alpha-papillomavirus and species 10. The presentation of the warts is varied and most of the patients have high recurrence rate of wart lesions. Studies had shown

that an effective cellular immune response is required for the control of HPV infection. Here, we report distinct clinico-immunological profile of two patients presenting with venereal warts caused by HPV genotypes 6 and 11. The Case 1 manifested greater number of verrucous warts and case 2 had fewer subtle lesions. Further, evaluation of HPV antigen-specific cellular immune response revealed a robust T cell response against HPV6 peptide and a weak response against HPV11 in case 1. Interestingly, HPV genotyping revealed type 6 in case 1 with greater severity of infection and robust immune response against HPV6 peptide. In contrast, case 2 presented with milder infection and weak immune response and was positive for genotype 11. More extensive study with larger cohorts will strengthen our observation and could be relevant for designing immunotherapeutic adjunct strategies along with the standard treatment for rapid clearance of HPV infections in these patients. This communication reports immune status of two patients with venereal warts and their correlation with clinical presentation and the genotyping.

DOI: 10.1007/s13337-017-0370-z
PMCID: PMC5510631 [Available on 2018-06-01]
PMID: 28770246

116: Singh N, Madhu M, Vanamail P, Malik N, Kumar S. Efficacy of metformin in improving glycaemic control & perinatal outcome in gestational diabetes mellitus: A non-randomized study. Indian J Med Res. 2017 May;145(5):623-628. doi: 10.4103/ijmr.IJMR_1358_15. PubMed PMID: 28948952; PubMed Central PMCID: PMC5644296.

BACKGROUND & OBJECTIVES: Gestational diabetes mellitus (GDM) can cause adverse perinatal outcome if not treated. Although insulin therapy has been the main treatment modality over decades but considering its cost and parenteral mode of administration, it does not seem to be appropriate, especially in low-resource settings. The objective of this study was to evaluate the role of metformin in GDM and know its efficacy as well as adverse effect on foetus and mother.
METHODS: All pregnant women with GDM who were not controlled on medical nutrition therapy and required metformin therapy were included in the study. Careful monitoring of blood sugar was done. Development of any maternal or foetal complications and adverse effect were recorded.
RESULTS: A total of 2797 pregnant women were screened, of whom 233 (8.3%) were found to have GDM. Of the 64 women with GDM (28.7%) who required metformin therapy, majority (93.8%) achieved blood sugar control, whereas three (4.7%) women failed. Caesarean section rate was 54 per cent, and 15.6 per cent neonates were large for gestational age. Only two (3.1%) women had gastrointestinal side effects which were minor and got resolved with time. No case of hypoglycaemia or perinatal mortality was reported.
INTERPRETATION & CONCLUSIONS: Our findings indicate that metformin may be used as a safe and effective oral hypoglycaemic agent in GDM, especially in low-resource settings where cost, storage and compliance are logistic issues. However, long-term follow up studies are needed to solve issues related to its safety in pregnancy.

DOI: 10.4103/ijmr.IJMR_1358_15
PMCID: PMC5644296
PMID: 28948952

117: Singh PM, Borle A. Response to Letter to the Editor on "Role of Periarticular Liposomal Bupivacaine Infiltration in Patients Undergoing Total Knee Arthroplasty: A Meta-Analysis of Comparative Trials". J Arthroplasty. 2017 Sep;32(9):2929. doi: 10.1016/j.arth.2017.04.023. Epub 2017 May 18. PubMed PMID: 28601244.

118: Suchal K, Malik S, Khan SI, Malhotra RK, Goyal SN, Bhatia J, Ojha S, Arya DS. Molecular Pathways Involved in the Amelioration of Myocardial Injury in Diabetic Rats by Kaempferol. Int J Mol Sci. 2017 May 15;18(5). pii: E1001. doi: 10.3390/ijms18051001. PubMed PMID: 28505121; PubMed Central PMCID: PMC5454914.

