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List of publications of AIIMS, New Delhi
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1: Agarwal N, Chatterjee K, Coshic P, Borgohain M. Nucleic acid testing for blood banks: an experience from a tertiary care centre in New Delhi, India. *Transfus Apher Sci.* 2013 Dec;49(3):482-4. doi: 10.1016/j.transci.2013.03.004. Epub 2013 Mar 28. PubMed PMID: 23541414.

INTRODUCTION: Blood safety is a challenging task in India; with a population of around 1.23 billion and a high prevalence rate of HIV (0.29%), HBV (2-8%) and HCV (\approx 2%) in general population. Nucleic acid testing (NAT) in blood donor screening has been implemented in many developed countries to reduce the risk of transfusion-transmitted viral infections (TTIs). NAT shortens this window period, thereby offering blood centers a much higher sensitivity for detecting viral infections.

MATERIALS AND METHODS: Routine ID-NAT for HIV-1, HCV and HBV was started from June 2010 at AIIMS blood bank by the Procleix® Ultrio® Assay (Novartis Diagnostics, USA) a multiplex NAT, which allows the simultaneous detection of HIV-1, HCV, and HBV in a single tube. During the period of 27 months from June 2010 to August 2012, around 73,898 samples were tested for all the three viruses using both ELISA (by Genscreen Ultra HIV Ag-Ab(BIO-RAD), Hepanostika HCV Ultra & HBsAg Ultra(Biomerieux) and Nucleic acid testing. The comparative results of both the assays are being presented here in this study.

RESULTS: Out of 73,898 samples, 1104 samples (1.49%) were reactive by NAT. out of these 1104 samples, 73 were reactive for HIV-1 (0.09%), 186 were reactive for HCV only (0.25%), 779 (1.05%) were reactive for HBV only, and around 66 (0.08%) were HBV-HCV co-infections. There was one HIV, 37 HCV, 73 HBV and 10 HBV-HCV co-infection cases that were not detected by serology but reactive on NAT testing, with a combined yield of 1 in 610 donations (total 121 NAT yields).

CONCLUSION: NAT could detect HIV, HBV and HCV cases in blood donor samples that were undetected by serological tests. NAT can interdict a large number of infected unit transfusions and thus help in providing safe blood to the patients.

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PMID: 23541414 [PubMed - in process]

2: Akizu N, Silhavy JL, Rosti RO, Scott E, Fenstermaker AG, Schroth J, Zaki MS, Sanchez H, Gupta N, Kabra M, Kara M, Ben-Omran T, Rosti B, Guemez-Gamboa A, Spencer E, Pan R, Cai N, Abdellateef M, Gabriel S, Halbritter J, Hildebrandt F, van Bokhoven H, Gunel M, Gleeson JG. Mutations in CSPP1 Lead to Classical Joubert Syndrome. *Am J Hum Genet.* 2014 Jan 2;94(1):80-6. doi: 10.1016/j.ajhg.2013.11.015. Epub 2013 Dec 19. PubMed PMID: 24360807; PubMed Central PMCID: PMC3882909.

Joubert syndrome and related disorders (JSRDs) are genetically heterogeneous and characterized by a distinctive mid-hindbrain malformation. Causative mutations lead to primary cilia dysfunction, which often results in variable involvement of other organs such as the liver, retina, and kidney. We identified predicted null mutations in CSPP1 in six individuals affected by classical JSRDs. CSPP1 encodes a protein localized to centrosomes and spindle poles, as well as to the primary cilium. Despite the known interaction between CSPP1 and nephronophthisis-associated proteins, none of the affected individuals in our cohort presented with kidney disease, and further, screening of a large cohort of individuals with nephronophthisis demonstrated no mutations. CSPP1 is broadly expressed in neural tissue, and its encoded protein localizes to the primary cilium in an in vitro model of human neurogenesis. Here, we show abrogated protein levels and ciliogenesis in affected fibroblasts. Our data thus suggest that CSPP1 is involved in neural-specific functions of primary cilia.

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PMCID: PMC3882909 [Available on 2014/7/2]

PMID: 24360807 [PubMed - in process]

3: Bhutani VK, Zipursky A, Blencowe H, Khanna R, Sgro M, Ebbesen F, Bell J, Mori R, Slusher TM, Fahmy N, Paul VK, Du L, Okolo AA, de Almeida MF, Olusanya BO, Kumar P, Cousens S, Lawn JE. Neonatal hyperbilirubinemia and Rhesus disease of the newborn: incidence and impairment estimates for 2010 at regional and global levels. *Pediatr Res.* 2013 Dec;74 Suppl 1:86-100. doi: 10.1038/pr.2013.208. PubMed PMID: 24366465; PubMed Central PMCID: PMC3873706.

Background:Rhesus (Rh) disease and extreme hyperbilirubinemia (EHB) result in neonatal mortality and long-term neurodevelopmental impairment, yet there are no estimates of their burden.Methods:Systematic reviews and meta-analyses were undertaken of national prevalence, mortality, and kernicterus due to Rh disease and EHB. We applied a compartmental model to estimate neonatal survivors and impairment cases for 2010.Results:Twenty-four million (18% of 134 million live births \geq 32wk gestational age from 184 countries; uncertainty range: 23-26 million) were at risk for neonatal hyperbilirubinemia-related adverse outcomes. Of these, 480,700 (0.36%) had either Rh disease (373,300; uncertainty range: 271,800-477,500) or developed EHB from other causes (107,400; uncertainty range: 57,000-131,000), with a 24% risk for death (114,100; uncertainty range: 59,700-172,000), 13% for kernicterus (75,400), and 11% for stillbirths. Three-quarters of mortality occurred in sub-Saharan Africa and South Asia. Kernicterus with Rh disease ranged from 38, 28, 28, and 25/100,000 live births for Eastern Europe/Central Asian, sub-Saharan African, South Asian, and Latin American regions, respectively. More than 83% of survivors with kernicterus had one or more impairments.Conclusion:Failure to prevent Rh sensitization and manage neonatal hyperbilirubinemia results in 114,100 avoidable neonatal deaths and many children grow up with disabilities. Proven solutions remain underused, especially in low-income countries.

