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List of publications of AIIMS, New Delhi
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1: Gathe BM, Gandhe MB, Gandhe SM, Puttevar AN, Saraf C, Singh R. Brainstem Auditory Evoked Potentials (BAEP)- A Pilot Study Conducted on Young Healthy Adults from Central India. J Clin Diagn Res. 2014 Jun;8(6):BC16-8. doi: 10.7860/JCDR/2014/8720.4515. Epub 2014 Jun 20. PubMed PMID: 25120971; PubMed Central PMCID: PMC4129266.

OBJECTIVE: To Evaluate I, II, III, IV, V wave latencies and I-III, III-V, I-V inter-peak latencies and V/I wave amplitude ratio in Normal subjects in Central India.

METHODS: We recorded BAEP from 50 healthy normal subjects from the community of same sex and geographical setup. The absolute, interpeak and wave V/I amplitude ratio were measurement and recording was done using RMS EMG EP MARK II machine manufactured by RMS recorders and Medicare system, Chandigarh.

RESULT: Absolute, interpeak and wave V/I amplitude ratio were measured in normal subjects and compared with other previous studies.

CONCLUSION: This study was conducted as exploratory pilot study only on male healthy controls. Since, the study conducted in different regions, there are some differences in the latencies and interpeak latencies and amplitude ratio but they are within range, so reference range of this study can be used for future studies in this Wardha region of Central India.

PMCID: PMC4129266

PMID: 25120971 [PubMed]

2: Sharma S, Logani A, Shah N. Comparative efficacy of photo-activated disinfection and calcium hydroxide for disinfection of remaining carious dentin in deep cavities: a clinical study. Restor Dent Endod. 2014 Aug;39(3):195-200. doi: 10.5395/rde.2014.39.3.195. Epub 2014 Jun 26. PubMed PMID: 25110643; PubMed Central PMCID: PMC4125583.

OBJECTIVES: To comparatively evaluate the efficacy of photo-activated disinfection (PAD), calcium hydroxide (CH) and their combination on the treatment outcome of indirect pulp treatment (IPT).

MATERIALS AND METHODS: Institutional ethical clearance and informed consent of the patients were taken. The study was also registered with clinical registry of India. Sixty permanent molars exhibiting deep occlusal carious lesion in patients with the age range of 18 - 22 yr were included. Clinical and radiographic evaluation and set inclusion and exclusion criteria's were followed. Gross caries excavation was accomplished. In group I (n = 20) PAD was applied for sixty seconds. In group II (n = 20), CH was applied to the remaining carious dentin, while in group III (n = 20), PAD application was followed by CH placement. The teeth were permanently restored. They were clinically and radiographically followed-up at 45 day, 6 mon and 12 mon. Relative density of the remaining affected dentin was measured by 'Radiovisiography (RVG) densitometric' analysis.

RESULTS: Successful outcome with an increase in radiographic grey values were observed in all three groups. However, on inter-group comparison, this change was not significant ($p > 0.05$).

CONCLUSIONS: PAD and CH both have equal disinfection efficacy in the treatment of deep carious dentin. PAD alone is as effective for treatment of deep carious lesion as calcium hydroxide and hence can be used as an alternative to CH. They can be used independently in IPT, since combining both does not offer any additional therapeutic benefits.

PMCID: PMC4125583
PMID: 25110643 [PubMed]

3: Sarvottam K, Yadav RK. Obesity-related inflammation & cardiovascular disease: Efficacy of a yoga-based lifestyle intervention. *Indian J Med Res.* 2014 Jun;139(6):822-34. PubMed PMID: 25109716.

Obesity is a global health burden and its prevalence is increasing substantially due to changing lifestyle. Chronic adiposity is associated with metabolic imbalance leading to dyslipidaemia, diabetes, hypertension and cardiovascular diseases (CVD). Adipose tissue acts as an endocrine organ releasing several adipocytokines, and is associated with increased levels of tissue and circulating inflammatory biomolecules causing vascular inflammation and atherogenesis. Further, inflammation is also associated independently with obesity as well as CVD. Keeping this in view, it is possible that a reduction in weight may lead to a decrease in inflammation, resulting in CVD risk reduction, and better management of patients with CVD. Lifestyle intervention has been endorsed by several health authorities in prevention and management of chronic diseases. A yoga-based lifestyle intervention appears to be a promising option in reducing the risk for CVD as well as management of patients with CVD as it is simple to follow and cost-effective with high compliance. The efficacy of such lifestyle intervention programmes is multifaceted, and is achieved via reduction in weight, obesity-related inflammation and stress, thereby culminating into risk reduction towards several chronic diseases including CVD. In this review, the association between obesity-related inflammation and CVD, and the role of yoga-based lifestyle intervention in prevention and management of CVD are discussed.

PMID: 25109716 [PubMed - in process]

4: Agarwala S, Mandelia A, Bakhshi S, Srinivas M, Bajpai M, Gupta AK, Gupta DK, Bhatnagar V. Neuroblastoma: Outcome over a 14 year period from a tertiary care referral centre in India. *J Pediatr Surg.* 2014 Aug;49(8):1280-5. doi: 10.1016/j.jpedsurg.2014.03.017. Epub 2014 Jun 30. PubMed PMID: 25092090.

PURPOSE: To evaluate the outcome of children with neuroblastoma (NB) from a tertiary care referral centre in India.

METHOD: All children with NB registered from October 1996 through July 2009 were included in the study. INSS was used for staging. All children included in the study received chemotherapy and radiation therapy appropriate for stage. Tumor resection was done when feasible. The final outcome was overall survival and it was categorized as Complete Response (CR), Partial Response (PR); No Response (NR) and Progressive Disease (PD). Analysis of three-year overall survival was done using Kaplan Meier method and Log Rank test of significance. Multivariate analysis for significance of age, site and stage was performed.

RESULTS: 144 children in the age range of 1-132months (median 36) were enrolled. Only 38 (26.4%) children were below 12months. 112 (77.8%) of the tumors were abdominal and 32 (22.2%) were extra-abdominal. Stage distribution was 1+2 in 6 (4.2%); 3 in 58 (40.3%); 4 in 68 (47.2%); 4s in 12 (8.3%). 83 (57.6%) underwent gross complete resection. At the time of last follow-up, 100 (69.4%) were alive [60 CR (41.7%); 33 PR; 7 PD/NR] and 44 (30.6%) were dead [1CR; 11PR; 32 PD/NR]. The three-year OS was 60.7% [95 CI 50.4-69.5]. The OS was 69.7% for those <12months of age [95 CI 51.8-82.0] and CR was achieved in 57.9%, while for those >12months the OS was 55.3% [95 CI 42.2-66.6] and CR was achieved in 35.8% (p=0.73). All 6 (100%) patients with Stage 1 and Stage 2 disease were alive and disease free. The OS was 71.5% for Stage 3 [95 CI 55.3-82.7] and CR was achieved in 56.9%, while for Stage 4 the OS was 35.7% [95 CI 19.3-52.4] and CR was achieved in 17.6% (p=0.001). The OS was 83.3% for 4s [95 CI 48.2-95.6] and CR was achieved in 75%.

CONCLUSION: All the six children with Stage 1 & 2 achieved CR and were alive, while 57% of Stage 3 could achieve CR and had an OS of 71.5%. The OS (35.7%) and CR (17.6%) for Stage 4 were significantly less ($p=0.001$).

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PMID: 25092090 [PubMed - in process]

5: Suri A, Bansal S, Sharma BS, Mahapatra AK, Kale SS, Chandra PS, Singh M, Kumar R, Sharma MS. Management of hypoglossal schwannomas: single institutional experience of 14 cases. *J Neurol Surg B Skull Base*. 2014 Jun;75(3):159-64. doi: 10.1055/s-0033-1356924. Epub 2014 Mar 12. PubMed PMID: 25072009; PubMed Central PMCID: PMC4078147.

Background Hypoglossal schwannomas are rare intracranial neoplasms. Microsurgical resection with the goal of cure is the aim of management but is associated with a high rate of postoperative morbidity. Objective The objective of the study was to outline the clinical presentation, radiologic characteristics, surgical techniques, postoperative morbidity, and long-term follow-up results for hypoglossal schwannomas. Methods Patients treated for hypoglossal schwannoma at the Department of Neurosurgery of a tertiary-level referral institution from January 2001 until December 2010 were analyzed retrospectively using hospital records. Results There were 14 patients who were treated in the study period. Tongue atrophy and swallowing difficulties were the most common presenting symptoms. Surgery done in 12 patients using a variety of approaches (retromastoid retrosigmoid suboccipital in 9, midline suboccipital in 2, and far lateral in 1). Five patients having small residual tumors received gamma knife (GK) subsequently. Two patients received primary GK stereotactic radiosurgery. Three patients had permanent morbidity in the form of cranial nerve paresis. Immediate postoperative complications like cerebrospinal fluid leak and pneumonia were present in three patients. Conclusion Complete microsurgical resection is often associated with a high rate of morbidity. Subtotal and near-total resection followed by stereotactic radiosurgery or observation now offers an alternative approach.

PMCID: PMC4078147 [Available on 2015/6/1]

PMID: 25072009 [PubMed]

6: Kaul RP, Sagar S, Singhal M, Kumar A, Jaipuria J, Misra M. Burden of maxillofacial trauma at level 1 trauma center. *Craniofacial Trauma Reconstr*. 2014 Jun;7(2):126-30. doi: 10.1055/s-0034-1371539. Epub 2014 Feb 26. PubMed PMID: 25071877; PubMed Central PMCID: PMC4078188.

There is an upward trend in facial injuries following changes in population pattern, increasing industrialization and urbanization, hence maxillofacial trauma is becoming a burden and a leading medical problem in emergency rooms worldwide. This study was performed to evaluate the pattern of maxillofacial fractures, associated injuries, and treatment used at Jai Prakash Narayan Apex Trauma Center (JPNATC), All India Institute of Medical Sciences (AIIMS), New Delhi, India, between January 2007 and June 2010. The study provides basis for establishment of trauma as major etiology of maxillofacial injuries and planning for preventive strategies. A retrospective study of patients seen and treated at JPNATC, AIIMS, New Delhi, between January 2007 and June 2010 was performed. Data extracted from patient records included etiology, age, sex, types and sites of fractures, treatment modality, and concomitant injuries. There were 795 fractures of the maxillofacial skeleton and 86 concomitant injuries from 542 patients. Road traffic accident (RTA) (56.8%) was the most common etiologic factor, followed by falls (22.3%) and fights (18.5%). The age range was from 3 to 75 years (mean,

34.7 years) with a peak incidence in the third decade with a male-to-female ratio of 3.7:1. The most common location of maxillofacial fractures was the mandible 615 (77%) and middle third 180 (23%). With regard to mandibular fractures, the body (29.6%) was the most common site, followed by the angle (24.4%), ramus (19.5%), dentoalveolar (14.6%), symphysis (11.0%), condyle (0.8%) while in the middle third, the nasal bone (36.7%) was the most common, followed by zygomatic bone (27.8), Lefort II (14.4), Lefort I (7.8%), dentoalveolar (10.0%), and Lefort III (3.3%). Majority of the patients were treated by open reduction and internal fixation (70.6). Concomitant injuries were 84 (10.8%) with orthopedic injuries accounting for the majority (63.9%). Head injury was associated in 16.3% of cases. RTA was the major etiologic factor of maxillofacial injuries in our setting and the young adult males were the main victims. Henceforth, establishment of regionalized, efficient, and focused trauma centers in various parts of the country particularly for acute trauma should be emphasized. Also, the laws regarding the precautions such as seat belts, speed limits, and traffic rules must be observed strictly to reduce the incidence of RTA.

PMCID: PMC4078188 [Available on 2015/6/1]

PMID: 25071877 [PubMed]

7: Sharawat SK, Vishnubhatla S, Bakhshi R, Raina V, Kumar L, Sharma A, Bakhshi S. Relative Receptor Tyrosine Kinases and Anti-Apoptotic Transcripts Hold Potential for Predicting Inferior Outcome in Adult Acute Myeloid Leukemia: A Prospective Pilot Study. Clin Lymphoma Myeloma Leuk. 2014 Jun 11. pii: S2152-2650(14)00144-X. doi: 10.1016/j.clml.2014.04.005. [Epub ahead of print] PubMed PMID: 25065779.

INTRODUCTION: Acute myeloid leukemia is characterized by accumulation of immature cells because of imbalance between proliferation and apoptosis. In AML, simultaneous expression of proliferative (FLT-3, c-KIT) and antiapoptotic genes (BCL-2), are unknown.

PATIENTS AND METHODS: We prospectively assessed proliferative and antiapoptotic gene transcripts using Taqman probe chemistry in 48 adult AML patients. A stepwise Cox regression model was applied for independent prognostic factors.

RESULTS: Thirty-two of 48 (75%) patients achieved complete remission. At follow-up ranging from 0.5 to 57.3 months, event-free survival (EFS) was $26.9 \pm 6.3\%$ (range, 15.5%-39.6%) and OS $34.5 \pm 7.46\%$ (range, 20.5%-48.9%). High white blood cell count correlated with an inferior complete remission rate ($P = .021$). Cytogenetics and FLT-3 internal tandem duplication did not predict EFS or OS. The transcripts of FLT-3, c-KIT, and BCL-2 showed a significant linear association with each other in Pearson correlation (FLT-3 vs. c-KIT: $R = 0.8234$; $P < .001$; c-KIT vs. BCL-2: $R = 0.3377$; $P = .01$; FLT-3 vs. BCL-2: $R = 0.3815$; $P = .007$). In a validation cohort (Microarray Data Set GSE1159) of adult AML patients, the global gene expression profile depicted a similar interrelationship. Patients with a greater platelet count were associated with increased transcript levels of BCL-2 ($P = .034$). In univariate analysis, a high transcript level of FLT-3 and high transcript ratio of FLT-3/BCL-2 and FLT-3 and c-KIT/BCL-2 significantly predicted OS ($P = .043$, $.028$, and $.028$, respectively). In a stepwise Cox regression model, high FLT-3 and c-KIT/BCL-2 ratio predicted OS (HR, 2.29).

CONCLUSION: To our knowledge, this is the first study that evaluated proliferative and antiapoptotic transcripts simultaneously, and results have shown that it is the relative levels of these transcripts that determine outcome in AML patients rather than their expression in isolation.

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PMID: 25065779 [PubMed - as supplied by publisher]

8: Sankar J, Singh A, Sankar MJ, Joghee S, Dewangan S, Dubey N. Pediatric Index of Mortality and PIM2 Scores Have Good Calibration in a Large Cohort of Children from a Developing Country. *Biomed Res Int.* 2014;2014:907871. doi: 10.1155/2014/907871. Epub 2014 Jun 15. PubMed PMID: 25025075; PubMed Central PMCID: PMC4082889.

Objective. Our objective was to validate the Pediatric Index of Mortality (PIM) and PIM2 scores in a large cohort of children from a developing country. **Design.** Prospective observational study. **Setting.** Pediatric intensive care unit of a tertiary care teaching hospital. **Patients.** All children aged <18 years admitted between June 2011 and July 2013. **Measurements and Main Results.** We evaluated the discriminative ability and calibration as measured by the area under the receiver operating characteristic (ROC) curves, the Hosmer-Lemeshow goodness-of-fit (GOF), and standardized mortality ratio (SMR), respectively. Of the 819 children enrolled, 232 (28%) died. The median (IQR) age of the study subjects was 4 years (0.8, 10). The major reasons for ICU admission as well as mortality were sepsis/severe sepsis. The area under ROC curves for PIM and PIM2 was 0.72 (95% CI: 0.67-0.75) and 0.74 (95% CI: 0.70-0.78), respectively. The goodness-of-fit test showed a good calibration across deciles of risk for the two scores with P values being >0.05. The SMR (95% CI) was 0.99 (0.85-1.15) and 1 (0.85-1.16) for PIM and PIM2, respectively. The calibration across different age and diagnostic subgroups was also good. **Conclusion.** PIM and PIM2 scores had good calibration in our setup.

PMCID: PMC4082889

PMID: 25025075 [PubMed - in process]

9: Kazmi HR, Chandra A, Baghel K, Singh A, Nigam J, Parmar D, Mahdi AA, Goel SK, Kumar S. Differential expression of cholecystokinin a receptor in gallbladder cancer in the young and elderly suggests two subsets of the same disease? *Biomed Res Int.* 2014;2014:625695. doi: 10.1155/2014/625695. Epub 2014 Jun 15. PubMed PMID: 25025063; PubMed Central PMCID: PMC4082861.

Background. Cholecystokinin type A receptor (CCKAR) is known to be overexpressed in variety of human malignancies but information regarding its expression in gallbladder cancer (GBC) is limited. Attempts were now made to investigate expression pattern of CCKAR mRNA and protein in controls and GBC patients and correlate it with various clinicopathological parameters following surgical resection. **Materials and Methods.** Gallbladder tissue samples from 64 subjects (GBC: 39; control: 25) were studied. Expression of CCKAR mRNA was evaluated by reverse transcriptase-polymerase chain reaction and confirmed using real-time polymerase chain reaction. Protein expression was studied by enzyme-linked immunosorbent assay. **Results.** Significantly higher expression of CCKAR mRNA ($P < 0.0001$) and protein ($P < 0.0001$) was observed in GBC tissues. Overexpression was also observed for stage III and in moderately and poorly differentiated tumors. When the clinicopathological parameters were compared, we found age dependent decrease in CCKAR expression. Relatively higher expression of CCKAR was observed in younger patients (age < 45 years) having more aggressive disease when compared with elderly ones (age \geq 45 years). **Conclusions.** Age related differential expression of CCKAR in GBC may suggest two possible variants of the disease in this endemic belt.

PMCID: PMC4082861

PMID: 25025063 [PubMed - in process]

10: Choudhary M, Kumar V, Gupta P, Singh S. Investigation of Antiarthritic Potential of *Plumeria alba* L. Leaves in Acute and Chronic Models of Arthritis. *Biomed Res Int.* 2014;2014:474616. doi: 10.1155/2014/474616. Epub 2014 Jun 15. PubMed PMID: 25025056; PubMed Central PMCID: PMC4082847.