There is growing evidence that chronic hyperglycemia leads to the formation of advanced glycation end products (AGEs) which exerts its effect via interaction with the receptor for advanced glycation end products (RAGE). AGE-RAGE activation results in oxidative stress and inflammation. It is well known that this mechanism is involved in the pathogenesis of cardiovascular disease in diabetes. Kaempferol, a dietary flavonoid, is known to possess antioxidant, anti-apoptotic, and anti-inflammatory activities. However, little is known about the effect of kaempferol on myocardial ischemia-reperfusion (IR) injury in diabetic rats. Diabetes was induced in male albino Wistar rats using streptozotocin (70 mg/kg; i.p.), and rats with glucose level >250 mg/dL were considered as diabetic. Diabetic rats were treated with vehicle (2 mL/kg; i.p.) and kaempferol (20 mg/kg; i.p.) daily for a period of 28 days and on the 28th day, ischemia was produced by one-stage ligation of the left anterior descending coronary artery for 45 min followed by reperfusion for 60 min. After completion of surgery, rats were sacrificed and the heart tissue was processed for biochemical, morphological, and molecular studies. Kaempferol pretreatment significantly reduced hyperglycemia, maintained hemodynamic function, suppressed AGE-RAGE axis activation, normalized oxidative stress, and preserved morphological alterations. In addition, there was decreased level of inflammatory markers (tumor necrosis factor-α (TNF-α), interleukin-6 (IL-6), and NF-κB), inhibition of active c-Jun N-terminal kinase (JNK) and p38 proteins, and activation of Extracellular signal regulated kinase 1/2 (ERK1/2) a prosurvival kinase. Furthermore, it also attenuated apoptosis by reducing the expression of pro-apoptotic proteins (Bax and Caspase-3), Terminal deoxynucleotidyl transferase dUTP nick end labeling (TUNEL) positive cells, and increasing the level of anti-apoptotic protein (Bcl-2). In conclusion, kaempferol attenuated myocardial ischemia-reperfusion injury in diabetic rats by reducing AGE-RAGE/ mitogen activated protein kinase (MAPK) induced oxidative stress and inflammation.

DOI: 10.3390/ijms18051001
PMCID: PMC5454914
PMID: 28505121

119: Surana V, Dabas A, Khadgawat R, Marwaha RK, Sreenivas V, Ganie MA, Gupta N, Mehan N. Pubertal Onset in Apparently Healthy Indian Boys and Impact of Obesity. Indian J Endocrinol Metab. 2017 May-Jun;21(3):434-438. doi: 10.4103/ijem.IJEM_18_17. PubMed PMID: 28553601; PubMed Central PMCID: PMC5434729.

OBJECTIVE: Primary - to determine the age of pubertal onset in Indian boys. Secondary - (a) to assess the impact of obesity on pubertal timing, (b) to assess the relationship between gonadotropins and puberty.
DESIGN: Cross-sectional.
SETTING: General community-seven schools across New Delhi.
PARTICIPANTS: Random sample of 1306 school boys, aged 6-17 years.
MATERIALS AND METHODS: Anthropometric measurement for weight and height and pubertal staging was performed for all subjects. Body mass index (BMI) was calculated to define overweight/obesity. Serum luteinizing hormone (LH), follicle stimulating hormone, and serum testosterone were measured in every sixth subject.
MAIN OUTCOME MEASURE: Age at pubertal onset-testicular volume ≥4 mL (gonadarche) and pubic hair Stage II.
RESULTS: Median age of attaining gonadarche and pubarche was 10.41 years (95% confidence interval [CI]: 10.2-10.6 years) and 13.60 (95% CI: 13.3-14.0 years), respectively. No significant difference in the age of attainment of gonadarche

was observed in boys with normal or raised BMI, though pubarche occurred 8 months earlier in the latter group. Serum gonadotropins and testosterone increased with increasing stages of puberty but were unaffected by BMI. Serum LH level of 1.02 mIU/mL and testosterone level of >0.14 ng/mL showed the best prediction for pubertal onset.
CONCLUSION: The study establishes a secular trend of the age of onset of puberty in Indian boys. Pubarche occurred earlier in overweight/obese boys. The cutoff levels of serum LH and testosterone for prediction of pubertal onset have been established.

DOI: 10.4103/ijem.IJEM_18_17
PMCID: PMC5434729
PMID: 28553601

120: Talwar GP, Gupta JC, Mustafa AS, Kar HK, Katoch K, Parida SK, Reddi PP, Ahmed N, Saini V, Gupta S. Development of a potent invigorator of immune responses endowed with both preventive and therapeutic properties. Biologics. 2017 May 2;11:55-63. doi: 10.2147/BTT.S128308. eCollection 2017. Review. PubMed PMID: 28496303; PubMed Central PMCID: PMC5422320.