PMCID: PMC3873706

PMID: 24366465 [PubMed - in process]

4: Bhutia O, Kumar L, Jose A, Roychoudhury A, Trikha A. Evaluation of facial nerve following open reduction and internal fixation of subcondylar fracture through retromandibular transparotid approach. *Br J Oral Maxillofac Surg.* 2013 Dec 23. pii: S0266-4356(13)00506-8. doi: 10.1016/j.bjoms.2013.12.002. [Epub ahead of print] PubMed PMID: 24370443.

The objective of this study was to evaluate any damage to the facial nerve after a retromandibular transparotid approach for open reduction and internal fixation (ORIF) of a subcondylar fracture. We studied 38 patients with 44 subcondylar fractures (3 bilateral and 38 unilateral) treated by ORIF through a retromandibular transparotid approach. All patients were followed up for 6 months. Postoperative function of the facial nerve was evaluated within 24h of operation, and at 1, 3, and 12 weeks, and 6 months. Variables including type of fracture, degree of mouth opening, postoperative occlusion, lateral excursion of the mandible, and aesthetic outcome were also monitored. Nine of the 44 fractures resulted in transient facial nerve palsy (20%). Branches of the facial nerve that were involved were the buccal (n=7), marginal mandibular (n=2), and zygomatic (n=1). In the group with lateral displacement, 2/15 showed signs of weakness, whereas when the fracture was medially displaced or dislocated 7/23 showed signs of weakness. Of the 9 sites affected, 7 had resolved within 3 months, and the

remaining 2 resolved within 6 months. The mean (range) time to recovery of function was 12 weeks (3-6 months). There was no case of permanent nerve palsy. The retromandibular transparotid approach to ORIF does not permanently damage the branches of the facial nerve. Temporary palsy, though common, resolves in 3-6 months. Postoperative occlusion, mouth opening, and lateral excursion of the mandible were within the reference ranges. We had no infections, or fractured plates, or hypertrophic or keloid scars.

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PMID: 24370443 [PubMed - as supplied by publisher]

5: Binita K, Kumar S, Sharma VK, Sharma V, Yadav S. Proteomic Identification of *Syzygium cumini* Seed Extracts by MALDI-TOF/MS. *Appl Biochem Biotechnol*. 2013 Dec 12. [Epub ahead of print] PubMed PMID: 24338207.

Syzygium cumini is traditionally used medicinal plant. The different part of the plant such as bark, leaves, seed and fruits are widely used as an alternative medicine in various diseases. Although the scientific community has a strong interest on *S. cumini* seed biochemistry focusing on metabolite composition, proteins have not yet been investigated. In the present study, we have applied a proteomic approach to study the proteome of the *S. cumini* seed using phenol extraction method for protein isolation, which were never analysed before. Fifteen brightly silver stained protein spots were identified by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry after resolving on two-dimensional gel electrophoresis. These proteins have been found to involve in various functions such as antifungal, sulphur metabolism, carbohydrate metabolism, fruit ripening and softening, dormancy breaking and seed germination, hormone signalling, secondary metabolite transport, defence and stress response, nitrogen metabolism, synthesis and stabilization. Amongst the identified protein, lactoferrin was a mammalian origin protein with high nutritious and pharmaceutical value, which was purified by different types of chromatographic techniques and confirmed by western blotting. The antibacterial activity of lactoferrin was assessed by disc diffusion assay. We suggest that the protein constituents of *S. cumini* may have role in various functions required for plant physiology and its dietary values.

PMID: 24338207 [PubMed - as supplied by publisher]

6: Biswas B, Agarwala S, Shukla NK, Deo S, Sharma D, Thulkar S, Vishnubhatla S, Bakhshi S. Evaluation of outcome and prognostic factors in thoracic primitive neuroectodermal tumor: a study of 84 cases. *Ann Thorac Surg*. 2013 Dec;96(6):2006-14. doi: 10.1016/j.athoracsur.2013.06.062. Epub 2013 Sep 12. PubMed PMID: 24035307.

BACKGROUND: Data on thoracic primitive neuroectodermal tumor (PNET) treated with a uniform chemotherapy protocol are minimal in the literature. We analyzed patients with thoracic PNET for outcome and prognostic factors.

METHODS: This is a single-institutional data review of patients treated between June 2003 and November 2011 with uniform neoadjuvant chemotherapy, surgical intervention, or radiotherapy (RT), or a combination of these treatments as local therapy followed by adjuvant chemotherapy.