Aim. The present investigation was designed to evaluate antiarthritic potential of fractions of hydroalcoholic extract from leaves of *P. alba*. **Materials and Methods.** *Plumeria alba* L. leaves were extracted with hydroalcohol (30:70) to obtain hydroalcoholic extract of *P. alba*. This extract was further fractionated with solvents ethyl acetate and n-butanol to obtain EAPA and BPA, respectively. These fractions were tested against formaldehyde and Freund's complete adjuvant (FCA) induced arthritis. Arthritis assessment, paw volume, body weight, motor incoordination, and nociceptive threshold were measured. On day 21, the animals were sacrificed and histopathology was done. **Results.** The 100 and 200mg/kg doses of EAPA and BPA caused a significant ($P \leq 0.05-0.01$) reduction in paw swelling in both models. Erythrocyte sedimentation rate (ESR) and spleen weight decreased significantly ($P < 0.01$) in arthritic rats treated with extracts. There was significant ($P < 0.05$) improvement in thymus weight in EAPA treated rats whereas significant ($P < 0.01$) improvement was also seen in haemoglobin level (Hb) in diclofenac treated group. Motor incoordination and nociceptive threshold were also significantly ($P \leq 0.05-0.01$) improved. **Conclusion.** The present study suggests that *Plumeria alba* L. has protective activity against arthritis and supports the traditional use of *P. alba* for rheumatism and other inflammatory diseases.

PMCID: PMC4082847

PMID: 25025056 [PubMed - in process]

11: Gupta B, Suri S, Kohli S, Ahmad S, Gupta S. Arthrogryposis multiplex congenita: Airway concerns in an emergency situation. *Acta Anaesthesiol Taiwan.* 2014 Jun;52(2):88-90. doi: 10.1016/j.aat.2014.04.003. Epub 2014 Jun 7. PubMed PMID: 25016514.

Difficult airway is always of special concern to anesthesiologists, but in a trauma setting where having a secured airway is most important, the incidence of difficult airway increases manifold. We report a "cannot ventilate cannot intubate" situation in a trauma patient who was later diagnosed to have arthrogryposis multiplex congenita, a syndrome known to affect the airway, and in whom all measures of securing a nonsurgical airway failed.

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PMID: 25016514 [PubMed - in process]

12: Verma S, Cardenas-Garcia J, Mohapatra PR, Talwar A. Depression in pulmonary arterial hypertension and interstitial lung diseases. *N Am J Med Sci.* 2014 Jun;6(6):240-9. doi: 10.4103/1947-2714.134368. Review. PubMed PMID: 25006558; PubMed Central PMCID: PMC4083524.

Advanced lung diseases such as pulmonary arterial hypertension (PAH) and interstitial lung diseases (ILD) are chronic diseases that cause significantly high morbidity and mortality. As a result, patients can undergo some psychological changes leading to a poor quality of life and depression. Diagnosis of depression is often obscured because fatigue and apathy, two common symptoms of depression, frequently overlap with PAH and ILD. Healthcare providers are sometimes reluctant to ask or mistakenly believe that these symptoms are part of

the ongoing disease process, rather than a serious condition like depression. Screening tools are available for physicians to be well positioned in recognizing clinical depression in PAH and ILD. A MedLine/PubMED search was performed identifying all relevant articles with "PAH", "ILD", "screening tools" and/or "Depression" in the title. The aim of this review is to provide a brief description of some of the instruments used to screen patients and classes of psychotropic medications accessible to physicians. While pulmonary rehabilitation programs can have a positive impact on patients, physicians should also utilize cognitive behavioral therapy (CBT) as part of regular care.

PMCID: PMC4083524

PMID: 25006558 [PubMed]

13: Lopes AA, Barst RJ, Haworth SG, Rabinovitch M, Al Dabbagh M, Del Cerro MJ, Ivy D, Kashour T, Kumar K, Harikrishnan S, D'Alto M, Thomaz AM, Zorzaneli L, Aiello VD, Mocumbi AO, Santana MV, Galal AN, Banjar H, Tamimi O, Heath A, Flores PC, Diaz G, Sandoval J, Kothari S, Moledina S, Gonçalves RC, Barreto AC, Binotto MA, Maia M, Al Habshan F, Adatia I. Repair of congenital heart disease with associated pulmonary hypertension in children: what are the minimal investigative procedures? Consensus statement from the Congenital Heart Disease and Pediatric Task Forces, Pulmonary Vascular Research Institute (PVRI). *Pulm Circ.* 2014 Jun;4(2):330-41. doi: 10.1086/675995. PubMed PMID: 25006452; PubMed Central PMCID: PMC4070778.

Standardization of the diagnostic routine for children with congenital heart disease associated with pulmonary arterial hypertension (PAH-CHD) is crucial, in particular since inappropriate assignment to repair of the cardiac lesions (e.g., surgical repair in patients with elevated pulmonary vascular resistance) may be detrimental and associated with poor outcomes. Thus, members of the Congenital Heart Disease and Pediatric Task Forces of the Pulmonary Vascular Research Institute decided to conduct a survey aimed at collecting expert opinion from different institutions in several countries, covering many aspects of the management of PAH-CHD, from clinical recognition to noninvasive and invasive diagnostic procedures and immediate postoperative support. In privileged communities, the vast majority of children with congenital cardiac shunts are now treated early in life, on the basis of noninvasive diagnostic evaluation, and have an uneventful postoperative course, with no residual PAH. However, a small percentage of patients (older at presentation, with extracardiac syndromes or absence of clinical features of increased pulmonary blood flow, thus suggesting elevated pulmonary vascular resistance) remain at a higher risk of complications and unfavorable outcomes. These patients need a more sophisticated diagnostic approach, including invasive procedures. The authors emphasize that decision making regarding operability is based not only on cardiac catheterization data but also on the complete diagnostic picture, which includes the clinical history, physical examination, and all aspects of noninvasive evaluation.

PMCID: PMC4070778

PMID: 25006452 [PubMed]

14: Ghose S, Shrey D, Venkatesh P, Parmar T, Sharma S. A simple modification of the Farnsworth-Munsell 100-hue test for much faster assessment of color vision. *Indian J Ophthalmol.* 2014 Jun;62(6):721-3. doi: 10.4103/0301-4738.129778. PubMed PMID: 25005203; PubMed Central PMCID: PMC4131328.

PURPOSE: The Farnsworth-Munsell (FM) 100-hue test is well known but is also time consuming, especially its analytical component. To reduce this needless time-waste during precious working hours, a simple modification was devised. DESIGN: Prospective, comparative, observational study.

MATERIALS AND METHODS: A transparent clear plastic carrier box replaced the opaque one, allowing ready digital photodocumentation of top and bottom without even opening the box, or handling/inverting the caps -200 reportedly normals and 50 known color vision defectives could be easily tested on this modified-FM and results stored, allowing rapid turnover. The captured scores with patient ID were analyzed, at leisure, outside hospital time, saving 45-60 minutes/patient. After recording, the box was promptly handed over to the next subject for rearrangement. Times taken for test/patient were recorded.

RESULTS: Running time was reduced from 60-75 min to ~15 min/patient with no waste of invaluable lab hours. Turnover time is limited to capturing two photographs (~60 sec). The box is relatively cheap and easy to maintain.

CONCLUSIONS: Our simplified FM 100-hue test allowed rapid assessment of color visions with easy data storage of both top and bottom.

PMCID: PMC4131328

PMID: 25005203 [PubMed - in process]

15: Nongpiur ME, Singh A, Saxena R, Sharma A, Sharma P. To evaluate stereoacuity in patients with acquired esotropia and to determine factors associated with favourable outcomes. *Indian J Ophthalmol.* 2014 Jun;62(6):695-8. doi: 10.4103/0301-4738.136218. PubMed PMID: 25005198; PubMed Central PMCID: PMC4131321.

AIM: To evaluate stereoacuity in patients with acquired esotropia and determine the factors associated with favorable outcomes.

MATERIALS AND METHODS: A total of 68 subjects aged 6 years and above were included in the study. Thorough clinical evaluation including binocular status examination using the Bagolini-striated glass test, The Netherland Organization (TNO), and Randot stereo test were done. The subjects were divided into two groups 1 and 2, based on the amount of deviation. Statistical analysis of the result was performed.

RESULT: The duration of misalignment in the group with deviation less than or equal to 8 prism diopters (PD) was 1.49 ± 0.86 years, whereas in the group with deviation more than or equal to 10 PD was 4.64 ± 2.99 years ($P = 0.000$). Among the subjects in group 1, 89.5% achieved fusion and 52.6% had stereoacuity on both TNO and Randot, whereas in group 2 40% achieved fusion and 3.3% stereopsis on both TNO and Randot (one case with only coarse stereopsis). A subanalysis within group 1 revealed a statistically significant difference for the duration of misalignment ($P = 0.02$), but a marginal difference for the amount of deviation ($P = 0.3$).

CONCLUSION: A horizontal deviation up to 8 PD was compatible with stereopsis. Also, the duration of constant misalignment affects the attainment of stereopsis despite successful realignment.

PMCID: PMC4131321

PMID: 25005198 [PubMed - in process]

16: Bhatia V, Goel MM, Makker A, Tewari S, Yadu A, Shilpi P, Kumar S, Agarwal SP, Goel SK. Promoter region hypermethylation and mRNA expression of MGMT and p16 genes in tissue and blood samples of human premalignant oral lesions and oral squamous cell carcinoma. *Biomed Res Int.* 2014;2014:248419. doi: 10.1155/2014/248419. Epub 2014 Jun 2. PubMed PMID: 24991542; PubMed Central PMCID: PMC4058681.

Promoter methylation and relative gene expression of O(6)-methylguanine-DNA-methyltransferase (MGMT) and p16 genes were examined in tissue and blood samples of patients with premalignant oral lesions (PMOLs) and oral squamous cell carcinoma (OSCC). Methylation-specific PCR and reverse transcriptase PCR were performed in 146 tissue and blood samples from controls and patients with PMOLs and OSCC. In PMOL group, significant promoter methylation of MGMT and p16 genes was observed in 59% ($P = 0.0010$) and 57% ($P = 0.0016$) of tissue samples, respectively, and 39% ($P = 0.0135$) and 33% ($P = 0.0074$) of blood samples, respectively. Promoter methylation of both genes was more frequent in patients with OSCC, that is, 76% ($P = 0.0001$) and 82% ($P = 0.0001$) in tissue and 57% ($P = 0.0002$) and 70% ($P = 0.0001$) in blood, respectively. Significant downregulation of MGMT and p16 mRNA expression was observed in both tissue and blood samples from patients with PMOLs and OSCC. Hypermethylation-induced transcriptional silencing of MGMT and p16 genes in both precancer and cancer suggests important role of these changes in progression of premalignant state to malignancy. Results support use of blood as potential surrogate to tissue samples for screening or diagnosing PMOLs and early OSCC.

PMCID: PMC4058681

PMID: 24991542 [PubMed - in process]

17: Kapoor N, Kumar D, Thakur N. Core attributes of stewardship; foundation of sound health system. *Int J Health Policy Manag.* 2014 May 23;3(1):5-6. doi: 10.15171/ijhpm.2014.52. eCollection 2014 Jun. PubMed PMID: 24987714; PubMed Central PMCID: PMC4075105.

Stewardship is not a new concept for public policy, but has not been used to its optimum by the health policy-makers. Although it is being practiced in most successful models of health system, but the onus to this function is still due till date. Lately, few experts in World Health Organization (WHO) have realized its importance and have been raising the issue at different platforms to pursue the most important function of the health system i.e. stewardship. The core attributes of stewardship need to be understood in totality for better understanding of the concept. These core attributes, required for hassle free functioning of a health system, include responsible manager, political will, normative dimension, balanced interventionist and proponents of good governance.

PMCID: PMC4075105

PMID: 24987714 [PubMed]

18: Singh S, Rani N, Kaushal P, Kumar H, Sharrif A, Roy TS. Anomalous cutaneous branch of median nerve in arm: a report of anatomical variation with clinical implications. *Anat Cell Biol.* 2014 Jun;47(2):138-40. doi: 10.5115/acb.2014.47.2.138. Epub 2014 Jun 20. PubMed PMID: 24987552; PubMed Central PMCID: PMC4076422.

The objective of the study was to observe and document the variation on the subject of branches of the median nerve. This report will assist clinicians and surgeons by considering anatomical variation associated with the median nerve in interpreting atypical clinical presentations. The arm and forearm region of a 55 year embalmed male cadaver during educational gross anatomy dissection. We found that an anomalous cutaneous branch arising from the median nerve in the right arm which was passing deep to the tendon of the biceps brachii. Later it enters the cubital fossa and then it is accompanied by the superficial vein of the forearm. The other limb of the cadaver did not show any such variation. No other neural, arterial or muscular variation was observed in either of the limbs. A rare anatomical variation in which the anomalous cutaneous branch arising from the median nerve in the right arm which is later accompanied by a superficial vein in

the forearm. Such knowledge is advantageous in nerve grafting and neurophysiological evaluation for diagnosing peripheral neuropathies.

PMCID: PMC4076422

PMID: 24987552 [PubMed]

19: Panda PS, Dube SK, Sarkar S, Singh DK. Metabolic alkalosis: A less appreciated side-effect of imipenem cilastatin use-author's reply. *Indian J Crit Care Med.* 2014 Jun;18(6):406. doi: 10.4103/0972-5229.133945. PubMed PMID: 24987244; PubMed Central PMCID: PMC4071689.

PMCID: PMC4071689

PMID: 24987244 [PubMed]

20: Saigal S, Sharma JP, Joshi R, Singh DK. Thrombo-prophylaxis in acutely ill medical and critically ill patients. *Indian J Crit Care Med.* 2014 Jun;18(6):382-91. doi: 10.4103/0972-5229.133902. Review. PubMed PMID: 24987238; PubMed Central PMCID: PMC4071683.

Thrombo-prophylaxis has been shown to reduce the incidence of pulmonary embolism (PE) and mortality in surgical patients. The purpose of this review is to find out the evidence-based clinical practice criteria of deep vein thrombosis (DVT) prophylaxis in acutely ill medical and critically ill patients. English-language randomized controlled trials, systematic reviews, and meta-analysis were included if they provided clinical outcomes and evaluated therapy with low-dose heparin or related agents compared with placebo, no treatment, or other active prophylaxis in the critically ill and medically ill population. For the same, we searched MEDLINE, PUBMED, Cochrane Library, and Google Scholar. In acutely ill medical patients on the basis of meta-analysis by Lederle et al. (40 trials) and LIFENOX study, heparin prophylaxis had no significant effect on mortality. The prophylaxis may have reduced PE in acutely ill medical patients, but led to more bleeding events, thus resulting in no net benefit. In critically ill patients, results of meta-analysis by Alhazzani et al. and PROTECT Trial indicate that any heparin prophylaxis compared with placebo reduces the rate of DVT and PE, but not symptomatic DVT. Major bleeding risk and mortality rates were similar. On the basis of MAGELLAN trial and EINSTEIN program, rivaroxaban offers a single-drug approach to the short-term and continued treatment of venous thrombosis. Aspirin has been used as antiplatelet agent, but when the data from two trials the ASPIRE and WARFASA study were pooled, there was a 32% reduction in the rate of recurrence of venous thrombo-embolism and a 34% reduction in the rate of major vascular events.

PMCID: PMC4071683

PMID: 24987238 [PubMed]

21: Akhter MS, Biswas A, Rashid H, Devi L, Behari M, Saxena R. Screening of the NOS3 gene identifies the variants 894G/T, 1998C/G and 2479G/A to be associated with acute onset ischemic stroke in young Asian Indians. *J Neurol Sci.* 2014 Jun 20. pii: S0022-510X(14)00395-5. doi: 10.1016/j.jns.2014.06.025. [Epub ahead of print] PubMed PMID: 24986538.

INTRODUCTION: Nitric oxide levels and NOS3 gene variants play a pivotal role in the development of vascular diseases/stroke. We attempted to determine the role of NOS3 gene variants and plasma NO levels towards the development of ischemic stroke in young Asian-Indians.

METHODS: One hundred ischemic stroke patients and 200 age and sex matched control study subjects were screened for NOS3 gene variants using SSCP [single stranded confirmation polymorphism] and PCR based techniques. Plasma NO metabolites [NOx] were evaluated for the investigated population.

RESULTS: Significantly higher NOx levels were observed in controls [controls 56.63±25.92µmol/L, patients 34.73±19.88µmol/L, p<0.001]. The SNPs [single nucleotide polymorphisms] 894G/T, 1998C/G and 2479G/A were found associated with the disease phenotype with the most significant finding observed for 894G/T [$\chi^2=36.68$, p<0.001]. The SNPs 894G/T and 2479G/A were significantly associated with NOx levels [p=0.001]. The haplotypes TCA and TGA were overrepresented in the patient population [p<0.0001].

CONCLUSION: Two NOS3 SNP [894G/T and 2479G/A] variants and NOx levels are associated with ischemic stroke in young Asian Indians. These NOS3 SNPs might represent genetic risk factors for ischemic stroke in young Asian Indians. However these observations need to be confirmed by larger replicate/cross-sectional studies.

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PMID: 24986538 [PubMed - as supplied by publisher]

22: Raj D, Sharma GK, Lodha R, Kabra SK. Correlation between impulse oscillometry and spirometry parameters in Indian patients with cystic fibrosis. *Chron Respir Dis.* 2014 Jun 30;11(3):139-149. [Epub ahead of print] PubMed PMID: 24980126.

Impulse oscillometry (IOS) is an emerging tool to assess lung function in chronic respiratory diseases, more often in preschool children and patients who are unable to perform spirometry. We conducted a prospective cross-sectional study on patients with cystic fibrosis (CF). Primary objective was to evaluate correlation between IOS and spirometry parameters. Secondary objective was to evaluate the ability of IOS parameters to discriminate patients with airflow limitation at various forced expiratory volume in 1 second (FEV1) cutoffs. Patients with CF above 6 years of age, who were following up on a routine visit, were enrolled in the study. Patients underwent IOS and spirometry as per guidelines. A total of 39 patients (34 children and 5 adults) were enrolled in the study. There was a significant moderate negative correlation between spirometry parameters (FEV1, forced vital capacity, and peak expiratory flow rate) and IOS parameters, that is, impedance at 5 Hz (Z5), resistance at 5 Hz (R5), and reactance area, both between raw values and percent predicted values. Of the various IOS parameters, Z5 percent predicted had the maximum area under the curve (AUC) of 0.8152 and 0.8448 for identifying children with FEV1 <60% and <80%, respectively. R5 percent predicted had an AUC of 0.8185 for identifying children with FEV1 <40%. IOS can be used as an alternative pulmonary function test in patients with CF more so in patients who are unable to perform spirometry.