This article reviews briefly the making of an immunoprophylactic-cum-immunotherapeutic vaccine against leprosy. The vaccine is based on cultivable, heat-killed atypical mycobacteria, whose gene sequence is now known. It has been named Mycobacterium indicus pranii. It has received the approval of the Drug Controller General of India and the US Food and Drug Administration. Besides leprosy, M. indicus pranii has found utility in the treatment of category II ("difficult to treat") tuberculosis. It also heals ugly anogenital warts. It has preventive and therapeutic action against SP2/O myelomas. It is proving to be a potent adjuvant for enhancing antibody titers of a recombinant vaccine against human chorionic gonadotropin, with the potential of preventing pregnancy without derangement of ovulation and menstrual regularity in sexually active women.

DOI: 10.2147/BTT.S128308
PMCID: PMC5422320
PMID: 28496303

Conflict of interest statement: Disclosure The authors report no conflicts of interest in this work.

121: Talwar S, Kumar MV, Nehra A, Malhotra Kapoor P, Makhija N, Sreenivas V, Choudhary SK, Airan B. Bidirectional Glenn on cardiopulmonary bypass: A comparison of three techniques. J Card Surg. 2017 May;32(5):303-309. doi: 10.1111/jocs.13123. Epub 2017 Apr 9. PubMed PMID: 28393444.

OBJECTIVE: To analyze the intraoperative and early results of the bidirectional Glenn (BDG) procedure performed on cardiopulmonary bypass (CPB) using three different techniques.
METHODS: Between September 2013 and June 2015, 75 consecutive patients (mean age 42 ± 34.4 months) undergoing BDG were randomly assigned to either technique I: open anastomosis or technique II: superior vena cava (SVC) cannulation or technique III: intermittent SVC clamping. We monitored the cerebral near infrared spectrophotometry (NIRS), SVC pressure, CPB time, intensive care unit (ICU) stay, and neurocognitive function.
RESULTS: Patients in technique III had abnormal lower NIRS values during the procedure (57 ± 7.4) compared to techniques I and II (64 ± 7.5 and 61 ± 8.0, P = 0.01). Postoperative SVC pressure in technique III was higher than other two groups (17.6 ± 3.7 mmHg vs. 14.2 ± 3.5 mmHg and 15.3 ± 2.0 mmHg in techniques I

and II, respectively=0.0008). CPB time was highest in technique II (44±18min) compared to techniques I and III (29±14min and 38±16min, P=0.006), respectively. ICU stay was longer in technique III (30±15h) compared to the other two techniques (22±8.5h and 27±8.3h in techniques I and II, respectively=0.04). No patient experienced significant neurocognitive dysfunction.
CONCLUSION: All techniques of BDG provided acceptable results. The open technique was faster and its use in smaller children merits consideration. The technique of intermittent clamping should be used as a last resort.

DOI: 10.1111/jocs.13123
PMID: 28393444 [Indexed for MEDLINE]

122: Talwar S, Gupta A, Nehra A, Makhija N, Kapoor PM, Sreenivas V, Choudhary SK, Airan B. Bidirectional superior cavopulmonary anastomosis with or without cardiopulmonary bypass: A randomized study. J Card Surg. 2017 Jun;32(6):376-381. doi: 10.1111/jocs.13149. Epub 2017 May 21. PubMed PMID: 28543642.

OBJECTIVES: This study aims to compare the bidirectional superior cavopulmonary anastomosis (BDG) with or without cardiopulmonary bypass (CPB).
METHODS: 100 patients undergoing BDG were randomized into two groups: Off-CPB or on-CPB groups. All patients underwent near-infrared spectrophotometry (NIRS) and bispectral index (BIS) monitoring and pre- and postoperative serum 100 beta protein measurements (Sβ100) and neuro-cognitive evaluation. Postoperative intensive care unit (ICU) parameters were also studied.
RESULTS: The median age of patients in the on-CPB and off-CPB group were 42 and 48 months, respectively (p=0.11). Median weights in the on-CPB group and off-CPB group were 13.5 (5-50) kg and 15 (7-36) kg, respectively (p=0.927). There was a significant rise in superior vena cava (SVC) pressure on SVC clamping in the off-CPB group (23.12±6.84 vs 2.98±2.22mmHg) on-CPB group (p<0.001). There was a significant fall in NIRS and BIS values from baseline in the off-CPB group during the anastomosis but there was no statistically significant change in serum Sβ100from pre-clamp to post-clamp in either group. Inotropic support, duration of ventilation, ICU stay, and hospital stay were significantly less in the off-CPB group (p<0.001). Assessment of Social Adaptive Functioning revealed no adverse sequelae. There were significant cost savings if surgery was performed off-CPB (p<0.001).
CONCLUSION: Off CPB-BDG is an economical and safe procedure. Duration of inotropic and mechanical ventilatory support, ICU, and hospital stay is significantly less. We did not observe any early adverse neurologic sequelae in patients undergoing off-CPB BDG.