RESULTS: Thoracic PNET was found in 84 of 374 (22%) patients with PNET with a median age of 15 years (range, 3-40 years); 27 (32%) of these patients had metastases. Thirty patients underwent surgical resection; 27 patients received radical RT after neoadjuvant chemotherapy. The radical RT group did not have

adverse tumor characteristics or poor response to neoadjuvant chemotherapy. At median follow-up of 20.8 months (range, 2-104.6 months), 5-year event-free survival (EFS), overall survival (OS), and local control rate (LCR) were $24.4\% \pm 5.9\%$, $47.9\% \pm 8.4\%$, and $59.3\% \pm 9\%$, respectively, for the entire cohort, and $31\% \pm 7.7\%$, $59\% \pm 10.4\%$, and $67\% \pm 9.7\%$, respectively, for the group with localized tumors. In multivariate analysis, symptom duration longer than 4 months ($p = 0.03$), primary tumor of skeletal origin ($p = 0.03$), and radical RT ($p = 0.006$) predicted inferior EFS in the entire cohort and those with localized disease; metastatic disease ($p = 0.002$) predicted inferior OS. Radical RT predicted inferior LCR in the entire cohort and the group with localized tumor; tumor diameter larger than 8 cm ($p = 0.02$) and symptom duration longer than 4 months ($p = 0.02$) predicted inferior LCR in the group with localized tumor.

CONCLUSIONS: This is a single-institutional experience of 84 patients with thoracic PNETs who underwent a uniform chemotherapy protocol. Novel prognostic factors were identified for thoracic PNET. All efforts should be made to resect primary tumor after neoadjuvant chemotherapy because radical RT results in inferior EFS and LCR despite good response to neoadjuvant chemotherapy.

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PMID: 24035307 [PubMed - in process]

7: Borkar SA, Lakshmiprasad G, Sharma BS, Mahapatra AK. Remote site intracranial haemorrhage: a clinical series of five patients with review of literature. *Br J Neurosurg.* 2013 Dec;27(6):735-8. doi: 10.3109/02688697.2013.795521. Epub 2013 Jun 28. PubMed PMID: 23808679.

Post-operative haematoma is a well-known complication following the intracranial surgery, the surgical site itself being the most frequent and usually results from inadequate haemostasis. Remote site intracranial haemorrhage, that is, haemorrhage occurring at a distant site from the site of craniotomy, is relatively rare and may occasionally cause significant morbidity or even mortality. Authors report a clinical series of five patients who developed remote site haemorrhage following intracranial surgery. Out of 2500 cranial surgeries performed at the authors' institute in the year 2010, only five patients developed this complication (0.002%). One of these patients developed infratentorial haematoma following supratentorial surgery and one patient developed supratentorial haematoma following infratentorial surgery. All the patients were diagnosed by CT scan in the post-operative period. Four patients were operated and made a good recovery while one patient with cerebellar haematoma rapidly deteriorated and developed brain death and hence was not operated. The pertinent literature is reviewed regarding pathophysiology and management of this rare condition.

PMID: 23808679 [PubMed - in process]

8: Chakrabarty B, Dubey R, Gulati S, Yoganathan S, Kumar A, Kumar A. Isolated Cerebellar Involvement in Vitamin B12 Deficiency: A Case Report. *J Child Neurol.* 2013 Dec 16. [Epub ahead of print] PubMed PMID: 24346315.

Deficiency of vitamin B12 causes megaloblastic anemia and nervous system demyelination. Structures affected in the nervous system include spinal cord, cranial and peripheral nerves, and brain white matter. A 9-year-old boy presented with knuckle hyperpigmentation and oral ulcers for 3 years, pallor and easy fatigability for 6 months, gait abnormalities for 3 months, and abnormal speech

and behavioral abnormalities for 3 days. On examination, he had physical signs of megaloblastic anemia, mood swings with intermittent hallucinations, and features of cerebellar impairment. Blood investigations revealed megaloblastic anemia, and pernicious anemia was ruled out. Brain magnetic resonance imaging (MRI) revealed bilateral cerebellar signal changes. He received treatment for vitamin B12 deficiency and appropriate nutritional counseling. Three months later, he showed significant clinical and radiologic resolution. To our knowledge, isolated cerebellar involvement as the sole neurologic manifestation of vitamin B12 deficiency has not been described previously in children.

PMID: 24346315 [PubMed - as supplied by publisher]

9: Chakrabarty B, Kabra SK, Gulati S, Toteja GS, Lodha R, Kabra M, Pandey RM, Srivastava A. Peripheral neuropathy in cystic fibrosis: a prevalence study. *J Cyst Fibros*. 2013 Dec;12(6):754-60. doi: 10.1016/j.jcf.2013.01.005. Epub 2013 Feb 5. PubMed PMID: 23391476.

BACKGROUND: Information on peripheral neuropathy in children with cystic fibrosis is scanty. The etiology can be multifactorial (micronutrient deficiency, chronic hypoxia, impaired glucose tolerance, immunological, vasculopathic, critical illness).

METHODS: Forty five cystic fibrosis children aged 1-18 years on vitamin E supplementation for at least 6 months underwent detailed neurological examination, serum vitamin E, vitamin B12, folate, copper levels and detailed nerve conduction studies.

RESULTS: The mean age of the study population was 8.35 years (± 4.9 years) with 62.2% being males. Overall 22 out of 45 (48.88%, CI: 33.7-64.2) had electrophysiological evidence of peripheral neuropathy which was predominantly axonal (86.4%), sensory (50%), and polyneuropathy (95.45%). There was no significant association between status of serum micronutrients and electrophysiological evidence of peripheral neuropathy.

CONCLUSION: Patients with cystic fibrosis have electrophysiological evidence of peripheral neuropathy (predominantly axonal, sensory and polyneuropathy). There is significant association of higher chronological age with occurrence of peripheral neuropathy.