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PMID: 24980126 [PubMed - as supplied by publisher]

23: Yadav J, Madaan P, Jain V. Brown Tumor due to Vitamin D Deficiency in a Child with Cerebral Palsy. *Indian J Pediatr.* 2014 Jun 29. [Epub ahead of print] PubMed PMID: 24972550.

PMID: 24972550 [PubMed - as supplied by publisher]

24: Aggarwal D, Khurana AK. Exacerbations in non-COPD patients: truth or myth. *Thorax*. 2014 Jun 26. pii: thoraxjnl-2014-205763. doi: 10.1136/thoraxjnl-2014-205763. [Epub ahead of print] PubMed PMID: 24969644.

PMID: 24969644 [PubMed - as supplied by publisher]

25: Baidya DK, Pawar DK, Maitra S, Bajpai M, Panda SS. Novel Maneuver for Endobronchial Fogarty Embolectomy Catheter Placement for Lung Isolation in Infants: An Experience of Four Cases. *Eur J Pediatr Surg*. 2014 Jun 26. [Epub ahead of print] PubMed PMID: 24967568.

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

Georg Thieme Verlag KG Stuttgart · New York.

PMID: 24967568 [PubMed - as supplied by publisher]

26: Rohner F, Zimmermann M, Jooste P, Pandav C, Caldwell K, Raghavan R, Raiten DJ. Biomarkers of nutrition for development-iodine review. *J Nutr*. 2014 Aug;144(8):1322S-42S. doi: 10.3945/jn.113.181974. Epub 2014 Jun 25. PubMed PMID: 24966410.

The objective of the Biomarkers of Nutrition for Development (BOND) project is to provide state-of-the-art information and service with regard to selection, use, and interpretation of biomarkers of nutrient exposure, status, function, and effect. Specifically, the BOND project seeks to develop consensus on accurate assessment methodologies that are applicable to researchers (laboratory/clinical/surveillance), clinicians, programmers, and policy makers (data consumers). The BOND project is also intended to develop targeted research agendas to support the discovery and development of biomarkers through improved understanding of nutrient biology within relevant biologic systems. In phase I of the BOND project, 6 nutrients (iodine, vitamin A, iron, zinc, folate, and vitamin B-12) were selected for their high public health importance because they typify the challenges faced by users in the selection, use, and interpretation of biomarkers. For each nutrient, an expert panel was constituted and charged with the development of a comprehensive review covering the respective nutrient's biology, existing biomarkers, and specific issues of use with particular reference to the needs of the individual user groups. In addition to the publication of these reviews, materials from each will be extracted to support the BOND interactive Web site (http://www.nichd.nih.gov/global_nutrition/programs/bond/pages/index.aspx). This review represents the first in the series of reviews and covers all relevant aspects of iodine biology and biomarkers. The article is organized to provide the reader with a full appreciation of iodine's background history as a public health issue, its biology, and an overview of available biomarkers and specific considerations for the use and interpretation of iodine biomarkers across a range of clinical and population-based uses. The review also includes a detailed research agenda to address priority gaps in our understanding of iodine biology and assessment.

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PMID: 24966410 [PubMed - in process]

27: Kumar A, Tripathi M, Srivastava MV, Vivekanandhan S, Prasad K. Relationship between polymorphisms in beta -2 adrenergic receptor gene and ischemic stroke in North Indian Population: a hospital based case control study. BMC Res Notes. 2014 Jun 25;7:396. doi: 10.1186/1756-0500-7-396. PubMed PMID: 24966013; PubMed Central PMCID: PMC4091742.

BACKGROUND: Stroke is a multi-factorial disease and influenced by both genetic and environmental factors. The purpose of the present case control study was to check the relationship between beta-2 adrenergic receptor (ADRB2) polymorphism and ischemic stroke in North Indian Population.

METHODS: In a hospital based case control study, patients with ischemic stroke and control subjects from outpatient department and neurology ward of All India Institute of Medical Sciences New Delhi. Genotyping was performed by using Polymerase chain reaction-Restriction fragment length polymorphism. Frequency distributions of genotypes and alleles were compared between cases and controls using multivariate logistic regression.

RESULTS: In this study, 224 patients and 224 age-and sex-matched control subjects were recruited. Mean age of cases and controls were 53.9 ± 13.4 and 53.6 ± 12.9 years respectively. Multivariate logistic regression analysis showed an independent association between Gln27Glu polymorphism and large vessel stroke (LVD) under a recessive model of inheritance (OR 3.9; 95% CI 1.3 to 11). An age-stratified analysis, suggested independent association between Gln27Glu polymorphism and ischemic stroke, large vessel disease and small vessel disease stroke who had onset of disease at an older age.

CONCLUSIONS: The findings of the present study suggest that Gln27Glu polymorphism of the ADRB2 gene may confer higher risk of large vessel disease stroke in a North Indian population. Prospective studies with larger sample size are required for independent validation.

PMCID: PMC4091742

PMID: 24966013 [PubMed - in process]

28: Salve H, Kumar S, Sa R, Rai SK, Kant S, Pandav CS. Feasibility of sustainable provision of intradermal post exposure prophylaxis against rabies at primary care level--evidence from rural Haryana. BMC Health Serv Res. 2014 Jun 25;14:278. doi: 10.1186/1472-6963-14-278. PubMed PMID: 24965875; PubMed Central PMCID: PMC4076435.

BACKGROUND: Rabies is the most severe and neglected public health problem in India. Management of animal bite with post exposure prophylaxis is the only existent strategy to prevent rabies related deaths. Cost-effective and sustainable programme for provision of post exposure prophylaxis (PEP) is needed in India.

METHODS: In this study, we have documented the experience of implementation of intra-dermal anti rabies vaccination in Animal Bite Management (ABM) clinic at Primary Health Centre (PHC). This study facility belonged to Comprehensive Rural Health Services Project, Ballabgarh in Faridabad district of Haryana. Hospital service record of ABM clinic was analyzed and various feasibility issues such as costing of services, vaccine wastage and other operational issues in providing PEP services at PHC level were documented.

RESULTS: A total of 619 patients were treated in the ABM clinic. Service utilization of ABM clinic was increased by 38% in the second year of implementation. Mean age of the patients was 23.9 years (SD: 18.8) and majority (70.4%) were males. Majority (86%) of the patients received the first dose of anti-rabies vaccine within the recommended 48 hours. A total 446 vaccine vials (1 ml) were consumed of which 20.8% was contributed in vaccine wastage. User-fee (350 Indian Rupees) collected from the patients. User-fee was re-used to purchase vaccines, intradermal (ID) syringes and other consumables required to ensure regular availability of ARV services at the PHC.

CONCLUSIONS: This study demonstrated the cost-effective and sustainable model of provision of PEP against rabies at primary care level. ID PEP provision at primary care level not only address the unmet need of animal bite management in the community also reduces the out of pocket expenditure of the patients.

PMCID: PMC4076435

PMID: 24965875 [PubMed - in process]

29: Alam R, Tripathi M, Mansoori N, Parveen S, Luthra K, Lakshmy R, Sharma S, Arulselvi S, Mukhopadhyay AK. Synergistic Epistasis of Paraoxonase 1 (rs662 and rs85460) and Apolipoprotein E4 Genes in Pathogenesis of Alzheimer's Disease and Vascular Dementia. *Am J Alzheimers Dis Other Demen*. 2014 Jun 24. pii: 1533317514539541. [Epub ahead of print] PubMed PMID: 24965284.

Genetic polymorphism and epistasis play a role in etiopathogenesis of Alzheimer's disease (AD) and vascular dementia (VaD). In this case-control study, a total of 241 patients were included in the study to see the effect of paraoxonase 1 (PON1; rs662 and rs85460) and apolipoprotein E (ApoE) genes in altering the odds of having AD and VaD along with serum PON and lipid profile. The presence of at least 1 variant allele of rs662, but not rs85460, increased the risk of having AD by 1.8-fold (95% confidence interval [CI]: 0.97-3.40) and VaD by 3.09-fold (95% CI: 1.4-6.9). The interaction between PON1 genes (rs662 and rs85460) and ApoE genes showed synergistic epistasis in altering the odds of significantly having both AD and VaD. On the other hand, low serum level of high-density lipoprotein and low level of serum PON activity were found associated significantly ($P \leq .001$ in both cases) only in patients with VaD as compared to healthy control.

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PMID: 24965284 [PubMed - as supplied by publisher]

30: Jain D, Arava S, Mishra B, Sharma S, Sharma R, Parshad R. Soft Tissue Giant Cell Tumor of Low Malignant Potential of Mediastinum: A Rare Case Report. *Int J Surg Pathol*. 2014 Jun 25. pii: 1066896914540937. [Epub ahead of print] PubMed PMID: 24965215.

Giant cell tumor (GCT) is primarily a bone neoplasm. Rare origin of the tumor from soft tissues has been reported. Involvement of mediastinum by GCT is even rarer. We herein describe an interesting case of huge mediastinal tumor in a young man. Radiologically, no primary osseous lesion was present throughout the body. Morphologically, tumor resembles osseous GCT with increased mitotic activity. Hence, the case was diagnosed as soft tissue GCT of low malignant potential at the rare site of mediastinum. To the best of our knowledge, the present case is the fourth reported case. Pathologists and clinicians need to be aware of the rare diagnosis of GCT in mediastinum and should carefully evaluate the clinical and radiological findings.

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PMID: 24965215 [PubMed - as supplied by publisher]

31: Darlong V, Biyani G, Pandey R, Baidya DK, Chandralekha, Punj J. Comparison of performance and efficacy of air-Q intubating laryngeal airway and flexible laryngeal mask airway in anesthetized and paralyzed infants and children. *Paediatr Anaesth*. 2014 Jun 23. doi: 10.1111/pan.12462. [Epub ahead of print] PubMed PMID: 24961960.

BACKGROUND: Flexible laryngeal mask airway is a commonly used supraglottic airway device (SAD) during ophthalmic surgeries. Air-Q intubating laryngeal airway (ILA) is a newer SAD used as primary airway device and as a conduit for intubation as well. Available literature shows that air-Q performs equal or better than other SADs in children and adults. However, limited data is available using air-Q in infants and small children <10 kg. So, our aim was 'To compare the performance and efficacy of these two devices in infants and small children'. Our hypothesis is that air-Q due to its improved cuff design will yield better airway seal pressures and improved laryngeal alignment as compared to flexible laryngeal mask airway.

METHODS: ASA I-II infants and children weighing <10 kg, undergoing cataract or glaucoma surgery, were randomly divided into two groups of 25 each. After induction of anesthesia and muscle relaxation, we measured oropharyngeal leak pressure (OLP), fibre-optic (FO) view of glottis, first insertion success rate, time to insert, and any other complications.

RESULTS: There was no difference between the groups in demographic data, first insertion success rate, time to insert, and postoperative complications. Air-Q provided significantly more OLP [21.1 ± 6.4 cmH₂O vs 17.4 ± 4.1 cmH₂O, $P = 0.02$] and better FO view of glottis (good view 84% vs 48%, $P = 0.0016$) as compared to flexible laryngeal mask airway.

CONCLUSION: We conclude that air-Q is superior to flexible laryngeal mask airway in providing higher airway sealing pressures and better FO grade of laryngeal view in infants and children.

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PMID: 24961960 [PubMed - as supplied by publisher]

32: Panda A, Pal Singh T, Satpathy G, Wadhvani M, Monika Matwani. Comparison of polymerase chain reaction and standard microbiological techniques in presumed bacterial corneal ulcers. *Int Ophthalmol*. 2014 Jun 24. [Epub ahead of print] PubMed PMID: 24958188.

To assess utility of PCR in the diagnosis of bacterial corneal ulcer and to compare sensitivity and specificity of this technique with conventional laboratory methods. A prospective nonrandomized investigative study conducted on 122 eyes of presumed bacterial keratitis. Samples were collected for bacterial and fungal culture and Gram stain smear. A separate sample was taken for PCR with 26 gauge needle and was dipped directly into eppendorff tube with lysis buffer in it. Diagnosis of culture proven bacterial keratitis was established in 53 (43.4 %) and most common bacterial isolate was staphylococcal sp. (83 %). Direct microscopic examination of Gram stained smear revealed presence of bacteria in 24 (23.9 %) specimens and PCR positivity was evident in 56 (45.5 %). In preantibiotic treated eyes culture was positive in 15 (30 %), Gram stain in 9 (18 %), and PCR in 18 (36 %). The same for untreated (fresh) eyes, positivity of culture as well as PCR was noted in 38 (52.7 %) and that of Gram stain was noted

in 20 (27.7 %). Sensitivity of Gram stain and PCR was 45.28 and 88.68 % respectively; whereas specificity was 92.75 % for Gram stain and 86.96 % for PCR. The average time taken for PCR reaction was 4-8 h while culture reporting took at least 24-48 h. Our findings suggest that PCR is a good adjunct modality to the "Gold Standard" technique in the diagnosis of bacterial corneal ulcer.

PMID: 24958188 [PubMed - as supplied by publisher]

33: Gupta SK, Gulati GS, Saxena A, Ho SY, Juneja R. "Isolated Atrial Inversion" Without Transposition Physiology: Yet Another "Twisted Heart". *World J Pediatr Congenit Heart Surg.* 2014 Jun 23;5(3):488-490. [Epub ahead of print] PubMed PMID: 24958061.

Atrial inversion (or mirror-imaged atrial arrangement) occurring in isolation, that is, without corresponding mirror imagery of the viscera, has been previously shown with discordant atrioventricular connections resulting in transposition physiology. We hereby report a case of "isolated atrial inversion" wherein atrioventricular connections were concordant owing to the presence of criss-crossing of the ventricular inflows.

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PMID: 24958061 [PubMed - as supplied by publisher]

34: Nattusamy L, Madan K, Khilnani GC, Guleria R. Pulmonary infarction in acute pulmonary embolism: reversed halo sign. *BMJ Case Rep.* 2014 Jun 23;2014. pii: bcr2014205181. doi: 10.1136/bcr-2014-205181. PubMed PMID: 24957589.

PMID: 24957589 [PubMed - in process]

35: Kumar A, Midha N, Gogia V, Gupta S, Sehra S, Chohan A. Efficacy of Oral Valproic Acid in Patients with Retinitis Pigmentosa. *J Ocul Pharmacol Ther.* 2014 Jun 23. [Epub ahead of print] PubMed PMID: 24955739.

Abstract Purpose: To evaluate the efficacy of valproic acid (VPA) on visual function in patients with retinitis pigmentosa (RP). **Methods:** Thirty patients (60 eyes) with typical RP were recruited for the study. Of these, 15 patients received oral VPA (500mg once daily) for a period of 1 year (group 1) and the remaining 15 received no treatment (group 2) and served as controls. The effect of VPA on visual function was determined in terms of visual acuity, amplitude and implicit time in multifocal electroretinography (mfERG), and visual evoked response (VER) performed at presentation and at the third month, sixth month, and 1 year in both groups. Side effects of oral VPA were also monitored. **Results:** At 1-year follow-up, 14 of 15 patients in group 1 had improvement in median best corrected visual acuity (BCVA) from 1.8 [Range (R) 1-3] at baseline to 1.3 (R, 0.6-1.3) ($P < 0.001$). In contrast, there was a slight decrease in median BCVA from 1.8 (0.8- 3) logarithm of the minimum angle of resolution (logMAR) at baseline to 1.83 ($P = 0.3$) in the control arm. There was also a statistically significant increase in improvement in amplitude and latency/implicit time in mfERG and VER in this group ($P < 0.001$). However, no such improvement was observed in the control arm. **Conclusions:** Thus, VPA seems to have a positive effect on the visual functions in RP patients. Long-term studies evaluating the dose modifications, genetic analysis, and change in visual fields will add to our current knowledge.

PMID: 24955739 [PubMed - as supplied by publisher]

36: Agrawal YO, Sharma PK, Shrivastava B, Arya DS, Goyal SN. Hesperidin blunts streptozotocin-isoproterenol induced myocardial toxicity in rats by altering of PPAR- γ receptor. *Chem Biol Interact.* 2014 Jun 19;219C:211-220. doi: 10.1016/j.cbi.2014.06.010. [Epub ahead of print] PubMed PMID: 24954035.

Hesperidin has been shown to possess cardioprotective and anti-diabetic potential. Hitherto, its molecular mechanism on isoproterenol (ISO)-induced myocardial dysfunction in diabetes is still not explored. Hence, for the first time we sought to investigate whether hesperidin exerts any beneficial effect on the pathophysiology of myocardial infarction (MI) in diabetes through the PPAR- γ pathway by assessing a variety of indices e.g., apoptosis, hemodynamic, biochemical and histoarchitectural changes. Diabetes was induced by a single dose of STZ (50mg/kg IP). Diabetic rats received either hesperidin (100mg/kg/day orally), the PPAR- γ antagonist GW9662 (1mg/kg/day IP), or both for 14 days with concurrent administration of ISO (85mg/kg SC) on days 13 and 14. ISO-STZ rats resulted in severe myocardial dysfunction (decreased \pm LVdP/dt and increased LVEDP). In addition, augmented myocardial thiobarbituric acid-reactive substances and serum troponin-I with a concomitant decrease in level of glutathione and activities of catalase, superoxide dismutase antioxidants with cardiac injury biomarkers creatine kinase-MB isoenzyme, lactate dehydrogenase were seen. Morphological studies of the ISO-STZ challenged myocardium exhibited severe necrosis, edema and inflammatory changes. In Western blot analysis, Bcl-2 and PPAR- γ expression were decreased where as Bax expression was significantly increased, suggesting role of apoptosis in myocardial dysfunction. Interestingly, hesperidin treatment positively modulated these parameters as validated by improved hemodynamic and left ventricular functions, fortified endogenous anti-oxidant defence system and improved structural integrity of the myocardium. However, significant effects were lowered in animals treated with hesperidin plus GW9662. Moreover, down-regulated PPAR- γ and Bcl-2 expressions in myocardial infarcted diabetic hearts were increased by hesperidin treatment. Hence, for the first time the present study suggests that, hesperidin reduces oxidative stress, apoptosis and improves cardiac function via the PPAR- γ pathway.