DOI: 10.1111/jocs.13149
PMID: 28543642 [Indexed for MEDLINE]

123: Taywade SK, Damle NA, Behera A, Devasenathipathy K, Bal C, Tripathi M, Agarwal S, Tandon N, Chumber S, Seenu V. Comparison of 18F-Fluorocholine Positron Emission Tomography/Computed Tomography and Four-dimensional Computed Tomography in the Preoperative Localization of Parathyroid Adenomas-initial Results. Indian J Endocrinol Metab. 2017 May-Jun;21(3):399-403. doi: 10.4103/ijem.IJEM_536_16. PubMed PMID: 28553594; PubMed Central PMCID: PMC5434722.

OBJECTIVE: We aimed to compare the diagnostic accuracy of 18F-Fluorocholine

(FCH)-positron emission tomography/computed tomography (PET/CT) and four-dimensional (4D)- CT in detection and localization of eutopic and ectopic parathyroid adenoma (PA) in patients with hyperparathyroidism.
MATERIALS AND METHODS: Five patients with primary hyperparathyroidism underwent FCH-PET/CT after 60 min of 185 MBq of intravenous 18F-FCH administration. Images were acquired from head to mediastinum at 3 min per bed position. No intravenous contrast was used. All patients underwent 4D-CT within 2 weeks of the FCH-PET/CT, with a precontrast, post contrast arterial, and venous phase with 75 ml intravenous Iohexol 350 followed by 25 ml saline chase. Histopathology was considered as the gold standard.
RESULTS: Both modalities showed 100% concordance in the detection of parathyroid lesions. Both FCH-PET/CT and 4D-CT detected 7 lesions in 5 patients, with 4 patients having a single lesion, and 1 patient having three lesions. Of the 7 reported lesions, 4 were eutopic and 3 were ectopic. No additional lesions were detected by either modality in comparison to the other. All 7 specimens were resected and histopathology showed PA/hyperplasia.
CONCLUSION: FCH-PET/CT and 4D-CT are equally efficacious in detection and localization of eutopic and ectopic PA. This may open up the possibility of using FCH-PET/CT in patients with negative conventional imaging who cannot undergo contrast studies.

DOI: 10.4103/ijem.IJEM_536_16
PMCID: PMC5434722
PMID: 28553594

124: Temkar S, Karuppaiah N, Takkar B, Bhowmik D, Tripathi M, Ramakrishnan S, Sharma YR, Vohra R, Chawla R, Venkatesh P. Impact of estimated glomerular filtration rate on diabetic macular edema. Int Ophthalmol. 2017 May 18. doi: 10.1007/s10792-017-0557-8. [Epub ahead of print] PubMed PMID: 28523527.

PURPOSE: Diabetic macular edema (DME) is a major cause of visual impairment in patients with diabetes and is influenced by various systemic factors. This study evaluates the effect of renal status on DME using estimated glomerular filtration rate (eGFR) as a study marker.
METHODS: This was a prospective observational cross-sectional study. One hundred and ninety-five patients of diabetic retinopathy (DR) were included. Group 1 had patients of DR without DME (n = 100), and group 2 had patients of DR with DME (n = 95). All patients were evaluated for DR/DME-related risk factors. eGFR was calculated in all patients. Spectral domain optical coherence tomography (SDOCT) was done to identify the various patterns and severity of DME.
RESULTS: Group 2 patients had significantly higher comorbidities than those in group 1 ($p < 0.001$). Hba1c, total cholesterol, triglycerides, LDL/HDL ratio, systolic and diastolic blood pressures were significantly higher in group II ($p < 0.001$ in each). There was no significant difference between the groups in terms of blood urea, serum creatinine or eGFR. eGFR did not show a significant association with a specific SDOCT pattern or severity of DME.
CONCLUSION: Comorbidities are more common and more severe in patients with DME. However, eGFR as a marker was not useful in predicting either the severity or pattern of DME. eGFR, in its present form, may not be useful in the evaluation and management of patients with DME.

DOI: 10.1007/s10792-017-0557-8
PMID: 28523527

125: Thacker N, Bakhshi S, Chinnaswamy G, Vora T, Prasad M, Bansal D, Agarwala S, Kapoor G, Radhakrishnan V, Laskar S, Kaur T, Rath GK, Dhaliwal RS, Arora B. Management of Non-Hodgkin Lymphoma: ICMR Consensus Document. Indian J Pediatr. 2017 May;84(5):382-392. doi: 10.1007/s12098-017-2318-0. Epub 2017 Apr 5. PubMed PMID: 28378140.