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PMID: 23391476 [PubMed - in process]

10: Chopra A, Bakhshi S, Pramanik SK, Pandey RM, Singh S, Gajendra S, Gogia A, Chandramohan J, Sharma A, Kumar L, Seth R, Rai S, Kumar R. Immunophenotypic analysis of T-acute lymphoblastic leukemia. A CD5-based ETP-ALL perspective of non-ETP T-ALL. *Eur J Haematol*. 2013 Dec 14. doi: 10.1111/ejh.12238. [Epub ahead of print] PubMed PMID: 24329989.

T-cell antigens [CD5, CD1a, CD8] define early T-cell precursor acute lymphoblastic leukemia (ETP-ALL). To understand immature T-ALL of which ETP-ALL is part, we used these antigens to subcategorize non-ETP T-ALL for examining expression of myeloid/stem cell antigens (M/S) and clinical features. Using CD5 (+/-) to start categorization, we studied 69 routinely immunophenotyped patients with T-ALL. CD5(-) was a homogenous (CD8, CD1a)(-) M/S(+) ETP-ALL group (n = 9). CD5(+) cases were (CD8, CD1a)(-) pre-T-ALL (n = 22) or (CD8, CD1a)(+) (n = 38) thymic/cortical T-ALL; M/S(+) 20/22 (90.91%) in former and 22/38 (57.89%) in latter (P = 0.007). ETP- and pre-T-ALL together (CD1a(-), CD5(-/+)) immature T-ALL group) were nearly always M/S(+) (29/31; 93.55%). In multivariate analysis, only ETP-ALL predicted

poor overall survival ($P = 0.02$). We conclude (i) CD5 negativity in T-ALL almost always means ETP-ALL. CD1a and CD8 negativity, as much as CD5, marks immaturity in T-ALL, and the CD5(+/-) /CD1a(-) /CD8(-) immature T-ALL group needs further study to understand the biology of the T-ALL-myeloid interface. (ii) ETP-ALL patients may be pre-T-ALL if CD2(+) ; CD2(+) , conversely, CD5(-) /CD1a(-) /CD8(-) pre-T ALL patients are ETP-ALL. (iii) Immunophenotypic workup of T-ALL must not omit CD1a, CD5, CD8 and CD2, and positivity of antigens should preferably be defined as recommended for ETP-ALL, so that this entity can be better evaluated in future studies of immature T-ALL, a group to which ETP-ALL belongs. (iv) ETP-ALL has poor prognosis.

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PMID: 24329989 [PubMed - as supplied by publisher]

11: Das RR, Singh M, Panigrahi I, Naik SS. Vitamin D Supplementation for the Treatment of Acute Childhood Pneumonia: A Systematic Review. *ISRN Pediatr.* 2013 Dec 19;2013:459160. eCollection 2013 Dec 19. Review. PubMed PMID: 24455293.

Background. Studies have found an increased incidence of vitamin D deficiency in children with pneumonia; however, there is no conclusive data regarding the direct effect of vitamin D supplementation in acute pneumonia. Methods. A comprehensive search was performed of the major electronic databases till September 2013. Randomized controlled trials (RCTs) comparing treatment with vitamin D3 versus placebo in children ≤ 5 years old with pneumonia were included. Results. Out of 32 full text articles, 2 RCTs including 653 children were eligible for inclusion. One trial used a single 100,000 unit of oral vitamin D3 at the onset of pneumonia. There was no significant difference in the mean (\pm SD) number of days to recovery between the vitamin D3 and placebo arms ($P = 0.17$). Another trial used oral vitamin D3 (1000 IU for <1 year and 2000 IU for >1 year) for 5 days in children with severe pneumonia. Median duration of resolution of severe pneumonia was similar in the two groups (intervention, 72 hours; placebo, 64 hours). Duration of hospitalization and time to resolution of tachypnea, chest retractions, and inability to feed were also comparable between the two groups. Conclusions. Oral vitamin D supplementation does not help children under-five with acute pneumonia.

PMID: 24455293 [PubMed - as supplied by publisher]

12: Dubey A, Sonker A, Chaudhary RK. Evaluation of health care workers' knowledge and functioning of blood centres in north India: a questionnaire based survey. *Transfus Apher Sci.* 2013 Dec;49(3):565-70. doi: 10.1016/j.transci.2013.09.007. Epub 2013 Sep 29. PubMed PMID: 24126014.

For quality, safety and efficacy of blood components, adequate infrastructure and trained manpower are essential requirements. Objective of this study is to analyse existing systems of transfusion services in north India, various testing methodologies practiced and to assess the level of knowledge of health care professionals working at these centres. Participants included laboratory technicians and nurses whose knowledge and various practices at blood centres were assessed using a questionnaire. Knowledge of those having more experience, working at urban blood centres and received an additional training was significantly higher. Only a few blood centres are performing all mandatory tests on donors' samples.

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PMID: 24126014 [PubMed - in process]

13: Durgapal P, Mathur SR, Kalamuddin M, Datta Gupta S, Parshad R, Julka PK, Panda SK. Assessment of her-2/neu status using immunocytochemistry and fluorescence in situ hybridization on fine-needle aspiration cytology smears: Experience from a tertiary care centre in india. *Diagn Cytopathol*. 2013 Dec 20. doi: 10.1002/dc.23088. [Epub ahead of print] PubMed PMID: 24376261.