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PMID: 24954035 [PubMed - as supplied by publisher]

37: Kumar B, Gupta SK, Nag TC, Srivastava S, Saxena R, Jha KA, Srinivasan BP. Retinal neuroprotective effects of quercetin in streptozotocin-induced diabetic rats. *Exp Eye Res.* 2014 Aug;125:193-202. doi: 10.1016/j.exer.2014.06.009. Epub 2014 Jun 18. PubMed PMID: 24952278.

The aim of the present study was to evaluate the effects of Quercetin (Qctn), a plant based flavonol, on retinal oxidative stress, neuroinflammation and apoptosis in streptozotocin-induced diabetic rats. Qctn treatment (25- and 50 mg/kg body weight) was given orally for six months in diabetic rats. Retinal glutathione (GSH) and antioxidant enzymes [superoxide dismutase (SOD) and catalase (CAT)] were estimated using commercially available assays, and inflammatory cytokines levels [tumor necrosis factor- α (TNF- α), Interleukin-1 β (IL-1 β)] were estimated by ELISA method. Immunofluorescence and western blot studies were performed for nuclear factor kappa B (NF- κ B), caspase-3, glial fibrillary acidic protein (GFAP) and aquaporin-4 (AQP4) expressions. Structural changes were evaluated by light microscopy. In the present study, retinal GSH levels and antioxidant enzyme (SOD and CAT) activities were significantly decreased in diabetic group as compared to normal group. However, in Qctn-treated rats, retinal GSH levels were restored close to normal levels and positive modulation of antioxidant enzyme activities was observed. Diabetic retinas showed significantly increased expression of pro-inflammatory cytokines (TNF- α and IL-1 β) as compared to that in normal retinas, while Qctn-treated retinas showed

significantly lower levels of cytokines as compared to diabetic retinas. Light microscopy showed significantly increased number of ganglion cell death and decreased retinal thickness in diabetic group compared to those in normal retina; however, protective effect of Qctn was seen. Increased apoptosis in diabetic retina is proposed to be mediated by overexpression of NF-kB and caspase-3. However, Qctn showed inhibitory effects on NF-kB and caspase-3 expression. Microglia showed upregulated GFAP expression, and inflammation of Müller cells resulted in edema in their endfeet and around perivascular space in nerve fiber layer in diabetic retina, as observed through AQP4 expression. However, Qctn treatments inhibited diabetes-induced increases in GFAP and AQP4 expression. Based on these findings, it can be concluded that bioflavonoids, such as Qctn can be effective for protection of diabetes induced retinal neurodegeneration and oxidative stress.

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PMID: 24952278 [PubMed - in process]

38: Verma A, Bajpai M, Baidya DK. Lumbotomy approach for upper urinary tract surgeries in adolescents: Feasibility and challenges. *J Pediatr Urol.* 2014 Jun 2. pii: S1477-5131(14)00147-8. doi: 10.1016/j.jpuro.2014.05.001. [Epub ahead of print] PubMed PMID: 24947345.

OBJECTIVE: The objective of this study was to assess the feasibility and challenges in a lumbotomy approach for performing upper urinary tract surgeries in adolescent children.

MATERIAL AND METHODS: Fifty-five adolescent children underwent various upper urinary tract surgeries from 2000 to 2012. In all patients, the kidneys and ureters were approached via a lumbotomy incision. The patients' characteristics were analysed from the hospital charts. Intraoperative and postoperative details were gathered from individual case files. Data were collected regarding: age, weight, gender, diagnosis, surgical procedure, anaesthetic details, any intraoperative problems encountered, postoperative pain, time to oral feed, length of hospitalisation and any complications.

RESULTS: The median age at surgery was 14 years (range 10-19). There were 42 boys and 13 girls. Median weight was 41 kg (range 28-52 kg). Surgeries performed were pyeloplasty, pyelolithotomy, nephroureterectomy and heminephrectomy. Mean duration of surgery was 80 min (range 60-130 min) with no special anaesthetic requirements. No intraoperative problems were encountered. In all patients, postoperative stay was uneventful with minimal analgesic requirements and oral feeding was started the very next day. There were no incision-related complications.

CONCLUSIONS: A lumbotomy incision is technically easy and safe, even in adolescent children, as an approach for upper urinary-tract surgeries.

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PMID: 24947345 [PubMed - as supplied by publisher]

39: Singh P, Wadhwa N, Chaturvedi MK, Bhatia V, Saini S, Tandon N, Makharia GK, Maki M, Not T, Phillips A, Bhatnagar S. Validation of point-of-care testing for coeliac disease in children in a tertiary hospital in north India. *Arch Dis Child.* 2014 Jun 18. pii: archdischild-2013-305567. doi: 10.1136/archdischild-2013-305567. [Epub ahead of print] PubMed PMID: 24942708.

OBJECTIVE: Some of the conventional serological tests for coeliac disease (CD) are expensive, time-consuming and not readily available in developing countries, leading to a delay in diagnosis. Recently, point-of-care tests (POCT) have been manufactured and tested in Europe but have not been validated in our setting. We therefore aimed to study the diagnostic accuracy of the POCT 'Biocard' test in diagnosing CD in Indian children.

DESIGN: Cross-sectional study.

SETTING: Tertiary care centre in north India.

PATIENTS: Children, aged 2-18 years, with chronic diarrhoea, short stature or refractory anaemia underwent serological testing for CD with antiendomysial antibodies (AEA), antitissue transglutaminase (tTG) antibodies and Biocard test followed by duodenal biopsy irrespective of serological results. CD was diagnosed with positive AEA and duodenal biopsy showing >grade 2 changes using modified Marsh criteria. Those who were both AEA negative and had normal histology were considered CD negative.

RESULTS: Of 319 children who underwent the serological testing, 170 agreed for biopsy. Of these, 110 were diagnosed with CD and 30 were found to be CD negative. Remaining 30 had discordant AEA and histology results and were not included in analysis. Biocard test agreed with 92/110 positive and 27/30 negative diagnoses based on reference tests (83.6% sensitivity and 90% specificity). tTG was found to be 93.8% sensitive and 96.4% specific.

CONCLUSIONS: We successfully validated the POCT for CD in our setting. It could be used to increase case detection rates in developing countries with a large undiagnosed CD burden.

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PMID: 24942708 [PubMed - as supplied by publisher]

40: Baranwal AK, Meena JP, Singhi SC, Muralidharan J. Dexamethasone pretreatment for 24 h versus 6 h for prevention of postextubation airway obstruction in children: a randomized double-blind trial. Intensive Care Med. 2014 Jun 18. [Epub ahead of print] PubMed PMID: 24939817.

PURPOSE: Multidose steroid pretreatment is effective in preventing postextubation airway obstruction (PEAO) in adults, however controversy continues for children. This study was designed as a randomized, placebo-controlled, double-blind trial to compare the effect of 24-h pretreatment with dexamethasone (24hPD) versus 6-h pretreatment (6hPD) on PEAO and reintubation in children at a tertiary care hospital in a developing economy.

METHODS: Hundred twenty-four children (3 months to 12 years) intubated for ≥ 48 h and planned to have extubation during next 24 h were randomized to receive 24hPD (0.5 mg/kg/dose, q6h, total of six doses; n = 66) or 6hPD (total of three doses; n = 58). Patients with preexistent upper airway conditions, chronic respiratory diseases, steroid therapy in last 7 days, gastrointestinal bleeding, hypertension, and hyperglycemia and those likely to have poor airway reflexes were excluded.

RESULTS: The two groups were similar at baseline. 24hPD reduced the incidence of PEAO (43/66 versus 48/58; p = 0.027) with absolute risk reduction of 17 %. It also reduced the incidence of reintubation, though nonsignificantly, by half [5/61 versus 9/58; relative risk (RR), 1.09; 95 % confidence interval (CI), 0.96-1.25]. Time to recovery from PEAO among non-reintubated patients was shorter

among 24hPD patients ($p = 0.016$). No adverse event was noted with dexamethasone use. Intubation duration >7 days and cuffed tracheal tubes were found to be independent risk factors for PEA0 (odds ratio 6 and 3.12, respectively).

CONCLUSIONS: 24-h pretreatment with multidose dexamethasone reduced the incidence of PEA0 and the time to recover from it. 24hPD should be considered for high-risk children intubated for >48 h in the study setting. Further studies with larger sample size from different socioeconomic background are desirable to validate these findings.

PMID: 24939817 [PubMed - as supplied by publisher]

41: Acharya S, Goyal A, Bhalla AS, Sharma R, Seth A, Gupta AK. In vivo characterization of urinary calculi on dual-energy CT: going a step ahead with sub-differentiation of calcium stones. *Acta Radiol.* 2014 Jun 17. pii: 0284185114538251. [Epub ahead of print] PubMed PMID: 24938664.

BACKGROUND: The role of dual-energy computed tomography (DECT) in characterization of urinary calculi is evolving and literature regarding differentiation of calcium calculi is sparse and confounding.
PURPOSE: To evaluate the capability of DECT in assessing the urinary calculi composition in vivo, especially in differentiating various types of calcium calculi.

MATERIAL AND METHODS: One hundred and twenty patients underwent DECT for characterization of urinary calculi. Seventy patients with 114 calculi, including 93 calcium stones, were retrospectively analyzed. DE ratios and attenuation differences were compared using ANOVA and receiver-operating-characteristic (ROC) analysis was done to predict cut-off values, in particular for detecting calcium-oxalate-monohydrate (COM) stones.

RESULTS: DE ratio ≤ 1.14 accurately detected uric acid calculi, ≥ 1.29 was definitive for calcium and intermediate values were characteristic of cystine stones. DE ratios were significantly different between group 1 (COM [n=32]; mean 1.376 ± 0.041), group 2 ([calcium oxalate dihydrate (COD)+COM] [n=51]; 1.416 ± 0.048), and group 3 ([carbonate apatite (CaP)+COD+COM] [n=10]; 1.468 ± 0.038) (group 1 vs. 2, $P=0.001$; 1 vs. 3, $P=0.000$; 2 vs. 3, $P=0.004$). More importantly, pure COM calculi (group 1) had significantly lower DE ratio compared with mixed calcium calculi (groups 2 and 3) ($P=0.000$). Attenuation differences (between low and high kV images) could not distinguish between COM and mixed calculi. ROC analysis for detection of COM calculi yielded AUC of 0.770 with cut-off DE ratio 1.385 (sensitivity 65.6%, specificity 82%) and value < 1.335 was seen only with COM calculi (100% specificity).

CONCLUSION: DECT can be employed for in vivo differentiation of various types of calculi and for detection of relatively lithotripsy-resistant COM calculi.

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PMID: 24938664 [PubMed - as supplied by publisher]

42: Bhatia J, Gamad N, Bharti S, Arya DS. Canagliflozin-current status in the treatment of type 2 diabetes mellitus with focus on clinical trial data. *World J Diabetes.* 2014 Jun 15;5(3):399-406. doi: 10.4239/wjd.v5.i3.399. Review. PubMed PMID: 24936262; PubMed Central PMCID: PMC4058745.

Canagliflozin (CFZ) is a member of new class of glucose lowering agents, sodium-glucose co-transporter (SGLT) inhibitors, which got approval by food and drug administration. It has insulin independent action by blocking the transporter protein SGLT2 in the kidneys, resulting in urinary glucose excretion and reduction in blood glucose levels. In clinical trials, CFZ significantly decreased HbA1c level when administered either as monotherapy or as combined therapy with other anti-diabetic drugs. Intriguingly, it showed additional benefits like weight reduction and lowering of blood pressure. The commonly observed side effects were urinary and genital infections. It has exhibited favorable pharmacokinetic and pharmacodynamic profiles even in patients with renal and hepatic damage. Hence, this review purports to outline CFZ as a newer beneficial drug for type 2 diabetes mellitus.

PMCID: PMC4058745

PMID: 24936262 [PubMed]

43: Saxena A. Increasing detection of rheumatic heart disease with echocardiography. *Expert Rev Med Devices*. 2014 Sep;11(5):491-7. doi: 10.1586/17434440.2014.930661. Epub 2014 Jun 17. PubMed PMID: 24934495.

Rheumatic heart disease (RHD) is estimated to affect over 20 million people worldwide, the vast majority being in developing countries. Screening for RHD has been recommended by the WHO since 2004. Conventionally, auscultation has been used for diagnosing RHD. Auscultation has its limitation and may not detect mild cases. A large number of studies have reported echocardiographic screening for RHD over the last several years. Most of these studies report an almost 10-fold higher prevalence of RHD by echocardiography as compared to conventional method of auscultation. Early diagnosis of such mild cases may be important as instituting secondary prophylaxis in such cases may reduce the burden of the disease. However, several concerns remain about the significance and natural history of these minor valvular changes detected by echocardiography. Whether secondary prophylaxis will reverse these abnormalities is also unclear. Long term follow up studies are required to answer some of these concerns.

PMID: 24934495 [PubMed - in process]

44: Goyal A, Singh S, Tandon N, Gupta N, Gupta YK. Effect of Atorvastatin on Pancreatic Beta-Cell Function and Insulin Resistance in Type 2 Diabetes Mellitus Patients: A Randomized Pilot Study. *Can J Diabetes*. 2014 Jun 3. pii: S1499-2671(14)00042-2. doi: 10.1016/j.jcjd.2014.01.006. [Epub ahead of print] PubMed PMID: 24933106.

OBJECTIVE: Statins are commonly used for the management of dyslipidemia in type 2 diabetes mellitus patients. We hypothesized that atorvastatin could modulate the beta-cell function by altering the levels of proapoptotic and antiapoptotic lipoproteins and could also have an effect on insulin resistance. The aim of the present pilot study was to assess the effect of atorvastatin 10 mg on pancreatic beta-cell function and insulin resistance in patients with hyperlipidemia and type 2 diabetes by using the homeostasis model assessment-2 (HOMA2) index.

METHODS: Fifty-one type 2 diabetes patients receiving oral antidiabetes drugs, not taking statins, with baseline low-density lipoprotein cholesterol between 2.6 mmol/L and 4.1 mmol/L were included. Forty-three patients (21 in placebo group and 22 in atorvastatin group) completed the study and were taken up for final analysis. Fasting blood samples were obtained at baseline and at 12 weeks to determine levels of blood glucose, lipid profile, insulin, C-peptide and glycosylated hemoglobin (A1C).

RESULTS: Atorvastatin nonsignificantly increased fasting serum insulin (+14.29%, p=0.18), accompanied by marginal nonsignificant increases in fasting plasma glucose and A1C. There was a decrease in HOMA2 percent beta-cell function (-2.9%, p=0.72) and increase in HOMA2 insulin resistance (+14%, p=0.16) in the atorvastatin group as compared with baseline, but the difference was not statistically significant.

CONCLUSIONS: Atorvastatin in the dose used failed to produce significant change in pancreatic beta-cell function and insulin resistance in type 2 diabetes patients as assessed by the HOMA2 index. The possible explanations include absence of lipotoxicity at prevailing levels of dyslipidemia at baseline or inadequacy of statin dose used in the study. (Clinical Trials Registry-India: CTRI/2008/091/000099).

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PMID: 24933106 [PubMed - as supplied by publisher]

45: Krishnamurthy S, Pathy S, Ahmed I, Chander S. Comments on - Vaginal dose point reporting in cervical cancer patients treated with combined 2D/3D external beam radiotherapy and 2D/3D brachytherapy. *Radiother Oncol.* 2014 Jun 12. pii: S0167-8140(14)00223-0. doi: 10.1016/j.radonc.2014.05.006. [Epub ahead of print] PubMed PMID: 24931293.

PMID: 24931293 [PubMed - as supplied by publisher]

46: Mohan T, Bhatnagar S, Gupta DL, Rao DN. Current understanding of HIV-1 and T-cell adaptive immunity: Progress to date. *Microb Pathog.* 2014 Aug;73C:60-69. doi: 10.1016/j.micpath.2014.06.003. Epub 2014 Jun 12. Review. PubMed PMID: 24930593.

The cellular immune response to human immunodeficiency virus (HIV) has different components originating from both the adaptive and innate immune systems. HIV cleverly utilizes the host machinery to survive by its intricate nature of interaction with the host immune system. HIV evades the host immune system at innate and adaptive, allows the pathogen to replicate and transmit from one host to another. Researchers have shown that HIV has multipronged effects especially on the adaptive immunity, with CD4(+) cells being the worst affected T-cell populations. Various analyses have revealed that, the exposure to HIV results in clonal expansion and excessive activation of the immune system. Also, an abnormal process of differentiation has been observed suggestive of an alteration and blocks in the maturation of various T-cell subsets. Additionally, HIV has shown to accelerate immunosenescence and exhaustion of the overtly activated T-cells. Apart from causing phenotypic changes, HIV has adverse effects on the functional aspect of the immune system, with evidences implicating it in the loss of the capacity of T-cells to secrete various antiviral cytokines and chemokines. However, there continues to be many aspects of the immune-pathogenesis of HIV that are still unknown and thus required further research in order to convert the malaise of HIV into a manageable epidemic.

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PMID: 24930593 [PubMed - as supplied by publisher]

47: Garg K, Kumar R. Isolated central canal rupture of spinal dermoid. *J Neurosurg Spine*. 2014 Jun 13;1-6. [Epub ahead of print] PubMed PMID: 24926936.

Spinal dermoid tumors are rare, benign, slow-growing tumors. Rupture of spinal dermoids, in contrast to cranial dermoids, is rarely reported. Rupture in the central canal alone is even more rare, with only a few cases reported in the literature. The presence of fat droplets within the central canal is unusual because the central canal is rudimentary in adults. The authors report 3 such cases and review the pertinent literature.

PMID: 24926936 [PubMed - as supplied by publisher]

48: Thukral A, Joshi M, Joshi P, Prakash V, Adkoli BV, Deorari AK. Apps for management of sick newborn: Evaluation of impact on health care professionals. *J Trop Pediatr*. 2014 Jun 12. pii: fmu032. [Epub ahead of print] PubMed PMID: 24924579.