Hitherto poor outcomes, paucity of data and heterogeneity in International approach to Pediatric NHL (Non-Hodgkin Lymphoma) prompted the need for guidelines for Indian population with vast variability in access, affordability and infrastructure across the country. These guidelines are based on consensus among the experts and best available evidence applicable to Indian setting. Evaluation of NHL should consist of easily doable and rapid tissue diagnosis (biopsy or flow cytometry of peripheral blood/malignant effusions), St Jude/IPNHLSS (International Pediatric Non-Hodgkin Lymphoma Staging System) and risk grouping with CSF (Cerebro-spinal fluid), bone marrow, whole body imaging [CECT (Contrast enhanced computerized tomography) ± MRI (Magnetic resonance imaging)] and blood investigations for LDH (Lactate dehydrogenase), TLS (Tumor lysis syndrome) and organ functions. Life threatening complications like SVCS (Superior vena cava syndrome)/Mediastinal syndrome and TLS need to pre-empted and promptly managed. All children with poor general condition, co-morbidities, metabolic or obstructive complications should receive a steroid or chemotherapy pro-phase first. For mature B-NHL (B cell - Non-Hodgkin lymphoma), in centres with good infrastructure and methotrexate levels, FAB-LMB-96 (French-American-British/Lymphomes Malins B) or BFM (Berlin-Frankfurt-Münster)-NHL-95 protocols may be used. In centres with limited infrastructure and/or no methotrexate levels; CHOP (Cyclophosphamide-hydroxydaunomycin-oncovin-prednisolone) (early stage) or MCP (Multi-centre protocol)-842 [all stages except CNS (Central nervous system) disease] may be used. Patients with poor early response should have escalated therapy. High-Risk B-NHL will benefit with addition of Rituximab to standard chemotherapy. Radiotherapy (RT) is not warranted. For lymphoblastic lymphoma, in centres with good infrastructure and methotrexate levels, BFM-95 protocol may be used. In centres with limited infrastructure and/or no methotrexate levels; modified MCP-841 with cytarabine, modified BFM-90 protocol with reduced-dose methotrexate or I-BFM 2009 protocol using Capizzi methotrexate may be considered. For ALCL (Anaplastic large cell lymphoma), in centres with good infrastructure and methotrexate levels, ALCL-99 protocol may be considered. In centres with limited infrastructure and/or no methotrexate levels; CHOP (limited-stage only), modified MCP-842 protocol or APO (Adriamycin-prednisolone-oncovin) regimen may be used.

DOI: 10.1007/s12098-017-2318-0
PMID: 28378140

126: Tiku VR, Jiang B, Kumar P, Aneja S, Bagga A, Bhan MK, Ray P. First study conducted in Northern India that identifies group C rotavirus as the etiological agent of severe diarrhea in children in Delhi. Virol J. 2017 May 30;14(1):100. doi: 10.1186/s12985-017-0767-8. PubMed PMID: 28558823; PubMed Central PMCID: PMC5450416.

BACKGROUND: Group C Rotavirus (RVC) is an enteric pathogen responsible for acute gastroenteritis in children and adults globally. At present there are no surveillance studies on group C Rotaviruses in India and therefore their prevalence in India remains unknown. The present study aimed to evaluate group C rotavirus infection among <5 years old children hospitalized with acute gastroenteritis in New Delhi.
METHODS: A total of 350 fecal specimens were collected during September 2013 to November 2014 from <5 years old diarrheal patients admitted at KSCH hospital, Delhi. The samples found negative for group A rotavirus (N=180) by Enzyme immunoassay were screened for group C rotavirus by RT-PCR with VP6, VP7 and VP4 gene specific primers. The PCR products were further sequenced (VP6, VP7, VP4) and analyzed to ascertain their origin and G and P genotypes.
RESULTS: Six out of 180 (group A rotavirus negative) samples were found positive for group C rotavirus by VP6 gene specific RT-PCR, of which 3 were also found