Breast carcinoma shows amplification/overexpression of Her-2/neu in ~20-30% of cases. The determination of Her-2/neu expression accurately is vital in clinical practice as it has significant predictive value and eligibility for anti Her-2/neu therapy. Amplification and overexpression of Her-2/neu gene is traditionally identified by fluorescence in situ hybridization (FISH) and immunohistochemistry (IHC) on tissue sections; only a few studies have evaluated feasibility of these techniques on cytological smears. One hundred cases of breast cancer with fine-needle aspiration cytology (FNAC) samples and corresponding surgically resected specimen were selected. Immunocytochemistry (ICC) and FISH for Her-2/neu was done on FNA smears, whereas IHC was performed on corresponding tissue sections. Diagnostic accuracy of ICC was 99% when compared with IHC. Comparison of FISH results with IHC showed 100% concordance. Unlike many centers in West, FNAC is still routinely performed in developing countries like India where vast majority of breast cancer cases present as palpable lumps. The high rates of accuracy of ICC and FISH for Her-2/neu detection can make FNAC a relevant first line of investigation as a cost effective model with a rapid turn-around time, providing complete information necessary for initial management of breast cancer patients. *Diagn. Cytopathol*. 2013. © 2013 Wiley Periodicals, Inc.

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PMID: 24376261 [PubMed - as supplied by publisher]

14: Elhence A, Jalan D, Talreja H. Comment on Lan et al.: S-osteotomy with lengthening and then nailing compared with traditional Ilizarov method. *Int Orthop*. 2013 Dec 18. [Epub ahead of print] PubMed PMID: 24346513.

PMID: 24346513 [PubMed - as supplied by publisher]

15: Garg K, Singh PK, Singh M, Chandra PS, Sharma BS. Long segment spinal epidural extramedullary hematopoiesis. *Surg Neurol Int*. 2013 Dec 26;4:161. doi: 10.4103/2152-7806.123657. PubMed PMID: 24404404; PubMed Central PMCID: PMC3883269.

cells outside the bone marrow. It is a common manifestation of many chronic hemolytic anemias, and typically involves the liver, spleen, and lymph nodes. Only rarely is the spinal epidural space involved.
METHODS: We describe a 25-year-old male, known to have thalassemia intermedia, who presented with a 1-month history of stiffness and weakness in both lower extremities. On physical examination, he had palpable splenomegaly accompanied by spinal tenderness at the D5 level, weakness in both lower extremities, hyperactive bilateral Patellar and Achilles reflexes with bilateral Babinski responses, and a graded sensory loss to pin appreciation below D5.
RESULTS: The magnetic resonance (MR) study revealed a posterior, isointense and

soft tissue epidural mass extending from D2 to D12 on both the T1- and T2-weighted images. These findings were consistent with the diagnosis of "red marrow," and long-segment spinal epidural extramedullary hematopoiesis. CONCLUSIONS: Although extramedullary hematopoiesis is rarely encountered within the spinal canal, it should be considered among the differential diagnoses when a posterior compressive thoracic lesion contributes to myelopathy in a patient with a history of thalassemia intermedia and the accompanying chronic hemolytic anemia.

PMCID: PMC3883269

PMID: 24404404 [PubMed]

16: Garg K, Gurjar HK, Satyarthee GD, Singla R, Sharma BS. Inguinal Hernia-A Rare Complication of Ventriculoperitoneal Shunt. Indian J Pediatr. 2013 Dec 22. [Epub ahead of print] PubMed PMID: 24362958.

PMID: 24362958 [PubMed - as supplied by publisher]

17: Garg K, Satyarthee GD, Dash C, Singh PK, Chandra PS, Sharma BS. Hyperplasia of Cervical Spinous Process Presenting as Subcutaneous Mass. Indian J Pediatr. 2013 Dec 22. [Epub ahead of print] PubMed PMID: 24362957.

PMID: 24362957 [PubMed - as supplied by publisher]

18: Garg K, Gurjar HK, Chandra PS, Sharma BS. Pentapathology in Neurofibromatosis 1. Indian J Pediatr. 2013 Dec 22. [Epub ahead of print] PubMed PMID: 24362955.

PMID: 24362955 [PubMed - as supplied by publisher]

19: Garg K, Singh PK, Sharma BS, Chandra PS, Suri A, Singh M, Kumar R, Kale SS, Mishra NK, Gaikwad SK, Mahapatra AK. Pediatric intracranial aneurysms-our experience and review of literature. Childs Nerv Syst. 2013 Dec 10. [Epub ahead of print] PubMed PMID: 24322606.

PURPOSE: Intracranial aneurysms in children are not as common as in adults and there are many differences in the etiology, demographic variables, aneurysm location, aneurysm morphological characteristics, clinical presentation, and outcome in pediatric and adult intracranial aneurysms.

METHODS: All children (≤ 18 years) suffering from intracranial aneurysm managed at our center from July 2001 through June 2013 were included in the study, and the details of these patients were retrieved from the computerized database of our hospital.

OBSERVATIONS: A total of 62 pediatric patients were treated for 74 aneurysms during the study period and constituted 2.3 % of all intracranial aneurysms treated during the same period. The mean age at presentation was 13.5 years. Headache (82 %) was the commonest presenting feature; other symptoms included seizures (21 %), ictal loss of consciousness (27 %), and motor/cranial nerve deficits (22.6 %). Computed tomogram revealed subarachnoid hemorrhage in 58 % of patients. Eighty-two percent of aneurysms were in anterior circulation.

Sixty-seven percent of aneurysms were complex aneurysms. Fifty-eight percent of patients underwent surgical intervention while 30 % underwent endovascular procedures. Twenty-one percent of the patients developed vasospasm. There was no postoperative mortality. Favorable outcome was seen in 72 % of the patients.