The objective of the study was to evaluate the efficacy of interactive mobile device application 'Apps on sick newborn care' as a training tool, in improving the knowledge and skill scores of postgraduate nursing students (N = 27). A training workshop was conducted in small workstations by the facilitators using the modules on android device and preloaded videos in which the procedure was systematically demonstrated. A mixed-methods approach consisting of pre-post tests, Likert's scale and focus group discussion were used to assess the knowledge, skills and perception of the participants. The scores in multiple choice questions (pre and post, 12.4 ± 2.2 and 19.7 ± 3.6 ; $P < 0.001$) and composite Objective Structured Clinical Examination scores (32.8 ± 7.3 vs. 63.7 ± 7.1 ; $P < 0.001$) significantly improved after training. The students derived overall satisfaction from the training using the device. Such applications have potential to train health-care professionals.

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PMID: 24924579 [PubMed - as supplied by publisher]

49: Bisht A, Suri A, Bansal S, Chandra PS, Kumar R, Singh M, Sharma BS. Factors affecting surgical outcome of endoscopic third ventriculostomy in congenital hydrocephalus. *J Clin Neurosci*. 2014 Sep;21(9):1483-1489. doi: 10.1016/j.jocn.2013.12.033. Epub 2014 Jun 9. Review. PubMed PMID: 24923872.

Endoscopic third ventriculostomy (ETV) is an accepted modality of treatment for obstructive hydrocephalus, with good results in adult patients. However in the pediatric age group results vary from poor to similar to the adult population. This study evaluates the outcome of ETV in congenital hydrocephalus of both early and delayed presentation, and investigates factors that determine the outcome. Patients with congenital hydrocephalus who underwent ETV between January 2006 and December 2011 were retrospectively analyzed. Any conditions potentially influencing the need for redo surgery (persistent cerebrospinal fluid [CSF] leak not responding to local measures, tense fontanelle, increased ventricular size, recurrence of symptoms or radiological evidence of failure) were analyzed. A total of 102 patients with a mean age of 7.45 years were included. Presenting features were increasing head circumference and delayed milestones. Ninety-eight patients had triventricular hydrocephalus due to aqueductal stenosis. Procedures performed were ETV only (n=74), ETV with aqueductoplasty (n=22), ETV with cystoventriculostomy (n=2) and aqueductoplasty only (n=2). Failure of ETV occurred in 11 patients and all were managed with a ventriculoperitoneal shunt. CSF leak in the perioperative period was the only factor that was significantly

associated with failure of ETV. ETV is a safe procedure with a good success rate and can be offered to children with aqueductal stenosis. There is a higher chance of failure if there is a CSF leak in the early or late postoperative period.

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PMID: 24923872 [PubMed - as supplied by publisher]

50: Biswas B, Rastogi S, Khan SA, Shukla NK, Deo SV, Agarwala S, Sharma DN, Thulkar S, Vishnubhatla S, Pathania S, Bakhshi S. Hypoalbuminaemia is an Independent Predictor of Poor Outcome in Metastatic Ewing's Sarcoma Family of Tumours: A Single Institutional Experience of 150 Cases Treated with Uniform Chemotherapy Protocol. *Clin Oncol (R Coll Radiol)*. 2014 Jun 8. pii: S0936-6555(14)00201-5. doi: 10.1016/j.clon.2014.05.006. [Epub ahead of print] PubMed PMID: 24919857.

AIMS: Data on metastatic Ewing's sarcoma family of tumours (ESFT) with uniform chemotherapy protocol are minimal.

MATERIALS AND METHODS: This was a single institutional patient review of patients treated between June 2003 and November 2011 and evaluated on an intent-to-treat analysis. All patients received uniform chemotherapy: neoadjuvant chemotherapy (NACT), surgery and/or radiotherapy as local treatment followed by adjuvant chemotherapy. Local treatment was offered if the patient achieved a complete response and/or a partial response at both the primary and the metastatic site.

RESULTS: In total, 150/374 (40%) ESFT patients were metastatic, with a median age of 15 years (range: 2-50); a tumour diameter of 10 cm (range: 1.8-26). Most common metastatic sites were lung only (53; 35%), bone only (35; 23%) and combined bone/lung (25; 17%). Twenty patients underwent surgery; 55 patients received radical radiotherapy after NACT. After a median follow-up of 26.1 months (range: 1.6-101.6), 5 year event-free survival (EFS), overall survival and local control rate (LCR) were $9.1 \pm 3.3\%$, $16.9 \pm 5.2\%$ and $31.8 \pm 7.9\%$, respectively. Univariate analysis showed serum albumin ≤ 3.4 g/dl ($P < 0.001$) to predict inferior EFS. Tumour size > 8 cm ($P = 0.05$), haemoglobin ≤ 10 g/dl ($P = 0.04$), hypoalbuminaemia ($P = 0.003$) and radical radiotherapy as local treatment ($P = 0.03$) predicted inferior overall survival. No factor significantly predicted LCR, although age ≤ 15 years ($P = 0.08$) and radical radiotherapy as local treatment ($P = 0.09$) had a trend towards inferior LCR. Hypoalbuminaemia was the only prognostic factor to predict EFS on multivariate analysis.

CONCLUSION: This was the largest study of metastatic ESFT from Asia and identified a unique prognostic factor. In view of dismal prognosis with conventional chemotherapy in metastatic ESFT with hypoalbuminaemia, palliative intent therapy may be a potential therapeutic alternative for this subgroup of patients, especially in resource-challenged situations.

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PMID: 24919857 [PubMed - as supplied by publisher]

51: Kumar N, Kaur G, Kanga U, Tandon N, Caillat-Zucman S, Mehra NK. Association of PTPN22+1858C/T polymorphism with Type 1 diabetes in the North Indian population. *Int J Immunogenet*. 2014 Aug;41(4):318-23. doi: 10.1111/iji.12129. Epub 2014 Jun 10. PubMed PMID: 24913133.

A nonsynonymous SNP +1858C/T (rs2476601) in the protein tyrosine phosphatase, nonreceptor type 22 (PTPN22) gene leading to Arg 620 Trp substitution is known to

be associated with susceptibility to type 1 diabetes (T1D) and several other autoimmune diseases. We studied this polymorphism in 145 T1D patients and 210 healthy controls from North India. The minor allele +1858T was observed to be significantly increased among patients as compared to healthy controls (2.76% vs 0.5%, $P = 0.027$, $OR = 5.93$; 95% CI = 1.4-24.8). The association was also observed at the level of heterozygous C/T genotype (5.5% vs 0.95%, $P = 0.026$, $OR = 6.07$; 95% CI = 1.43-25.6). The T allele and C/T genotype were predominantly found among patients who were positive for both glutamic acid decarboxylase 65 (GAD65) and insulin antigen 2 (IA2) autoantibodies and showed significantly increased frequencies (10%, $P = 0.034$, $OR = 11.67$; 95% CI = 1.58-84.1 and 20%, $P = 0.031$, $OR = 13.0$; 95% CI = 1.66-97.5, respectively) as compared to patients negative for these autoantibodies (0.95% and 1.9%, respectively). The results suggest that the PTPN22+1858T allele is positively associated with T1D in the North Indian population.

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PMID: 24913133 [PubMed - in process]

52: Goyal A, Srivastava A, Sihota R, Kaur J. Evaluation of oxidative stress markers in aqueous humor of primary open angle glaucoma and primary angle closure glaucoma patients. *Curr Eye Res.* 2014 Aug;39(8):823-9. doi: 10.3109/02713683.2011.556299. Epub 2014 Jun 9. PubMed PMID: 24912005.

Abstract Purpose: The present study was designed to determine the levels of antioxidant enzymes (superoxide dismutase, catalase, and glutathione peroxidase) and non-enzymatic antioxidants (vitamins C and E) in aqueous humor of primary open angle glaucoma (POAG) and primary angle closure glaucoma (PACG) patients. **Materials and Methods:** In this study, aqueous humor of POAG (n=30) and PACG (n=30) patients was obtained. For control, aqueous humor of 30 age-matched cataract patients (n=30) was collected. Activities of antioxidant enzymes and non-enzymatic antioxidants levels were measured spectrophotometrically. **Results:** A significant increase in superoxide dismutase (SOD) and glutathione peroxidase (GPx) activities was found in aqueous humor of POAG and PACG patients as compared to cataract patients ($p < 0.001$). No significant changes were observed in catalase activity. The levels of vitamins C and E were significantly lower in the aqueous humor of POAG and PACG as compared to cataract patients ($p < 0.001$). **Conclusion:** These results suggest that a significant increase in oxidative stress may play a role in the pathogenesis of POAG and PACG. Determination of oxidative stress in aqueous humor may help in understanding the course of this disease, and oxidative damage might be a relevant target for both prevention and therapy.

PMID: 24912005 [PubMed - in process]

53: Khunger M, Kumar U, Roy HK, Tiwari AK. Dysplasia and cancer screening in 21st century. *APMIS.* 2014 Aug;122(8):674-82. doi: 10.1111/apm.12283. Epub 2014 Jun 7. PubMed PMID: 24910362.

Cancer is the second leading cause of death in the United States, and is projected to overtake cardiovascular diseases as the number one cause of mortality in adults within a decade. Cancer screening offers an opportunity to detect cancer precursor lesions at early stages, and hence preemptively manage and prevent development of frank cancers. Despite tremendous technological advances over last decade, which allow us to study genomic/epigenomic and proteomic profile of cells with unprecedented details, it has been difficult to develop non-invasive biomarkers with high sensitivity and specificity that can have clinical applications. Dysplasia, which requires histopathological

examination of the tissue, remains the best marker of propensity to develop cancer, and hence the best available surrogate biomarker. However, procuring tissues for detection of dysplasia is highly invasive and economically unviable for most visceral malignancies. Therefore, there is emphasis on developing circulating biomarkers through a consortium approach where high-performing biomarkers in basic research are tested in large collaborative clinical settings to assess their clinical efficacy. In this review, we have discussed fundamental principles of cancer screening, difficulties in developing novel and effective biomarkers, continuing reliance on dysplasia as best available surrogate marker for cancer screening, as well as briefly highlighted newer screening modalities.

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PMID: 24910362 [PubMed - in process]

54: Gupta R, Balhara YP. Antipsychotic induced chronic recurrent oculogyric crisis in a patient with obsessive compulsive disorder. *Psychopharmacology (Berl)*. 2014 Aug;231(15):3065-6. doi: 10.1007/s00213-014-3638-7. Epub 2014 Jun 8. PubMed PMID: 24908271.

PMID: 24908271 [PubMed - in process]

55: Khandelwal P, Jain V, Gupta AK, Kalaiivani M, Paul VK. Association of early postnatal growth trajectory with body composition in term low birth weight infants. *J Dev Orig Health Dis*. 2014 Jun;5(3):189-96. doi: 10.1017/S2040174414000178. PubMed PMID: 24901658.

Growth acceleration or catch-up growth (CUG) in early infancy is a plausible risk factor for later obesity and cardiovascular disease. We postulate that this risk may be mediated by an adverse programming of body composition by CUG in early infancy. The study was aimed at evaluating the association between the pattern of gain in weight and length of term low birth weight (LBW) infants from birth to 6 months, with fat mass percent (FM%) at 6 months. Term healthy singleton LBW infants were enrolled. Baby's weight and length z-scores were measured at birth and three follow-up visits. Body composition was measured by dual-energy absorptiometry at last visit. A total of 54 babies (28 boys) were enrolled. The mean birth weight and gestation were 2175 ± 180 g and 37.6 ± 0.6 weeks. Follow-up visits were at 1.4 ± 0.0 , 3.0 ± 0.3 and 7.2 ± 0.8 months. The proportion of babies who showed CUG [increase in weight for age z-score (Δ WAZ) > 0.67] from birth to 1.4, 3.0 and 7.2 months was 29.6, 26.4 and 48.5%, respectively. The mean FM% at 7.2 months was $16.6 \pm 7.8\%$. Infants with greater Δ WAZ from birth to 3 and 7.2 months had significantly greater FM% at 7.2 months after adjusting for current age, size and gender. Infants with early CUG (< 1.4 months) had higher FM% than infants with no CUG. We conclude that earlier and greater increment in WAZ is positively associated with FM%.

PMID: 24901658 [PubMed - in process]

56: Sharma P, Jain TK, Parida GK, Karunanithi S, Patel C, Sharma A, Thulkar S, Julka PK, Bal C, Kumar R. Diagnostic accuracy of integrated (18)F-FDG PET/CT for restaging patients with malignant germ cell tumours. *Br J Radiol*. 2014 Aug;87(1040):20140263. doi: 10.1259/bjr.20140263. Epub 2014 Jun 4. PubMed PMID: 24896199; PubMed Central PMCID: PMC4112389.

OBJECTIVE: Evaluation of utility of fluorine-18 fludeoxyglucose ((18)F-FDG) positron emission tomography/CT (PET/CT) for restaging patients with primary malignant germ cell tumours (GCTs).

METHODS: Data of 92 patients (age, 31.94±10.1 years; male/female, 86/6) with histopathologically confirmed malignant GCTs (gonadal, 88; mediastinal, 4; seminomatous, 47 and non-seminomatous, 45) who underwent (18)F-FDG PET/CT for restaging (suspected recurrence/post-therapy evaluation) were retrospectively analysed. Two experienced nuclear medicine physicians reviewed the PET/CT images in consensus, qualitatively and semi-quantitatively [maximum standardized uptake value (SUVmax)]. Histopathology (if available) and clinical/imaging/biochemical follow-up (minimum of 6 months) were employed as the reference standard.

RESULTS: (18)F-FDG PET/CT was interpreted as positive in 59 and negative in 33 patients. Local disease was seen in 5, nodal disease in 50 and distant metastasis in 22 patients. PET/CT was true positive in 49, false positive in 10, true negative in 30 and false negative in 3 patients. (18)F-FDG PET/CT showed sensitivity, specificity, positive predictive value, negative predictive value and accuracy of 94.2%, 75.0%, 83.0%, 90.9% and 85.8% overall; 90.0%, 74.0%, 72.0%, 90.9% and 80.8% in seminomatous GCT; and 96.8%, 76.9%, 91.1%, 90.9% and 91.1% in non-seminomatous GCT, respectively. Difference in PET/CT accuracy for seminomatous and non-seminomatous GCTs was not significant ($p=0.263$). PET/CT demonstrated disease in 13 patients with negative/equivocal conventional imaging findings and in 9 patients with normal tumour markers. No site- or histology-based difference was seen in SUVmax.

CONCLUSION: (18)F-FDG PET/CT demonstrates high diagnostic accuracy for restaging patients with malignant GCTs. It has comparable diagnostic performance in both seminomatous and non-seminomatous malignant GCTs.

ADVANCES IN KNOWLEDGE: The present article demonstrates high diagnostic accuracy of (18)F-FDG PET/CT for restaging both seminomatous and non-seminomatous malignant GCTs in a large patient population.

PMCID: PMC4112389 [Available on 2015/8/1]

PMID: 24896199 [PubMed - in process]

57: Kumar M, Pydi SP, Sharma S, Singh TP, Kaur P. Identification of a high affinity selective inhibitor of Polo-like kinase 1 for cancer chemotherapy by computational approach. *J Mol Graph Model*. 2014 Jun;51:104-12. doi: 10.1016/j.jmgm.2014.04.014. Epub 2014 May 6. PubMed PMID: 24879322.

Polo-like kinase (Plk)1 is a key regulator of the cell cycle during mitotic phase and is an attractive anti-mitotic drug target for cancer. Plk1 is a member of Ser/Thr kinase family which also includes Plk2-4 in human. Plk1 promotes the cell division whereas Plk2 and Plk3 are reported to act as tumour suppressors. The available inhibitors of Plk1 also suppress Plk2 and Plk3 activity significantly resulting in the cell death of normal cells in addition to the cancer cells. Hence, it is imperative to explore Plk1 specific inhibitors as anti-cancer drugs. In this work, a selective potential inhibitor of Plk1 has been identified by molecular docking based high throughput virtual screening. The identified compound exploits the subtle differences between the binding sites of Plk1 and other Ser/Thr kinases including Plk2-4. The predicted binding affinity of identified inhibitor is higher than available inhibitors with a 100-fold selectivity towards Plk1 over Plk2-4 and several cell cycle kinases. It also satisfies the Lipinski's criteria of drug-like molecules and passes the other ADMET filters. This triazole compound with aryl substituent belongs to a novel class of potential inhibitor for Plk1. The suggested potential lead molecule can thus be tested and developed further as a potent and selective anti-cancer drug.

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PMID: 24879322 [PubMed - in process]

58: Kotnis A, Mulherkar R. Novel inhibitor of DNA ligase IV with a promising cancer therapeutic potential. *J Biosci.* 2014 Jun;39(3):339-40. PubMed PMID: 24845497.

PMID: 24845497 [PubMed - in process]

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PMCID: PMC4022917 [Available on 2015/6/1]

PMID: 24839371 [PubMed]

60: Gajendra S, Gupta R, Chandgothia M, Kumar L, Gupta R, Chavan SM. Chronic Neutrophilic Leukemia with V617F JAK2 Mutation. *Indian J Hematol Blood Transfus.* 2014 Jun;30(2):139-42. doi: 10.1007/s12288-012-0203-6. Epub 2012 Oct 25. PubMed PMID: 24839370; PubMed Central PMCID: PMC4022913.

Chronic neutrophilic leukemia (CNL) is a rare disease grouped under World health organization classification as chronic myeloproliferative disease. It is a diagnosis of exclusion in patients with sustained mature neutrophilia and splenomegaly with no evidence of other myeloproliferative disease or reactive neutrophilia. V617F JAK 2 mutation has been described in classical myeloproliferative diseases, but its association with CNL has been reported in a few cases. Here in, we describe three cases of CNL with presence of V617F JAK 2 mutation. To distinguish CNL from secondary neutrophilia can be difficult. Detection of the V617F JAK 2 mutation in such scenario can provide a useful diagnostic test to establish the neoplastic nature of the neutrophilia.

PMCID: PMC4022913 [Available on 2015/6/1]

PMID: 24839370 [PubMed]

61: Dutta S, Saxena R. The Expression Pattern of CD33 Antigen Can Differentiate Leukemic from Normal Progenitor Cells in Acute Myeloid Leukemia. *Indian J Hematol Blood Transfus.* 2014 Jun;30(2):130-4. doi: 10.1007/s12288-013-0317-5. Epub 2014 Jan 22. PubMed PMID: 24839368; PubMed Central PMCID: PMC4022910.