positive for VP7 and VP4 genes. Phylogenetic analysis of VP7 and VP4 genes of these showed them to be G4 and P[2] genotypes. Overall, the nucleotide sequence data (VP6, VP7 and VP4) revealed a close relationship with the human group C rotavirus with no evidence of animal ancestry. Interestingly, the nucleotide sequence analysis of various genes also indicated differences in their origin. While the identity matrix of VP4 gene (n = 3) showed high amino acid sequence identity (97.60 to 98.20%) with Korean strain, the VP6 gene (n = 6) showed maximum identity with Nigerian strain (96.40 to 97.60%) and VP7 gene (n = 3) with Bangladeshi and USA strains. This is true for all analyzed samples.
CONCLUSION: Our study demonstrated the group C rotavirus as the cause of severe diarrhea in young children in Delhi and provides insights on the origin of group C rotavirus genes among the local strains indicating their source of transmission. Our study also highlights the need for a simple and reliable diagnostic test that can be utilized to determine the disease burden due to group C rotavirus in India.

DOI: 10.1186/s12985-017-0767-8
PMCID: PMC5450416
PMID: 28558823

127: Tiwari A, Bakhshi S. Editorial: Indian Guidelines for Treatment of Pediatric Malignancies. Indian J Pediatr. 2017 May;84(5):369-370. doi: 10.1007/s12098-017-2334-0. Epub 2017 Mar 16. PubMed PMID: 28299539.

128: Trikha V, Singh V, Choudhury B, Das S. Retrospective analysis of proximal humeral fracture-dislocations managed with locked plates. J Shoulder Elbow Surg. 2017 Oct;26(10):e293-e299. doi: 10.1016/j.jse.2017.03.035. Epub 2017 May 15. PubMed PMID: 28522075.

BACKGROUND: Fracture-dislocation is the extreme variant of injury to the proximal humerus that occurs more commonly in young adults as a result of high-velocity trauma. We evaluated the functional and radiologic outcome of fixation of proximal humeral fracture-dislocations with locked plates.
METHODS: This was a retrospective review of 33 proximal humeral fracture-dislocations in 29 patients with a mean age of 35 years (range, 19-60 years) treated by open reduction and internal fixation with locked plates between January 2009 and December 2013. The fracture-dislocation in 85% was the result of high-energy trauma resulting in 3- or 4-part fracture-dislocation. The fracture-dislocation was anterior in 27 and posterior in 6.
RESULTS: The average delay from injury to surgery was 7 days (range, 1-35 days), with a mean follow-up of 40 months (range, 24-66 months). All of the fractures united at an average of 15 weeks after surgery. At the final follow-up, the mean forward flexion was 129° (range, 100°-160°), and mean abduction was 128° (range, 100°-150°). The mean Constant score at the final follow-up was 78 points (range, 68-88 points). One case of complete osteonecrosis of the humeral head and 1 case of partial osteonecrosis of the humeral head were noted. Two cases of screw perforation of the humeral head were seen, with subsequent restricted range of motion improving after removal of the offending screws.
CONCLUSIONS: Most young patients with 3- and 4-part proximal humeral fracture-dislocations can achieve good functional outcome after fixation with locked plates.

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PMID: 28522075

129: Trikha V, Das S, Gaba S, Agrawal P. Analysis of functional outcome of Hoffa fractures: A retrospective review of 32 patients. J Orthop Surg (Hong Kong). 2017 May-Aug;25(2):2309499017718928. doi: 10.1177/2309499017718928. PubMed PMID: 28673200.

PURPOSE: Hoffa fractures are uncommon intra-articular fractures of femoral condyle in coronal plane. The purpose of our study is to assess radiologic and functional outcome in operatively treated Hoffa fractures.
METHODS: We retrospectively reviewed 32 patients of isolated Hoffa fracture from January 2010 to March 2015. All were treated with open reduction and internal fixation using lateral approach for lateral Hoffa and medial approach for medial Hoffa fracture. Cancellous screws in lag mode and/or antiglide plate were employed for fixation in accordance with fracture anatomy. All patients were subjected to aggressive physical therapy postoperatively. Knee Society Score (KSS), International Knee Documentation Committee Score (IKDC), and Knee range of motion (ROM) were documented at final follow-up for functional evaluation.
RESULTS: All fractures united by mean time of 11.56 ± 1.5 weeks. No evidence of subsequent displacement or fixation failure, arthritis, Avascular necrosis (AVN) of femoral condyle was elicited in any of the patients. Documented mean KSS and mean IKDC Score at final follow-up were 83.19 ± 8.43 and 81.62± 6.95, respectively. ROM at final follow-up was ranging from 0° to mean 116.41° ± 13.98°. Complications included stiffness of the involved knee in four patients, including one patient who developed infection and had to undergo implant removal after fracture union.
CONCLUSION: Operative treatment of Hoffa fractures yields fairly good functional outcome. One must endeavor to achieve adequate intraoperative exposure and stable congruous articular reconstruction. Early aggressive physical therapy is a harbinger of optimal outcome.