CONCLUSIONS: Pediatric intracranial aneurysms are uncommon as compared to in adult patients. Seizures and cranial nerve involvement are seen more often as the presenting features in children. Posterior circulation aneurysms are more common in children, as are the internal carotid artery bifurcation aneurysms. There is

high incidence of giant, posttraumatic, and mycotic aneurysms in children.

PMID: 24322606 [PubMed - as supplied by publisher]

20: Garg PK. Preoperative fluorodeoxyglucose positron emission tomography-computed tomography in papillary thyroid cancer: A futile exercise. *J Int Med Res.* 2014 Feb;42(1):243-4. doi: 10.1177/0300060513516945. Epub 2013 Dec 17. PubMed PMID: 24345825.

PMID: 24345825 [PubMed - in process]

21: Gautam, Jhanji V, Satpathy G, Khokhar S, Agarwal T. Microsporidial keratitis after collagen cross-linking. *Ocul Immunol Inflamm.* 2013 Dec;21(6):495-7. doi: 10.3109/09273948.2013.824105. Epub 2013 Aug 26. PubMed PMID: 23978264.

PURPOSE: To report a case of infectious keratitis due to *Microsporidium* after collagen crosslinking (CXL).

METHODS: A 36-year-old man presented with a 3-day history of pain, redness and diminution of vision in his left eye. The patient had received CXL for keratoconus in the left eye 6 days prior to presentation. Best-corrected visual acuity (BCVA) was 20/25 OD and counting fingers OS. Slit lamp examination of the left eye showed a central epithelial defect measuring and multiple stromal infiltrates.

RESULTS: Gram and Giemsa staining of corneal scrapings showed spores characteristic of *Microsporidia*. Hourly 0.5% moxifloxacin eye drops, 0.5% moxifloxacin eye ointment nocte and oral albendazole 400 mg twice daily were commenced. Corneal debridement was performed twice during the first week. At the end of 6 weeks BCVA was 20/60 in the left eye.

CONCLUSIONS: Microsporidial infection can be confirmed on microbiological examination. Our case responded well to medical treatment alone.

PMID: 23978264 [PubMed - in process]

22: Gautam US, Sikri K, Vashist A, Singh V, Tyagi JS. Essentiality of DevR/DosR interaction with SigA for the Dormancy Survival Programme in *Mycobacterium tuberculosis*. *J Bacteriol.* 2013 Dec 6. [Epub ahead of print] PubMed PMID: 24317401.

DevR/DosR regulator is believed to play a key role in dormancy adaptation mechanisms of *Mycobacterium tuberculosis* in response to a multitude of gaseous stresses, including hypoxia that prevails within granulomas. DevR activates transcription by binding to target promoters containing a minimum of two binding sites. The proximal site overlaps with the SigA -35 element, suggesting that DevR-SigA interaction is required for activating transcription. We evaluated the role of fourteen charged residues of DevR in transcriptional activation under hypoxic stress. Seven of the fourteen alanine substitution mutants were defective in regulon activation, of which K191A, R197A and K179A+K168A double mutant (designated K179A*) were significantly or completely compromised in DNA binding. Four mutants, namely E154A, R155A, E178A and K208A, were activation-defective in spite of binding to DNA and were classified as positive control (pc) mutants. The SigA interaction defect of E154A and E178A proteins was established by *in vitro* and *in vivo* assays and implies that these substitutions lead to an activation defect because they disrupt interaction(s) with SigA. The relevance of DevR interaction with the transcriptional machinery was further established by the hypoxia survival phenotype displayed by SigA interaction-defective mutants. Our

findings demonstrate the role of DevR-SigA interaction in the activation mechanism and in bacterial survival under hypoxia and establish the housekeeping sigma factor SigA as a molecular target of DevR. The interaction of DevR and RNA polymerase suggests a new and novel interceptable molecular interface for future anti-dormancy strategies in *Mycobacterium tuberculosis*.

PMID: 24317401 [PubMed - as supplied by publisher]

23: Ghosh D, Sengupta J. Introduction: Systems biology and reproduction. *Prog Biophys Mol Biol*. 2013 Dec;113(3):356-7. doi: 10.1016/j.pbiomolbio.2013.11.005. PubMed PMID: 24314296.

PMID: 24314296 [PubMed - in process]

24: Gogia A, Bansal A, Suri V, Bakhshi S. Childhood orbital soft tissue sarcoma in xeroderma pigmentosum with good tolerance to chemotherapy and radiotherapy. *Pediatr Blood Cancer*. 2013 Dec;60(12):2093-4. doi: 10.1002/pbc.24716. Epub 2013 Aug 14. PubMed PMID: 23946134.

PMID: 23946134 [PubMed - indexed for MEDLINE]

25: Goyal R, Singhai M. Tuberculosis and non-diabetic hyperglycemia: a challenge to public health management. *Med Hypotheses*. 2013 Dec;81(6):1170-1. doi: 10.1016/j.mehy.2013.10.004. Epub 2013 Oct 16. PubMed PMID: 24182869.

Diabetes and tuberculosis comorbidity is an emerging challenge for public health management. But the diagnostic criteria for diabetes is based on microvascular complications of diabetes and does not reflect the level of hyperglycemia which affects infectivity of *Mycobacterium tuberculosis*. Therefore the study protocols focussing on these comorbidities need to be reviewed.

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PMID: 24182869 [PubMed - in process]

26: Gupta SK, Anderson RH, Kothari SS. Pulmonary atresia and intact ventricular septum with transposed arterial trunks. *Cardiol Young*. 2013 Dec 17:1-3. [Epub ahead of print] PubMed PMID: 24345302.