Leukemic stem cells (LSC) in acute myeloid leukemia (AML), defined by CD34 and CD38 antigens also express CD33 similar to normal hematopoietic stem cells. Residual LSC are believed to be responsible for relapse in AML after chemotherapy. Leukemic progenitor cell compartments were defined by CD34 and CD38 expression by flow cytometry in 61 new cases of AML. In each of four compartments thus defined, CD34+CD38-, CD34+CD38+, CD34-CD38- and CD34-CD38+, the pattern and intensity of expression of CD33 were studied in comparison to similar progenitor cell compartments in normal bone marrow and peripheral blood stem cell harvests. Post induction bone marrow samples from 10/61 cases were studied for aberrant CD33 expression. The intensity and pattern of expression of CD33 in AML progenitor cells were significantly different compared to normal progenitor cells. In two cases who were in morphological remission post induction, aberrant CD33 expressing progenitor cells were detectable at a frequency of 1.6 and 0.5 % respectively in the bone marrow. Aberrant CD33 expression in bone marrow LSC identified as CD34+CD38- cells in the CD45 dim/low side scatter region on flow cytometry may be useful as minimal residual disease marker after AML therapy. The

method involves the use of a limited number of reagents and can be applied to all cases of AML.

PMCID: PMC4022910 [Available on 2015/6/1]

PMID: 24839368 [PubMed]

62: Kumar Kakkar A, Dahiya N. The evolving drug development landscape: from blockbusters to niche busters in the orphan drug space. *Drug Dev Res.* 2014 Jun;75(4):231-4. doi: 10.1002/ddr.21176. Epub 2014 May 14. PubMed PMID: 24829189.

Strategy, Management and Health Policy Large pharmaceutical companies have traditionally focused on the development of blockbuster drugs that target disease states with large patient populations. However, with large-scale patent expirations and competition from generics and biosimilars, anemic pipelines, escalating clinical trial costs, and global health-care reform, the blockbuster model has become less viable. Orphan drug initiatives and the incentives accompanied by these have fostered renewed research efforts in the area of rare diseases and have led to the approval of more than 400 orphan products. Despite targeting much smaller patient populations, the revenue-generating potential of orphan drugs has been shown to be huge, with a greater return on investment than non-orphan drugs. The success of these "niche buster" therapeutics has led to a renewed interest from "Big Pharma" in the rare disease landscape. This article reviews the key drivers for orphan drug research and development, their profitability, and issues surrounding the emergence of large pharmaceutical firms into the orphan drug space.

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PMID: 24829189 [PubMed - in process]

63: Borle AP, Chhabra A, Subramaniam R, Rewari V, Sinha R, Ramachandran R, Kumar R, Seth A. Analgesic Efficacy of Paravertebral Bupivacaine During Percutaneous Nephrolithotomy: An Observer Blinded, Randomized Controlled Trial. *J Endourol.* 2014 Jun 23. [Epub ahead of print] PubMed PMID: 24828850.

Abstract Background and Purpose: A unilateral paravertebral (PVB) block with catheter can provide extendable analgesia without physiological changes. The objective of this study was to assess the efficacy of PVB bupivacaine for providing perioperative pain relief in adults undergoing percutaneous nephrolithotomy (PCNL) under general anesthesia. **Methods:** Fifty American Society of Anesthesiologists Grade I, II patients, aged 18 to 65 years, were included in this prospective, randomized, controlled, observer blinded trial. PVB group patients received preinduction 20mL of 0.5% bupivacaine in the T9-10 paravertebral space and a catheter in addition to general anesthesia. Control group patients received only general anesthesia. All patients received intravenous fentanyl (2µg/kg on induction, 0.5µg/kg on 20% increase in heart rate or mean blood pressure) and paracetamol every 6 hours. Postoperative pain was assessed using the visual analog scale (VAS) (0-10 cm) at rest and movement by a blinded observer at 0, 1, 2, 4, 6, 12, and 24 hours postoperatively. **Results:** Data of 48 patients were analyzed. Intraoperative fentanyl requirement was higher in the control group (2.74±0.75µg/kg [95 % confidence interval (CI) 2.42, 3.05]) than the PVB group (2.07±0.26µg/kg [95 % CI 1.96, 2.18]), (P=0.0001). Time to first postoperative analgesic requirement was longer in the PVB group (120min [30-570]) than the control group (30min [0-180]), (P=0.0000). The VAS on rest (0, 1, 2, and 12h) and movement (all time points) were significantly lower in the PVB group. Postoperative fentanyl consumption was lower in this group (175µg [25-475]) compared with the control group

(525µg[(150-1275)]), (P=0.0000). Conclusions: Unilateral PVB block with catheter provided effective perioperative analgesia for PCNL.

PMID: 24828850 [PubMed - as supplied by publisher]

64: Shukla G, Gupta A, Pandey RM, Kalaivani M, Goyal V, Srivastava A, Behari M. What features differentiate unilateral from bilateral restless legs syndrome? A comparative observational study of 195 patients. *Sleep Med.* 2014 Jun;15(6):714-9. doi: 10.1016/j.sleep.2014.01.025. Epub 2014 Mar 27. PubMed PMID: 24813392.

OBJECTIVE: Restless legs syndrome (RLS) is frequently misdiagnosed, mainly due to variability in the description of symptoms by patients. We observed some patients with classical RLS manifesting symptoms involving limbs on one side. This study was planned to evaluate various clinical and investigational parameters which might differentiate the profile of patients with unilateral versus bilateral RLS.

METHODS: All patients diagnosed with RLS during an eight-year period, attending the Sleep Disorders Clinic, All India Institute of Medical Sciences, were studied. Clinical assessment was carried out from a pre-structured proforma, including details of the diagnostic criteria proposed by the International Restless Legs Syndrome Study Group of the National Institutes of Health. A detailed hemogram, serum ferritin, liver and kidney function tests, and nerve conduction studies with sympathetic skin response recording were obtained for all patients. To identify features, which differentiated patients with unilateral RLS versus those with bilateral RLS, various statistical tests of significance were used, as applicable.

RESULTS: Among 195 patients, 161 (69 male, 92 female) with bilateral and 34 (12 male, 22 female) with unilateral RLS (mean age of 42 years \pm 10-14), both with similar age and gender distribution, were enrolled. These could be further subdivided into those with strictly unilateral RLS and those with strictly unilateral onset (n=23), with later involvement of the opposite side, but with persistent asymmetry (n=11). Variables significantly differentiating unilateral from bilateral RLS group were: RLS being secondary versus primary (44% versus 55% in unilateral; 76% versus 23% in bilateral; OR, 4.2; CI, 2-9) and positive family history (36% in bilateral, 11% in unilateral; OR, 2.6; CI, 1.1-8). All other features were similar in both groups.

CONCLUSIONS: Unilateral RLS is not rare (17%) and although similar to bilateral RLS in clinical features, this entity may more often be secondary and less often associated with a positive family history. These differences emerge from exploratory evaluations, however, and would need further confirmation through future studies.

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PMID: 24813392 [PubMed - in process]

65: Khan R, Gupta N, Kumar R, Sharma M, Kumar L, Sharma A. Augmented expression of urokinase plasminogen activator and extracellular matrix proteins associates with multiple myeloma progression. *Clin Exp Metastasis.* 2014 Jun;31(5):585-93. doi: 10.1007/s10585-014-9652-7. Epub 2014 May 8. PubMed PMID: 24807734.

Multiple myeloma (MM) represents a B cell malignancy, characterized by a monoclonal proliferation of malignant plasma cells. Interactions between tumor cells and extracellular matrix (ECM) are of importance for tumor invasion and metastasis. Protein levels of urokinase plasminogen activator (uPA) and fibulin 1, nidogen and laminin in plasma and serum respectively and mRNA levels of these

molecules in peripheral blood mononuclear cells were determined in 80 subjects by using ELISA and quantitative PCR and data was analyzed with severity of disease. Pearson correlation was determined to observe interrelationship between different molecules. A statistical significant increase for ECM proteins (laminin, nidogen and fibulin 1) and uPA at circulatory level as well as at mRNA level was observed compared to healthy controls. The levels of these molecules in serum might be utilized as a marker of active disease. Significant positive correlation of all ECM proteins with uPA was found and data also correlates with severity of disease. Strong association found between ECM proteins and uPA in this study supports that there might be interplay between these molecules which can be targeted. This study on these molecules may help to gain insight into processes of growth, spread, and clinical behavior of MM.

PMID: 24807734 [PubMed - indexed for MEDLINE]

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Bovine lactoferrin, a 76-kDa glycoprotein (Ala1-Arg689) consists of two similar N- and C-terminal molecular halves with the ability to bind two Fe(3+) ions. The N-terminal half, designated as the N-lobe (Ala1-Arg341) and the C-terminal half designated as the C-lobe (Tyr342-Arg689) have similar iron-binding properties, but the resistant C-lobe prolongs the physiological role of bovine lactoferrin in the digestive tract. Here, we report the crystal structure of true C-lobe, which was produced by limited proteolysis of bovine lactoferrin using trypsin. In the first proteolysis step, two fragments of 21 kDa (Glu86-Lys282) and 45 kDa (Ser283-Arg689) were generated because two lysine residues, Lys85 and Lys282, in the structure of iron-saturated bovine lactoferrin were fully exposed. The 45-kDa fragment was further digested at the newly exposed side chain of Arg341, generating a 38-kDa perfect C-lobe (Tyr342-Arg689). By contrast, the apo-lactoferrin was cut by trypsin only at Arg341, which was exposed in the structure of apo-lactoferrin, whereas the other two sites with Lys85 and Lys282 are inaccessible. The purified iron-saturated C-lobe was crystallized at pH 4.0. The structure was determined by the molecular replacement method using coordinates of the C-terminal half (Arg342-Arg689) of intact camel apo-lactoferrin. The structure determination revealed that the iron atom was absent and the iron-binding cleft was found in a wide-open conformation, whereas in the previously determined structure of iron-saturated C-lobe of bovine lactoferrin, the iron atom was present and the iron-binding site was in the closed confirmation.

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67: Jacob TG, Raghav R, Kumar A, Garg PK, Roy TS. Duration of injury correlates with necrosis in caerulein-induced experimental acute pancreatitis: implications for pathophysiology. *Int J Exp Pathol.* 2014 Jun;95(3):199-208. doi: 10.1111/iepathol.12081. Epub 2014 Apr 25. PubMed PMID: 24761825.

Pancreatic acinar cell necrosis is indicative of severe pancreatitis and the degree of necrosis is an index of its outcome. We studied whether the dose and duration of injury correlates with severity, particularly in terms of necrosis, in caerulein-induced acute pancreatitis (AP) in Swiss albino mice. In addition to control group 1 (G1), groups 2 and 3 received four injections of caerulein every

hour but were sacrificed at five hours (G2) and nine hours (G3) respectively, and group 4 received eight injections and was sacrificed at nine hours (G4). The severity of pancreatitis was assessed histopathologically and biochemically. The histopathological scores of pancreatitis in groups 3 and 4 were significantly higher than in groups 1 and 2 (4 vs. 1, 4 vs. 2, 3 vs. 1, 3 vs. 2; $P < 0.05$). TUNEL-positive apoptotic cells were significantly higher in groups 2 and 3 compared with groups 1 and 4 ($P < 0.05$). Necrosis was significantly more in group 4 than other groups (37.49% (4.68) vs. 19.97% (1.60) in G2; 20.36% (1.56) in G3; $P = 0.006$ for G 2 vs. 4 and $P = 0.019$ for G 3 vs. 4). Electron microscopy revealed numerous autophagosomes in groups 2 and 3 and mitochondrial damage and necrosis in group 4. The pancreatic and pulmonary myeloperoxidase activity in group 4 was significantly higher than that in the other groups ($P < 0.01$). Hence, severity of pancreatitis is a function of the dose of injurious agent, while inflammation is both dose and duration dependent, which may also explain the wide spectrum of severity of AP seen in clinical practice.

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PMID: 24761825 [PubMed - indexed for MEDLINE]

68: Kapil U, Jain V, Kabra M, Pandey RM, Sareen N, Khenduja P. Prevalence of neonatal hypothyroidism in Kangra Valley, Himachal Pradesh. *Eur J Clin Nutr.* 2014 Jun;68(6):748-9. doi: 10.1038/ejcn.2014.71. Epub 2014 Apr 23. PubMed PMID: 24755928.

Iodine deficiency (ID) is an endemic health problem in Kangra District, Himachal Pradesh (HP). ID in pregnant mothers leads to neonatal hypothyroidism (NH), mental retardation, deaf mutism, squint, dwarfism, spastic dysplasia, neurological defects and congenital anomalies. NH can be assessed by estimating the thyroid stimulating hormone (TSH) in cord blood samples. The present study was conducted with an objective to assess the prevalence of NH in district Kangra, HP. In district Kangra, all the hospitals providing obstetric services were enlisted. Three hospitals conducting more than 100 deliveries per year were selected randomly. A total of 613 umbilical cord blood samples of neonates were collected on filter papers and analyzed for TSH. TSH was estimated by enzyme-linked immunosorbent assay method. Neonates with TSH levels ≥ 20 mIU/l were recalled for reassessment of TSH for confirmation of NH. Prevalence of NH was found to be 4.4%. This finding suggests the need for the implementation of a neonatal screening program for early detection of children with ID.

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Comment in

Reprod Biomed Online. 2014 Jun;28(6):661-2.

The purpose of this study was to evaluate the role of dehydroepiandrosterone (DHEA) on the number and quality of oocytes and embryos in poor responders undergoing IVF cycles. A total of 50 patients with a history of poor ovarian response in the previous cycle(s) were enrolled in a prospective cohort study. They were treated with oral micronized DHEA 25mg three times a day for 4 months. Oocyte and embryo number and quality were recorded before and after treatment. The results were analysed using Student's paired t-test. After treatment with DHEA, a significant increase in number of mature follicles was seen in the post treatment period (\square 35 years $P < 0.001$; \square 36 years $P = 0.002$). There were significant increases in numbers of oocytes retrieved, fertilization rates and, consequently, the total number of embryos available. More embryos were vitrified among patients \square 35 years ($P < 0.001$) post treatment, and clinical pregnancy rate in this group was 26.7%. DHEA treatment resulted in a higher number of oocytes retrieved, oocytes fertilized, embryos overall and of grade-I embryos. It can help in increasing pregnancy rate in poor responders. This study was performed to evaluate the role of dehydroepiandrosterone (DHEA) treatment on the number and quality of oocytes and embryos in poor responders undergoing IVF cycles. Fifty patients with a history of poor ovarian response in the previous cycle(s) were enrolled in the study and a prospective cohort study was performed. Patients were prescribed oral micronized DHEA 25mg three times a day for 4 months. Oocytes and embryos in terms of both number and quality were measured before and after treatment. A significant increase in mean number of mature follicles was seen in the post-treatment group. There was a significant increase in the number of oocytes retrieved, fertilization rates and, consequently, in the total number of embryos available after treatment with DHEA. More embryos were vitrified post treatment and the overall pregnancy rate was 20%. DHEA resulted in a significant improvement in the numbers of oocytes retrieved, oocytes fertilized, embryos and grade-I embryos. DHEA can help improve pregnancy rate in poor responders with history of previous failed IVF cycles.

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PMID: 24745834 [PubMed - in process]

71: Kumar M, Gupta D, Singh G, Sharma S, Bhat M, Prashant CK, Dinda AK, Kharbanda S, Kufe D, Singh H. Novel polymeric nanoparticles for intracellular delivery of peptide Cargos: antitumor efficacy of the BCL-2 conversion peptide NuBCP-9. *Cancer Res.* 2014 Jun 15;74(12):3271-81. doi: 10.1158/0008-5472.CAN-13-2015. Epub 2014 Apr 16. PubMed PMID: 24741005; PubMed Central PMCID: PMC4089982.

The preclinical development of peptidyl drugs for cancer treatment is hampered by their poor pharmacologic properties and cell penetrative capabilities in vivo. In this study, we report a nanoparticle-based formulation that overcomes these limitations, illustrating their utility in studies of the anticancer peptide NuBCP-9, which converts BCL-2 from a cell protector to a cell killer. NuBCP-9 was encapsulated in polymeric nanoparticles composed of a polyethylene glycol (PEG)-modified polylactic acid (PLA) diblock copolymer (NuBCP-9/PLA-PEG) or PEG-polypropylene glycol-PEG-modified PLA-tetrablock copolymer (NuBCP-9/PLA-PEG-PPG-PEG). We found that peptide encapsulation was enhanced by increasing the PEG chain length in the block copolymers. NuBCP-9 release from the nanoparticles was controlled by both PEG chain length and the PLA molecular weight, permitting time-release over sustained periods. Treatment of human cancer cells with these nanoparticles in vitro triggered apoptosis by NuBCP-9-mediated mechanism, with a potency similar to NuBCP-9 linked to a cell-penetrating poly-Arg peptide. Strikingly, in vivo administration of NuBCP-9/nanoparticles

triggered complete regressions in the Ehrlich syngeneic mouse model of solid tumor. Our results illustrate an effective method for sustained delivery of anticancer peptides, highlighting the superior qualities of the novel PLA-PEG-PPG-PEG tetrablock copolymer formulation as a tool to target intracellular proteins.

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72: Kumar V, Nag TC, Sharma U, Jagannathan NR, Wadhwa S. Differential effects of prenatal chronic high-decibel noise and music exposure on the excitatory and inhibitory synaptic components of the auditory cortex analog in developing chicks (*Gallus gallus domesticus*). *Neuroscience*. 2014 Jun 6;269:302-17. doi: 10.1016/j.neuroscience.2014.03.061. Epub 2014 Apr 8. PubMed PMID: 24721732.