DOI: 10.1177/2309499017718928
PMID: 28673200

130: Tripathy K, Das A, Subhadarshani S. Sturge-Weber Syndrome with Choroidal Hemangioma. Indian Dermatol Online J. 2017 May-Jun;8(3):225-226. doi: 10.4103/idoj.IDOJ_148_16. PubMed PMID: 28584769; PubMed Central PMCID: PMC5447352.

131: Vanathi M, Goel S, Ganger A, Agarwal T, Dada T, Khokhar S. Corneal tomography and biomechanics in primary pterygium. Int Ophthalmol. 2017 May 13. doi: 10.1007/s10792-017-0514-6. [Epub ahead of print] PubMed PMID: 28501948.

PURPOSE: To study the Scheimpflug's imaging and corneal biomechanics in primary pterygium.
METHODS: A prospective observational study of 55 patients with unilateral primary nasal pterygium was done. The normal fellow eyes of patients with pterygium were taken as controls. Clinical parameters noted included visual acuity, values of corneal curvature by doing Scheimpflug imaging, wavefront aberrations in terms of higher and lower-order aberrations and corneal hysteresis (CH) as well as corneal resistance factor (CRF) values by using ocular response analyzer.
RESULTS: Of the total 55 patients, mean age was 43.0 + 11.4 years (range: 20-72 years). Mean LogMar uncorrected visual acuity in pterygium eyes and control eyes was 0.21 + 0.20 and 0.12 + 0.15, respectively ($p = 0.016$). On Scheimpflug imaging the mean anterior corneal curvature values (Ka1/Ka2 D) were 41.09 + 3.38/44.33 + 2.29 in pterygium eyes, 43.13 + 1.79/43.98 + 2.17 in control eyes ($p < 0.0005$) and mean posterior corneal curvature (Kp1/Kp2 D) values were 6.14 + 0.39/6.53 + 0.43 in pterygium eyes and 6.13 + 0.28/6.46 + 0.47 in control eyes ($p > 0.05$). Analysis of corneal aberrations showed significantly higher corneal wavefront aberrations in pterygium eyes. Highest correlation of corneal

astigmatism was noted with corneal area encroached by pterygium (ρ = 0.540 for LOA and 0.553 for HOA) and distance from pupillary center (ρ = 0.531 for LOA and 0.564 for HOA). Corneal biomechanical parameters including CH and CRF were found to be lower in the pterygium eyes, though not statistically significant (p value 0.60 and 0.59, respectively).
CONCLUSION: Pterygium leads to deterioration of visual performance not only by causing refractive and topographic changes but also by causing a significant increase in corneal wavefront aberrations.

DOI: 10.1007/s10792-017-0514-6
PMID: 28501948

132: Varughese SA, Bharti SJ, Kumar V. Intrapleural migration of paravertebral catheter in spite of ultrasound guidance. Lung India. 2017 May-Jun;34(3):295-296. doi: 10.4103/0970-2113.205333. PubMed PMID: 28474662; PubMed Central PMCID: PMC5427764.

133: Yadav K, Singh A, Badhwar S, Jaryal AK, Coshic P, Chatterjee K, Deepak KK. Decreased Spontaneous Baroreflex Sensitivity as an Early Marker for Progression of Haemorrhage. High Blood Press Cardiovasc Prev. 2017 May 11. doi: 10.1007/s40292-017-0205-4. [Epub ahead of print] PubMed PMID: 28497338.

INTRODUCTION: Blood donation provides an ideal setup for assessment of cardiovascular responses to mild hypovolemia for understanding the underlying mechanisms.
AIM: To evaluate cardiovascular responses in time and magnitude by estimating the spontaneous baroreflex sensitivity (BRS) during and after donation of 450 ml of blood.
METHODS: Continuous beat-to-beat blood pressure and lead II ECG was recorded before, during and after blood donation in 54 healthy volunteers (age 34.7 ± 5.08 years; weight 77.9 ± 8.20 kg), followed by offline analyses of baroreflex sensitivity.
RESULTS: The systolic, diastolic or mean blood pressures did not change during or after the blood donation. Decrease in pulse pressure and increase in heart rate was observed post donation. The spontaneous BRS decreased during [8.68 (6.038-12.69) ms/mmHg] and after blood donation [9.401 (6.396-11.59) ms/mmHg] as compared to the baseline [12.83 (6.884-18.18) ms/mmHg] with a significant decrease in α-HF on spectral analysis.
CONCLUSION: Mild blood loss (450 ml) results in non-hypotensive haemorrhage with a decrease in spontaneous BRS before the rise of heart rate during blood donation.