We report a case of pulmonary atresia with intact ventricular septum, but in the setting of transposed great arteries, and thus the left rather than the right ventricle was hypoplastic.

PMID: 24345302 [PubMed - as supplied by publisher]

27: Gupta SK, Ramakrishnan S, Kothari SS. De novo fenestration of extra-cardiac Fontan Goretex conduit assisted by Inoue balloon. *Catheter Cardiovasc Interv*. 2013 Dec 1;82(7):E893-7. doi: 10.1002/ccd.24750. Epub 2013 May 15. PubMed PMID: 23172624.

De novo fenestration of Goretex conduit of extra-cardiac total cavopulmonary connection in the postoperative period is challenging, and is rarely reported. We report a 17-year-old boy with failing Fontan circuit in whom fenestration was created, aided by an Inoue balloon.

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PMID: 23172624 [PubMed - in process]

28: Gupta V, Verma S, Ramakrishnan S, Hote M, Seth S, Bhargava B. Congenital rubella syndrome presenting in adulthood with fatigue. *Circulation*. 2013 Dec 3;128(23):2542-5. doi: 10.1161/CIRCULATIONAHA.113.001955. PubMed PMID: 24297819.

PMID: 24297819 [PubMed - in process]

29: Hasan MR, Sharma R, Saraya A, Chattopadhyay TK, Dattagupta S, Walfish PG, Chauhan SS, Ralhan R. Slug is a predictor of poor prognosis in esophageal squamous cell carcinoma patients. *PLoS One*. 2013 Dec 18;8(12):e82846. doi: 10.1371/journal.pone.0082846. PubMed PMID: 24367561; PubMed Central PMCID: PMC3867395.

BACKGROUND: Slug, a regulator of epithelial mesenchymal transition, was identified to be differentially expressed in esophageal squamous cell carcinoma (ESCC) using cDNA microarrays by our laboratory. This study aimed to determine the clinical significance of Slug overexpression in ESCC and determine its correlation with clinicopathological parameters and disease prognosis for ESCC patients.

METHODS: Immunohistochemical analysis of Slug expression was carried out in archived tissue sections from 91 ESCCs, 61 dysplastic and 47 histologically normal esophageal tissues. Slug immunopositivity in epithelial cells was correlated with clinicopathological parameters and disease prognosis over up to 7.5 years for ESCC patients.

RESULTS: Increased expression of Slug was observed in esophageal dysplasia [cytoplasmic, 24/61 (39.3%) cases, $p = 0.001$, odd's ratio (OR) = 4.7; nuclear, 11/61 (18%) cases, $p < 0.001$, OR = 1.36] in comparison with normal esophageal tissues. The Slug expression was further increased in ESCCs [cytoplasmic, 64/91 (70.3%) $p < 0.001$, OR = 10.0; nuclear, 27/91 (29.7%) $p < 0.001$, OR = 1.42]. Kaplan Meier survival analysis showed significant association of nuclear Slug accumulation with reduced disease free survival of ESCC patients (median disease free survival (DFS) = 6 months, as compared to those that did not show overexpression, DFS = 18 months; $p = 0.006$). In multivariate Cox regression analysis nuclear Slug expression [$p = 0.005$, Hazard's ratio (HR) = 2.269, 95% CI = 1.289 - 3.996] emerged as the most significant independent predictor of poor prognosis for ESCC patients.

CONCLUSIONS: Alterations in Slug expression occur in early stages of development of ESCC and are sustained during disease progression. Slug may serve as a diagnostic biomarker and as a predictor of poor disease prognosis to identify ESCC patients that are likely to show recurrence of the disease.

PMCID: PMC3867395

PMID: 24367561 [PubMed - in process]

30: Huppertz B, Ghosh D, Sengupta J. An integrative view on the physiology of human early placental villi. *Prog Biophys Mol Biol*. 2013 Dec 1. pii: S0079-6107(13)00128-4. doi: 10.1016/j.pbiomolbio.2013.11.007. [Epub ahead of print] PubMed PMID: 24291663.

The placenta is an indispensable organ for intrauterine protection, development and growth of the embryo and fetus. It provides tight contact between mother and conceptus, enabling the exchange of gas, nutrients and waste products. The human placenta is discoidal in shape, and bears a hemo-monochorial interface as well as villous materno-fetal interdigitations. Since Peter Medawar's astonishment to the

paradoxical nature of the mother-fetus relationship in 1953, substantial knowledge in the domain of placental physiology has been gathered. In the present essay, an attempt has been made to build an integrated understanding of morphological dynamics, cell biology, and functional aspects of genomic and proteomic expression of human early placental villous trophoblast cells followed by a commentary on the future directions of research in this field.

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PMID: 24291663 [PubMed - as supplied by publisher]

31: Irshad M, Ansari MA, Irshad K, Lingaiah R. Novel single-step multiplex real-time polymerase chain reaction assay for simultaneous quantification of hepatitis virus A, B, C, and E in serum. *J Gastroenterol Hepatol*. 2013 Dec;28(12):1869-76. doi: 10.1111/jgh.12302. PubMed PMID: 23800094.

BACKGROUND AND AIM: Viral hepatitis needs an earliest diagnosis for its proper and timely treatment. Although serodiagnosis of viral hepatitis is in regular practice, however, it has certain limitations and points to alternate procedures of diagnosis. Present study was designed to develop a single-step multiplex real-time polymerase chain reaction (PCR) assay for detection of hepatitis A virus (HAV), hepatitis B virus (HBV), hepatitis C virus (HCV) and hepatitis E virus (HEV) related nucleic acids in sera from infected patients.