Proper development of the auditory cortex depends on early acoustic experience that modulates the balance between excitatory and inhibitory (E/I) circuits. In the present social and occupational environment exposure to chronic loud sound in the form of occupational or recreational noise, is becoming inevitable. This could especially disrupt the functional auditory cortex development leading to altered processing of complex sound and hearing impairment. Here we report the effects of prenatal chronic loud sound (110-dB sound pressure level (SPL)) exposure (rhythmic [music] and arrhythmic [noise] forms) on the molecular components involved in regulation of the E/I balance in the developing auditory cortex analog/Field L (AuL) in domestic chicks. Noise exposure at 110-dB SPL significantly enhanced the E/I ratio (increased expression of AMPA receptor GluR2 subunit and glutamate with decreased expression of GABA(A) receptor gamma 2 subunit and GABA), whereas loud music exposure maintained the E/I ratio. Expressions of markers of synaptogenesis, synaptic stability and plasticity i.e., synaptophysin, PSD-95 and gephyrin were reduced with noise but increased with music exposure. Thus our results showed differential effects of prenatal chronic loud noise and music exposures on the E/I balance and synaptic function and stability in the developing auditory cortex. Loud music exposure showed an overall enrichment effect whereas loud noise-induced significant alterations in E/I balance could later impact the auditory function and associated cognitive behavior.

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74: Chakraborti S, Nag TC, Das D, Sanyal Chatterjee T, De SK. Cytokeratin localization in toe pads of the anuran amphibian *Philautus annandalii* (Boulenger, 1906). *Tissue Cell*. 2014 Jun;46(3):165-9. doi: 10.1016/j.tice.2014.03.001. Epub 2014 Mar 18. PubMed PMID: 24698093.

We have examined cytokeratin distribution and their nature in toe pads of the Himalayan tree-frog *Philautus annandalii*. Toe pads are expanded tips of digits and show modifications of their ventral epidermis for adhesion. The toe pad epidermal cells, being organized into 3-4 rows, possess keratin bundles, especially in surface nanostructures that are involved in adhesion. Immunohistochemical localization using a pan-cytokeratin antibody revealed that cytokeratin immunoreactivity is the strongest in the mid- to basal cell rows of the epidermis, which parallels our previous ultrastructural observation of dense keratin bundles present in this part of the epidermis. The remainder of the epidermis (i.e., the superficial cell layer) showed little immunoreactivity. Immunoblot analysis revealed that toe-pads possessed keratins prominently in the molecular mass of 50 kDa. Possible presence of keratin 5 in toe pad epidermis has been correlated with its usual distribution pattern in mammalian epidermis.

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PMID: 24698093 [PubMed - in process]

75: Dubey R, Chakrabarty B, Gulati S, Sharma MC, Deopujari S, Baheti N, Santosh V, Pai G, Kabra M. Leukodystrophy presenting as acute-onset polyradiculoneuropathy. *Pediatr Neurol*. 2014 Jun;50(6):616-8. doi: 10.1016/j.pediatrneurol.2014.01.028. Epub 2014 Jan 16. PubMed PMID: 24685010.

BACKGROUND: Sulfatides, the most abundant glycosphingolipids, are a major component of myelin. They are degraded by the combined action of sphingolipid activator protein and arylsulfatase A. Deficiency of either of these entities causes metachromatic leukodystrophy (MLD). On the basis of age of onset, this entity is divided into late infantile, juvenile, and adult subtypes. Late infantile form, the commonest subtype, can exhibit peripheral neuropathy as the initial manifestation. The other two forms usually manifest peripheral neuropathy later in the disease course.

PATIENT: A 1.5-year-old girl with preexisting isolated motor delay presented with acute-onset ascending flaccid quadriparesis, ptosis, and respiratory failure. Ptosis and respiratory failure responded completely to intravenous immunoglobulin, whereas quadriparesis showed minimal improvement. Nerve biopsy revealed metachromatic granules with demyelination, and serum arylsulfatase A levels were undetectable.

CONCLUSION: The severity and nature of the disease coupled with the response to immunotherapy makes this case unusual. This child may represent either an atypical presentation of MLD with coincidental response to immunotherapy or an episode of immune mediated neuropathy in an individual with already diseased nerves due to MLD.

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PMID: 24685010 [PubMed - in process]

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77: Rufai SB, Kumar P, Singh A, Prajapati S, Balooni V, Singh S. Comparison of Xpert MTB/RIF with line probe assay for detection of rifampin-mono-resistant

Mycobacterium tuberculosis. J Clin Microbiol. 2014 Jun;52(6):1846-52. doi: 10.1128/JCM.03005-13. Epub 2014 Mar 19. PubMed PMID: 24648554; PubMed Central PMCID: PMC4042801.

The MTBDRplus line probe assay (LPA) and Xpert MTB/RIF have been endorsed by the World Health Organization for the rapid diagnosis of drug-resistant tuberculosis. However, there is no clarity regarding the superiority of one over the other. In a double-blinded prospective study, we evaluated the efficacy of the Xpert MTB/RIF on samples that were first tested by LPA under the revised national tuberculosis control program of India. A total of 405 sputum samples from suspected drug-resistant tuberculosis patients were included. Of these, 285 smear-positive samples were subjected to LPA. Seventy-two (25.8%) samples showed multidrug resistance, 62 (22.2%) showed rifampin mono-resistance, 29 (10.3%) showed isoniazid mono-resistance, and 116 (41.5%) were pan-susceptible. Six (2.1%) of the samples gave invalid results. Of the 62 rifampin-mono-resistant samples by LPA, 38 (61.4%) showed rifampin resistance, while 21 (33.8%) were found susceptible to rifampin by Xpert MTB/RIF using cartridge version G4. Three (4.8%) samples gave an error. Of the 116 pan-susceptible samples, only 83 were available for Xpert MTB/RIF testing; 4 (5.1%) were rifampin resistant, 74 (94.8%) were susceptible, and 5 (6.0%) showed an error. The 25 discrepant samples were further subjected to MGIT960 drug susceptibility testing. The MGIT960 results showed 100% agreement with LPA results but only 64.4% agreement with Xpert MTB/RIF results. Sequencing analysis of discrepant samples showed 91.3% concordance with LPA but only 8.7% concordance with the Xpert MTB/RIF assay. These findings indicate that by using Xpert MTB/RIF testing we might be underestimating the burden of drug-resistant tuberculosis and indicate that country-specific probes need to be designed to increase the sensitivity of the Xpert MTB/RIF.

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PMCID: PMC4042801 [Available on 2014/12/1]
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78: Khatua B, Van Vleet J, Choudhury BP, Chaudhry R, Mandal C. Sialylation of outer membrane porin protein D: a mechanistic basis of antibiotic uptake in *Pseudomonas aeruginosa*. Mol Cell Proteomics. 2014 Jun;13(6):1412-28. doi: 10.1074/mcp.M113.030999. Epub 2014 Mar 18. PubMed PMID: 24643970; PubMed Central PMCID: PMC4047463.

Pseudomonas aeruginosa (PA) is an environmentally ubiquitous, extracellular, opportunistic pathogen, associated with severe infections of immune-compromised host. We demonstrated earlier the presence of both α 2,3- and α 2,6-linked sialic acids (Sias) on PA (PA(+Sias)) and normal human serum is their source of Sias. PA(+Sias) showed decreased complement deposition and exhibited enhanced association with immune-cells through sialic acid binding immunoglobulin like lectins (Siglecs). Such Sias-siglec-9 interaction between PA(+Sias) and neutrophils helped to subvert host immunity. Additionally, PA(+Sias) showed more resistant to β -lactam antibiotics as reflected in their minimum inhibitory concentration required to inhibit the growth of 50% than PA(-Sias). Accordingly, we have affinity purified sialoglycoproteins of PA(+Sias). They were electrophoresed and identified by matrix-assisted laser desorption-ionization time-of-flight/time-of-flight mass spectrometry analysis. Sequence study indicated the presence of a few α 2,6-linked, α 2,3-linked, and both α 2,3- and α 2,6-linked sialylated proteins in PA. The outer membrane porin protein D (OprD), a specialized channel-forming protein, responsible for uptake of β -lactam antibiotics, is one such identified sialoglycoprotein. Accordingly, sialylated (OprD(+Sias)) and non-sialylated (OprD(-Sias)) porin proteins were separately purified by using anion exchange chromatography. Sialylation of purified OprD(+Sias) was confirmed by several analytical and biochemical procedures.

Profiling of glycan structures revealed three sialylated N-glycans and two sialylated O-glycans in OprD(+Sias). In contrast, OprD(-Sias) exhibit only one sialylated N-glycans. OprD(-Sias) interacts with β -lactam antibiotics more than OprD(+Sias) as demonstrated by surface plasmon resonance study. Lyposome-swelling assay further exhibited that antibiotics have more capability to penetrate through OprD(-Sias) purified from four clinical isolates of PA. Taken together, it may be envisaged that sialic acids on OprD protein play important role toward the uptake of commonly used antibiotics in PA(+Sias). This might be one of the new mechanisms of PA for β -lactam antibiotic uptake.

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PMCID: PMC4047463 [Available on 2015/6/1]

PMID: 24643970 [PubMed - in process]

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Epithelioid angiomyolipoma (EAML) is a rare variant of angiomyolipoma found to have malignant potential and poorer prognosis. It is characterized by the predominance of epithelioid cells and frequent association with tuberous sclerosis. Its usual age of presentation is between the fourth and fifth decades of life, and only a single case has been reported in the pediatric age group. In this study, we report a case of epithelioid angiomyolipoma in a 4-year-old child with features of tuberous sclerosis, which is the youngest age of presentation.

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PMID: 24612755 [PubMed - indexed for MEDLINE]

80: Talwar S, Kumar MV, Choudhary SK, Airan B. Conventional versus adjustable pulmonary artery banding: which is preferable? *Interact Cardiovasc Thorac Surg*. 2014 Jun;18(6):838-41. doi: 10.1093/icvts/ivu027. Epub 2014 Mar 6. PubMed PMID: 24608732.

A best evidence topic in cardiac surgery was written according to a structured protocol. The question addressed was 'whether conventional pulmonary artery banding (PAB) or adjustable PAB might be the superior intervention?' Using the PubMed search, 51 papers were found, of which seven papers represented the best evidence to answer the clinical question. We included only those papers that actually compared conventional PAB with adjustable PAB, and excluded those that studied only one of these interventions. Four studies qualified (one prospective and three retrospective) and analysed data in human patients, while three were experimental studies in animals. The end points in the prospective human study were death, debanding and follow-up to intracardiac repair. The three retrospective studies compared the incidence of early deaths, inotropic support, need for mechanical ventilatory support, reoperations and intensive care unit and hospital stay. Out of the four studies in humans, three studies noted a significant reduction in early deaths from 23 to 1.8%, 77 to 0% and 15 to 0% in conventional vs adjustable PAB. Need for early reoperations reduced from 18 to 3.5% and from 35 to 0% in 2 studies. Similarly, there was a reduction in the ventilatory times and the intensive care unit and hospital stay. The three experimental animal studies demonstrated that a much more reliable preparation of the ventricle was achieved with the use of an adjustable PAB. The results of all the seven studies led us to conclude that adjustable PAB provides superior early outcomes; reduces early mortality, need for inotropes and need for reintervention; and provides equivalent or superior band gradients when compared

to conventional PAB. The use of the adjustable PAB was found to result in significant haemodynamic improvement by progressively reducing the pulmonary artery pressures and left-to-right shunt. The adjustable PAB was found to improve early survival and also made delayed repair feasible in a better clinical state, with reduced mortality and morbidity.

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PMID: 24608732 [PubMed - in process]

81: Malankar D, Nair VV, Gupta SK, Das S, Airan B. Severe mitral regurgitation after intracardiac repair of tetralogy of Fallot: a rare complication and management. *Interact Cardiovasc Thorac Surg*. 2014 Jun;18(6):842-3. doi: 10.1093/icvts/ivu028. Epub 2014 Mar 2. PubMed PMID: 24591398.

Tetralogy of Fallot (TOF) with additional ventricular septal defect (VSD) forms a difficult surgical subset. Commonly, additional VSD is in the muscular septum and direct visualization may be difficult during surgical repair especially in arrested heart. Consequently, direct closure of these defects is performed based upon preoperative imaging and/or intraoperative transoesophageal echocardiogram. We hereby report an unforeseen occurrence of traumatic acute severe mitral regurgitation after TOF repair possibly during closure of additional muscular VSD. We discuss the possible mechanism of this unprecedented complication, which was promptly diagnosed and managed with good surgical outcomes.

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PMID: 24591398 [PubMed - in process]

82: Tripathy S, Mishra JC, Dash SC. Critically ill elderly patients in a developing world--mortality and functional outcome at 1 year: a prospective single-center study. *J Crit Care*. 2014 Jun;29(3):474.e7-13. doi: 10.1016/j.jcrc.2014.01.007. Epub 2014 Jan 13. PubMed PMID: 24581949.

PURPOSE: To study the mortality and outcome of critically ill elderly patients in a developing country with focus on nutritional and socioeconomic status.

METHODS: A prospective study of 109 patients (215 screened) admitted consecutively to the intensive care unit from 2011 to 2012. Demographics, Acute Physiology and Chronic Health Evaluation (APACHE) II score, mechanical ventilation, Malnutrition Universal Screening Tool score, socioeconomic category, functional status, delirium, and length of stay were recorded. Telephonic assessment of outcome was done at 1 year. Appropriate statistical tests compared differences between subgroups. Multivariate analysis was performed on significant variables ($P < .1$) affecting mortality.

RESULTS: At 12 months after discharge, 46.8% of patients (mean age, 76.5±9.6 years; APACHEII, 22.7±6.4; and intensive care unit stay, 7.8±3.4 days) had died. Risk factors for mortality at 12 months were APACHE II score ($P < .001$; odds ratio [OR], 1.2; 95% confidence interval [CI], 1.1-1.3), severe malnutrition ($P = .006$; OR, 0.08; 95% CI, 0.01-0.48), and delirium ($P = .03$; OR, 0.32; 95% CI, 0.11-0.9). Risk factors for short-term mortality (at 28 days) were APACHE II score ($P = .02$; OR, 1.1 [1.0-1.2]) and pre-morbid functional status ($P = .03$; OR, 0.2 [0.1-0.8]). Kaplan-Meier survival analysis showed a significant association with malnutrition (log-rank test, $P = .012$) but not with socioeconomic category. Most (72%) of the survivors had a favorable functional status.

CONCLUSIONS: Malnutrition, delirium, and APACHEII were risk factors for long-term mortality. Survivors had a good functional outcome. Appropriate quality of life

tools for this population need to be developed.

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PMID: 24581949 [PubMed - in process]

83: Bhatt SP, Misra A, Sharma M, Guleria R, Pandey RM, Luthra K, Vikram NK. Vitamin D insufficiency is associated with abdominal obesity in urban Asian Indians without diabetes in North India. *Diabetes Technol Ther*. 2014 Jun;16(6):392-7. doi: 10.1089/dia.2013.0303. Epub 2014 Feb 14. PubMed PMID: 24528222; PubMed Central PMCID: PMC4029135.

OBJECTIVE: We evaluated the associations of serum 25-hydroxyvitamin D [25(OH) D] levels with clinical, biochemical, and anthropometric profiles and total abdominal adipose tissue (TAAT), subcutaneous abdominal adipose tissue (SCAT), and intraabdominal adipose tissue (IAAT) depots in Asian Indians without diabetes residing in north India.

SUBJECTS AND METHODS: In this cross-sectional study (n=137; 74 males and 63 females; 18-60 years of age), anthropometric (body mass index, waist and hip circumferences, and skinfold thickness at four sites) and biochemical (fasting plasma glucose, lipid profile, and fasting insulin levels) assessments were done. Measurement of percentage body fat was done by dual energy x-ray absorptiometry, and areas of TAAT, SCAT and IAAT were measured at the L2-L3 intervertebral level by single-slice magnetic resonance imaging. Levels of 25(OH) D were measured by radioimmunoassay. Correlation analysis was used to assess relationships among clinical, biochemical, and anthropometric profiles, areas of TAAT, SCAT, and IAAT, and 25(OH) D levels.

RESULTS: The mean concentration of 25(OH) D was 40.5 ± 8.6 ng/mL. Overall, 6.6% had vitamin D deficiency (<10 ng/mL), 87.6% had insufficiency (<30 ng/mL), and 5.8% had a sufficient level (>30 ng/mL). Levels of 25(OH) D did not correlate with demographic, biochemical, and anthropometric profiles or with abdominal fat depots (TAAT, SCAT, and IAAT). In the correlation regression model, 25(OH) D was associated with TAAT in obese subjects.

CONCLUSIONS: In obese urban Asian Indians without diabetes, higher values of total abdominal fat at the L2-L3 intervertebral level were associated with low 25(OH) D levels.

PMCID: PMC4029135 [Available on 2015/6/1]

PMID: 24528222 [PubMed - in process]

84: Bansal S, Suri A, Singh M, Kale SS, Agarwal D, Sharma MS, Mahapatra AK, Sharma BS. Cavernous sinus hemangioma: a fourteen year single institution experience. *J Clin Neurosci*. 2014 Jun;21(6):968-74. doi: 10.1016/j.jocn.2013.09.008. Epub 2013 Nov 6. PubMed PMID: 24524951.

Cavernous sinus hemangioma (CSH) is a rare extra-axial vascular neoplasm that accounts for 2% to 3% of all cavernous sinus tumors. Their location, propensity for profuse bleeding during surgery, and relationship to complex neurovascular structures are factors which present difficulty in excising these lesions. The authors describe their experience of 22 patients with CSH over 14 years at a tertiary care center. Patients were managed with microsurgical resection using a purely extradural transcavernous approach (13 patients) and with Gamma Knife radiosurgery (GKRS; Elekta AB, Stockholm, Sweden) (nine patients). Retrospective data analysis found headache and visual impairment were the most common presenting complaints, followed by facial hypesthesia and diplopia. All but one patient had complete tumor excision in the surgical series. Transient ophthalmoparesis (complete resolution in 6-8 weeks) was the most common surgical

complication. In the GKRS group, marked tumor shrinkage (>50% tumor volume reduction) was achieved in two patients, slight shrinkage in five and no change in two patients, with symptom improvement in the majority of patients. To our knowledge, we describe one of the largest series of CSH managed at a single center. Although microsurgical resection using an extradural transcavernous approach is considered the treatment of choice in CSH and allows complete excision with minimal mortality and long-term morbidity, GKRS is an additional tool for treating residual symptomatic lesions or in patients with associated comorbidities making surgical resection unsuitable.