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PMID: 28497338

134: Yadav R, Jaryal AK, Mallick HN. Participation of preoptic area TRPV4 ion channel in regulation of body temperature. J Therm Biol. 2017 May;66:81-86. doi: 10.1016/j.jtherbio.2017.04.001. Epub 2017 Apr 6. PubMed PMID: 28477913.

Transient receptor potential vanilloid 4 (TRPV4) ion channel is a non-selective cation channel and its role in cutaneous thermosensation is emerging. It is expressed in many areas of the brain including the preoptic area (POA)/anterior hypothalamus which is the key neural site for thermoregulation. The present study was conducted to find out the role of TRPV4 ion channel in the POA in thermoregulation. Rats preimplanted with guide cannulae with indwelling styli 2.0mm above the POA received TRPV4 agonist/antagonist/isotonic saline injections bilaterally in the POA using an injector cannula in three separate groups of six rats each. Body temperature (Tb) was recorded telemetrically by preimplanted

radio transmitter in the peritoneal cavity. The injection of TRPV4 agonist (GSK1016790A) in the POA decreased Tb while its antagonist (RN1734) increased Tb. Immunohistochemical localization showed presence of TRPV4 ion channel in the POA. The results of the present study suggest that TRPV4 ion channels in the POA may play an important role in thermoregulation.

DOI: 10.1016/j.jtherbio.2017.04.001
PMID: 28477913

135: Yadav VS, Chakraborty S, Tewari S, Tewari N, Ghosh T. Cryotherapy as a conservative treatment modality for gingival enlargement in a patient with Sturge-Weber Syndrome. Intractable Rare Dis Res. 2017 May;6(2):145-1147. doi: 10.5582/irdr.2017.01023. PubMed PMID: 28580218; PubMed Central PMCID: PMC5451749.

This case report describes a case of Sturge-Weber syndrome reported for unilateral gingival enlargement and bleeding from gingiva in maxillary left region. Initial treatment in the form of scaling and root planing was done but recurrence was observed after one year of follow up. Instead of performing conventional surgery, an alternative conservative treatment was planned in the form of cryotherapy with the help of closed nitrous oxide probe. Seeing the satisfactory results obtained, cryotherapy can be suggested as an atraumatic, bloodless and effective chair side procedure for treating vascular gingival enlargement.

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PMCID: PMC5451749
PMID: 28580218

136: Yenamandra VK, Moss C, Sreenivas V, Khan M, Sivasubbu S, Sharma VK, Sethuraman G. Development of a clinical diagnostic matrix for characterizing inherited epidermolysis bullosa. Br J Dermatol. 2017 Jun;176(6):1624-1632. doi: 10.1111/bjd.15221. Epub 2017 May 5. PubMed PMID: 27925151.

BACKGROUND: Accurately diagnosing the subtype of epidermolysis bullosa (EB) is critical for management and genetic counselling. Modern laboratory techniques are largely inaccessible in developing countries, where the diagnosis remains clinical and often inaccurate.
OBJECTIVES: To develop a simple clinical diagnostic tool to aid in the diagnosis and subtyping of EB.
METHODS: We developed a matrix indicating presence or absence of a set of distinctive clinical features (as rows) for the nine most prevalent EB subtypes (as columns). To test an individual patient, presence or absence of these features was compared with the findings expected in each of the nine subtypes to see which corresponded best. If two or more diagnoses scored equally, the diagnosis with the greatest number of specific features was selected. The matrix was tested using findings from 74 genetically characterized patients with EB aged > 6 months by an investigator blinded to molecular diagnosis. For concordance, matrix diagnoses were compared with molecular diagnoses.
RESULTS: Overall, concordance between the matrix and molecular diagnoses for the four major types of EB was 91·9%, with a kappa coefficient of 0·88 [95% confidence interval (CI) 0·81-0·95; P < 0·001]. The matrix achieved a 75·7% agreement in classifying EB into its nine subtypes, with a kappa coefficient of 0·73 (95% CI 0·69-0·77; P < 0·001).
CONCLUSIONS: The matrix appears to be simple, valid and useful in predicting the type and subtype of EB. An electronic version will facilitate further testing.

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