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PMID: 24524951 [PubMed - in process]

85: Behera C, Rani A, Pradhan M, Dikshit PC. Fatal corrosive attack: a study of 13 cases from central Delhi, India. *Am J Forensic Med Pathol*. 2014 Jun;35(2):109-12. doi: 10.1097/PAF.000000000000071. PubMed PMID: 24457574.

The present study is a retrospective analysis of 13 cases of deaths, which resulted from throwing of corrosives over the body. The cases were autopsied at the Department of Forensic Medicine, Maulana Azad Medical College & Associated Hospitals, Delhi, India, during a period of 13 years from July 1998 to June 2011. The cases represented approximately 0.1% of all autopsy cases during the same period. Data were analyzed with regard to the age, sex, place of occurrence, pattern of injury, survival period, and cause of death. Of these cases, 8 (61.54%) were male, and 5 (38.46%) were female. The most common age group of the victim was 21 to 30 years (46.15%). Six of the victims were attacked on the road side. Face and thorax were involved in all cases (100%). The average total body surface area of burn was 56.69%. The mean survival period was 28.2 days. In 53.85% of cases, the cause of death was septicemia.

PMID: 24457574 [PubMed - in process]

86: Sharma P, Jain S, Karunanithi S, Pal S, Julka PK, Thulkar S, Malhotra A, Bal C, Kumar R. Diagnostic accuracy of ^{18}F -FDG PET/CT for detection of suspected recurrence in patients with oesophageal carcinoma. *Eur J Nucl Med Mol Imaging*. 2014 Jun;41(6):1084-92. doi: 10.1007/s00259-013-2664-8. Epub 2014 Jan 17. PubMed PMID: 24435775.

PURPOSE: To evaluate the role of $(^{18}\text{F})\text{-FDG}$ PET/CT in the detection of recurrence in patients with oesophageal carcinoma, suspected clinically or following conventional investigations.

METHODS: This was a retrospective study. Data from 180 patients (age 56.3 ± 10.4 years; 126 men, 54 women) with histopathologically proven oesophageal carcinoma (squamous cell 115, adenocarcinoma 59, neuroendocrine carcinoma 4, small cell 1, poorly differentiated 1) who had undergone 227 $(^{18}\text{F})\text{-FDG}$ PET/CT studies for suspected recurrence were analysed. Recurrence was suspected clinically or following conventional investigations. PET/CT images were reevaluated by two nuclear medicine physicians in consensus. Findings were grouped into local, nodal and distant recurrence. Results were compared to those from contrast-enhanced (CE) CT when available (109 patients). Clinical/imaging follow-up (minimum 6 months) with histopathology (when available) was taken as the reference standard. **RESULTS:** Of the 227 $(^{18}\text{F})\text{-FDG}$ PET/CT studies, 166 were positive and 61 were negative for recurrent disease. PET/CT showed local recurrence in 134, nodal recurrence in 115 and distant recurrence in 47, with more than one site of recurrence in 34. The PET/CT findings were true-positive in 153 studies, true-negative in 54, false-positive in 13 and false-negative in 7. The

sensitivity of (18)F-FDG PET/CT was 96%, the specificity was 81%, the positive and negative predictive values were 92% and 89%, respectively, and the accuracy was 91%. PET/CT showed similar accuracy in patients with squamous cell carcinoma and in those with adenocarcinoma ($P=0.181$). (18)F-FDG PET/CT was more specific than CECT (67% vs. 21%; $P<0.0001$). PET/CT was superior to CECT for the detection of nodal recurrence ($P<0.0001$), but not local recurrence ($P=0.093$) or distant metastases ($P=0.441$).

CONCLUSION: (18)F-FDG PET/CT shows high accuracy in the detection of suspected recurrence in patients with oesophageal carcinoma. It is more specific than and is superior to CECT in the detection of nodal recurrence.

PMID: 24435775 [PubMed - in process]

87: Anand D, Kumar U, Kanjilal M, Kaur S, Das N. Leucocyte complement receptor 1 (CR1/CD35) transcript and its correlation with the clinical disease activity in rheumatoid arthritis patients. *Clin Exp Immunol*. 2014 Jun;176(3):327-35. doi: 10.1111/cei.12274. PubMed PMID: 24433281; PubMed Central PMCID: PMC4008976.

In view of the exaggerated complement activation in rheumatoid arthritis (RA) and significance of complement receptor 1 (CR1/CD35) as a complement regulatory protein (CRP), we aimed to determine the leucocyte-complement receptor 1 (L-CR1) transcript levels and the relationship of this protein with the clinical disease activity of RA patients. Sixty-six controls and 45 RA patients were enrolled. L-CR1 transcript levels were correlated with the levels of circulating immune complexes (CIC), C3, C4 and C3d in controls and patients and with disease activity score 28 (DAS28) in patients only. CIC levels were determined by polyethylene glycol (PEG) precipitation, C3 and C4 levels by nephelometry and C3d levels by enzyme-linked immunosorbent assay (ELISA). Eleven patients were recruited for follow-up of L-CR1 and DAS28 levels at weeks 0, 12 and 24. Appropriate statistical methods were used for the data analysis. L-CR1 ($P<0.01$) transcript levels were decreased in patients compared to controls. L-CR1 levels correlated negatively with DAS28, CIC and C3d. DAS28 correlated positively with levels of CIC, C3 and C3d. Levels of CIC correlated positively with C3 and C3d. Levels of C3 correlated positively with C3d in patients and with C4 in both controls and patients. Levels of L-CR1 increased with decline in DAS28 scores in follow-up patients. Observations were statistically significant. Lower levels of L-CR1 transcript in patients compared to controls, their correlations with the levels of CIC, C3d and DAS28 at different time-points in RA patients suggest CR1 as a potential disease marker for RA.

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PMCID: PMC4008976 [Available on 2015/6/1]

PMID: 24433281 [PubMed - indexed for MEDLINE]

88: Das CK, Mirdha BR, Singh S, Seth R, Bagga A, Lodha R, Kabra SK. Use of Induced sputum to determine the prevalence of *Pneumocystis jirovecii* in immunocompromised children with pneumonia. *J Trop Pediatr*. 2014 Jun;60(3):216-22. doi: 10.1093/tropej/fmt112. Epub 2014 Jan 13. PubMed PMID: 24425204.

BACKGROUND: Information on prevalence of *Pneumocystis jirovecii* pneumonia (PCP) in immunocompromised children with pneumonia in Southeast Asia is limited.

METHODS: Immunocompromised children hospitalized with radiographic pneumonia were investigated for PCP by testing induced sputum by using polymerase chain reaction (PCR).

RESULTS: Ninety-four immunocompromised children (mean age 74.5 ± 43.7 months, boys 69) with pneumonia were investigated for PCP. Underlying disease included

solid tumors and hematological malignancy in 57, HIV infection in 14, primary immune deficiency in 11 and other immune deficiency disorders in 12 children. PCR could detect *P. jirovecii* in 14 children. Prevalence of PCP in HIV-infected children was 43% (6 of 14), renal disease on immunosuppressants 45% (4 of 9), primary immune deficiency 19% (2 of 11) and malignancies on chemotherapy 4% (2 of 57). Three of 14 children died from PCP.

CONCLUSIONS: PCP is responsible for pneumonia in 14% of children with underlying immunocompromised state; PCR on induced sputum improves diagnosis.

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PMID: 24425204 [PubMed - in process]

89: Ekka M, Ali I, Aggarwal P, Jamshed N. Cardiac tamponade as initial presenting feature of primary hypothyroidism in the ED. *Am J Emerg Med*. 2014 Jun;32(6):683.e1-3. doi: 10.1016/j.ajem.2013.11.038. Epub 2013 Nov 26. PubMed PMID: 24360319.

Pericardial effusion is commonly detected in patients with severe hypothyroidism and is typically mild; rarely, it may lead to cardiac tamponade. Cardiac tamponade with myxedema coma as initial presenting feature of previously unrecognized hypothyroidism is rare. This case highlights that previously undiagnosed hypothyroidism can manifest as myxedema coma with shock due to pericardial tamponade particularly in winters because a cold environment can precipitate myxedema. We report an undiagnosed case of primary hypothyroidism who presented to the emergency department for the first time with both cardiac tamponade and myxedema coma. This combination of cardiac tamponade and myxedema coma as the presenting features of primary hypothyroidism has rarely been reported in the literature. The patient was effectively managed with echocardiography-guided pericardiocentesis, levothyroxine, and external rewarming. Cardiac tamponade and myxedema coma as presenting features of previously unrecognized primary hypothyroidism are extremely rare. Urgent bedside echocardiography with pericardiocentesis along with thyroxine therapy is the treatment of choice. It is important to include hypothyroidism as the differential diagnosis in patients with cardiac tamponade and altered level of consciousness especially in winter months.

PMID: 24360319 [PubMed - indexed for MEDLINE]

90: Sethi BS, Chauhan S, Bisoi AK, Kapoor PM, Kiran U, Rajput RS. Comparison of a waxy maize and a potato starch-based balanced hydroxyethyl starch for priming in patients undergoing coronary artery bypass grafting. *J Cardiothorac Vasc Anesth*. 2014 Jun;28(3):690-7. doi: 10.1053/j.jvca.2013.06.020. Epub 2013 Oct 19. PubMed PMID: 24144628.

OBJECTIVE: Concerns have been raised about differences in the safety profile of potato- versus waxy maize-derived hydroxyethyl starch (HES). The objective of this study was to compare 2 HES solutions derived from 2 different source materials (potato versus waxy maize) for their dose-related effects on hemostasis and organ function when used to prime the cardiopulmonary bypass circuit (CPB).

DESIGN: A prospective, randomized, controlled study.

SETTING: Tertiary care center.

PARTICIPANTS: Eighty patients undergoing coronary artery bypass grafting (CABG) on CPB.

INTERVENTIONS: For priming the CPB circuit, the HESPRL group received 1000 mL of potato-derived balanced 6% HES 130/0.42 along with 500 mL of Ringer's lactate;

the HESP group received 1,500 mL of potato-derived balanced 6% HES 130/0.42; the HESMRL group received 1000 mL of waxy maize-derived balanced 6% HES 130/0.4 along with 500 mL of Ringer's lactate, and the HESM group received 1500 mL of waxy maize-derived balanced 6% HES 130/0.4.

MEASUREMENTS AND MAIN RESULTS: There were no significant differences in 24-hour mediastinal drainage, rate of re-exploration, blood product usage, coagulation parameters, and measures of pulmonary, renal, and hepatic function with respect to plant source of HES, when equivalent doses were used. Sonoclot activated clotting time (SonACT) was significantly higher and clot rate (CR) significantly lower at end of surgery (T1) and 24 hours after surgery (T2) in the HESP and HESM groups compared with the HESPRL and HESMRL groups. Compared with baseline, CR and platelet function were significantly lower at T1, PaO₂/FIO₂ ratio decreased significantly at T1 and T2, and serum bilirubin and transaminases increased significantly at T2 in all 4 groups.

CONCLUSIONS: There was no significant difference in cumulative 24-hour mediastinal drainage when potato-derived balanced 6% HES 130/0.42 or waxy maize-derived balanced 6% HES 130/0.4 was used to prime the CPB circuit in patients undergoing CABG. In equal doses, both starches exerted the same effect on blood coagulation and pulmonary, renal, and hepatic function.

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PMID: 24144628 [PubMed - in process]

91: Agarwal Gupta N, Kabra M. Diagnosis and management of down syndrome. Indian J Pediatr. 2014 Jun;81(6):560-7. doi: 10.1007/s12098-013-1249-7. Epub 2013 Oct 15. PubMed PMID: 24127006.

Down syndrome is the commonest chromosomal disorder causing mild to moderate intellectual disability, yet it is one of the neglected disorder amongst practicing physicians. Children with Down syndrome when intervened early by speech therapy, physiotherapy and occupational therapy and given proper medical attention for different health issues, can have a better long term outcome as compared to other genetic causes of intellectual disability. This paper would help the general practitioners to identify children with Down syndrome and to manage the common problems associated with this condition.

PMID: 24127006 [PubMed - in process]

92: Karunanithi S, Sharma P, Jain S, Mukherjee A, Kumar R. Iris metastasis in a patient with small cell lung cancer: incidental detection with 18F-FDG PET/CT. Clin Nucl Med. 2014 Jun;39(6):554-5. doi: 10.1097/RLU.0b013e3182a7549f. PubMed PMID: 24097003.

Iris metastasis is one of the rare forms of ocular metastasis. Lung and breast cancers represent more than two thirds of the primary tumor sites in such patients. We here present the F-FDG PET/CT findings in a 60-year-old male patient with small cell lung cancer where metastasis to iris was incidentally discovered on PET/CT.

PMID: 24097003 [PubMed - in process]

93: Verma N, Lodha R. Plasma exchange for hemolytic crisis and acute liver failure in Wilson disease: authors' reply. Indian J Pediatr. 2014 Jun;81(6):634. doi: 10.1007/s12098-013-1184-7. Epub 2013 Aug 31. PubMed PMID: 23996411.

Comment on

Indian J Pediatr. 2014 Jun;81(6):633.

Indian J Pediatr. 2014 May;81(5):498-500.

PMID: 23996411 [PubMed - in process]

94: Jain P, Sehgal R, Kannan L, Kumar A, Gulati S. 'Double midbrain' sign in extensive optic pathway glioma in neurofibromatosis-1. Indian J Pediatr. 2014 Jun;81(6):631-2. doi: 10.1007/s12098-013-1186-5. Epub 2013 Aug 14. PubMed PMID: 23943576.

PMID: 23943576 [PubMed - in process]

95: Verma N, Kumar S, Thapa SR. Tubercular meningitis presenting as stridor. Indian J Pediatr. 2014 Jun;81(6):626-7. doi: 10.1007/s12098-013-1174-9. Epub 2013 Jul 28. PubMed PMID: 23893369.

PMID: 23893369 [PubMed - in process]

96: Veckeneer M, Mohr A, Alharthi E, Azad R, Bashshur ZF, Bertelli E, Bejjani RA, Bouassida B, Bourla D, Crespo IC, Fahed C, Fayyad F, Mura M, Nawrocki J, Rivett K, Scharioth GB, Shkvorchenko DO, Szurman P, Van Wijck H, Wong IY, Wong DS, Frank J, Oellerich S, Bruinsma M, Melles GR. Novel 'heavy' dyes for retinal membrane staining during macular surgery: multicenter clinical assessment. Acta Ophthalmol. 2014 Jun;92(4):339-44. doi: 10.1111/aos.12208. Epub 2013 Jun 20. PubMed PMID: 23782673.

PURPOSE: To evaluate the feasibility of two novel 'heavy' dye solutions for staining the internal limiting membrane (ILM) and epiretinal membranes (ERMs), without the need for a prior fluid-air exchange, during macular surgery.

METHODS: In this prospective nonrandomized multicenter cohort study, the high molecular weight dyes ILM-Blue™ [0.025% brilliant blue G, 4% polyethylene glycol (PEG)] and MembraneBlue-Dual™ (0.15% trypan blue, 0.025% brilliant blue G, 4% PEG) were randomly used in vitrectomy surgeries for macular disease in 127 eyes of 127 patients. Dye enhanced membrane visualization of the ILM and ERMs, 'ease of membrane peeling', visually detectable perioperative retinal damage, postoperative best-corrected visual acuity (BCVA), dye remnants and other unexpected clinical events were documented by 21 surgeons.

RESULTS: All surgeries were uneventful, and a clear bluish staining, facilitating the identification, delineation and removal of the ILM and ERMs, was reported in all but five cases. None of the surgeries required a fluid-air exchange to assist the dye application. BCVA at 1 month after surgery improved in 83% of the eyes in the MembraneBlue-Dual™ group and in 88% in the ILM-Blue™ group. No dye remnants were detected by ophthalmoscopy, and no retinal adverse effects related to the surgery or use of the dyes were observed.

CONCLUSION: The 'heavy' dye solutions ILM-Blue™ and MembraneBlue-Dual™ can be injected into a fluid-filled vitreous cavity and may facilitate staining and removal of the ILM and/or ERMs in macular surgery without an additional fluid-air exchange.

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PMID: 23782673 [PubMed - in process]

97: Arora K, Thukral A, Das RR, Gupta N, Kabra M, Agarwal R. Fryns syndrome: a lethal birth defect with variable phenotypic expressions in siblings. *Indian J Pediatr.* 2014 Jun;81(6):614-6. doi: 10.1007/s12098-013-1011-1. Epub 2013 Apr 19. PubMed PMID: 23604607.

Fryns syndrome (FS) is a multiple congenital anomaly syndrome, inherited as an autosomal recessive defect with variable expression. The authors report a newborn with FS, whose mother had two previous affected pregnancies with the infants having variable phenotypic expression. FS is characterized by craniofacial dysmorphism, diaphragmatic hernia and distal limb hypoplasia. This is the first published report from India describing a case of FS with familial recurrence, which would serve further to illustrate the clinical variability of this disorder.

PMID: 23604607 [PubMed - in process]

98: Sahoo MK, Gupta S, Singh I, Pahwa S, Durgapal P, Bal CS. Necrolytic migratory erythema associated with glucagonoma syndrome diagnosed by ⁶⁸Ga-DOTANOC PET-CT. *Asia Pac J Clin Oncol.* 2014 Jun;10(2):190-3. doi: 10.1111/ajco.12048. Epub 2012 Dec 26. PubMed PMID: 23279825.

Necrolytic migratory erythema (NME) is a rare dermatological condition which presents a diagnostic challenge. Repeated negative skin biopsies and non-detection of any pancreatic tumor in conventional imaging modalities like a computed tomography (CT) scan and ultrasonogram (USG) make the diagnosis more difficult. By the time the diagnosis is made, the patient usually presents with metastasis. We present a rare case of difficult to diagnose NME, as repeated skin biopsies and conventional imaging modalities like CT and USG could not detect the underlying glucagonoma. A (68)Ga-DOTANOC positron emission tomography PET-CT was able to detect the underlying cause of NME as glucagonoma of the pancreas and the same investigation confirmed the absence of any metastasis elsewhere in the body. The tumor was excised and patient dramatically improved, and all skin lesions disappeared.

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PMID: 23279825 [PubMed - in process]