METHODS: The PCR was standardized to detect HAV, HBV, HCV and HEV in serum using variables including annealing temperature, extension temperature, MgCl₂, and primer concentrations. The conserved regions of all viral genomes were used as targets for amplification.

RESULTS: This novel assay was found to be a fast, sensitive, specific, and reproducible system for detection of HAV, HBV, HCV, and HEV in serum. The detection limit for different viral genomes at 100% level was found to be 280 copies/mL for HAV, 290 copies/mL for HBV, 30 copies/mL for HCV, and 300 copies/mL for HEV in a single-tube assay system.

CONCLUSION: Present multiplex real-time PCR is the first report on single-step nucleic acid detection of HAV, HBV, HCV, and HEV in sera samples. It is an alternate diagnostic assay for common use in laboratories analyzing viral hepatitis cases.

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PMID: 23800094 [PubMed - in process]

32: Jain D. Low papillary structures in lepidic lung adenocarcinoma: any relationship with micropapillary lung adenocarcinoma? *Hum Pathol*. 2013 Dec;44(12):2867. doi: 10.1016/j.humpath.2013.07.043. Epub 2013 Sep 17. PubMed PMID: 24054172.

Comment in
Hum Pathol. 2013 Dec;44(12):2867-8.

Comment on
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PMID: 24054172 [PubMed - in process]

33: Jain S, Chowdhury V, Juneja M, Kabra M, Pandey S, Singh A, Bhattacharya M,

Kapoor S. Intellectual disability in Indian children: experience with a stratified approach for etiological diagnosis. *Indian Pediatr.* 2013 Dec 8;50(12):1125-30. Epub 2013 Jun 5. PubMed PMID: 23798638.

OBJECTIVE: To study the clinico-etiological profile of children with intellectual disability using an algorithmic approach.

DESIGN: Cross-sectional study.

SETTING: Tertiary care centre in Northern India.

PARTICIPANTS: Consecutive children aged 3 months to 12 years, presenting with intellectual disability, confirmed by Developmental Assessment Scale for Indian Infants, Binet Kulshreshtha Test and Vineland Social Maturity Scale.

METHODS: All children were assessed on an internally validated structured proforma. A targeted approach included thyroid function tests, Brainstem evoked response audiometry, electroencephalogram, neuroimaging and metabolic screen done as a pre-decided schema. Genetic tests included karyotyping, molecular studies for Fragile X, Multiplex Ligation Dependent Probe Amplification and Array Comparative Genomic Hybridisation.

RESULTS: Data of 101 children (median age 22 months) was analyzed. The etiological yield was 82.1% with genetic causes being the most common (61.4%) followed by perinatal acquired (20.4%), CNS malformations (12%), external prenatal (3.6%), and postnatal acquired (2.4%). Mild delay was seen in 11.7%, moderate in 21.7%, severe in 30.6% and profound in 35.6%

CONCLUSIONS: It is possible to ascertain the diagnosis in most of the cases of intellectual disability using a judicious and sequential battery of tests.

PMID: 23798638 [PubMed - in process]

34: Jamshed N, Ozair FF, Ekka M, Aggarwal P. N-terminal prohormone of brain natriuretic peptide-how far can we extrapolate? *Am J Emerg Med.* 2013 Dec 20. pii: S0735-6757(13)00892-9. doi: 10.1016/j.ajem.2013.12.033. [Epub ahead of print] PubMed PMID: 24445224.

PMID: 24445224 [PubMed - as supplied by publisher]

35: Jhanjee S, Kumar R. Mobile clinic services for opioid users: a feasible treatment modality. *Asian J Psychiatr.* 2013 Dec;6(6):626. doi: 10.1016/j.ajp.2013.06.001. Epub 2013 Jul 21. PubMed PMID: 24309890.

PMID: 24309890 [PubMed - in process]

36: Kalra S, Balhara YP. Euthyroid Depression: The Role of Thyroid Hormone. *Recent Pat Endocr Metab Immune Drug Discov.* 2013 Dec 29. [Epub ahead of print] PubMed PMID: 24372347.

Thyroid dysfunction and psychiatric disorders share a bidirectional relation. Thyroid hormones have been found to affect the central nervous system both structurally and functionally. Conventional antidepressant drug therapy is characterized by a delayed and at times suboptimal response. Various strategies have been devised in order to circumvent this limitation. L- thyroxine has been used as both acceleration therapy and augmentation therapy as adjuvant therapy with antidepressants. The hormone has also been used as monotherapy, both in prevention and management of depression. The potential use of thyroid hormone as an adjunct therapy in management of euthyroid depression and relevant patents has been discussed.

PMID: 24372347 [PubMed - as supplied by publisher]

37: Kanojia D, Garg M, Saini S, Agarwal S, Parashar D, Jagadish N, Seth A, Bhatnagar A, Gupta A, Kumar R, Lohiya NK, Suri A. Sperm associated antigen 9 plays an important role in bladder transitional cell carcinoma. PLoS One. 2013 Dec 9;8(12):e81348. doi: 10.1371/journal.pone.0081348. PubMed PMID: 24349057; PubMed Central PMCID: PMC3857194.

BACKGROUND: Majority of bladder cancer deaths are caused due to transitional cell carcinoma (TCC) which is the most prevalent and chemoresistant malignancy of urinary bladder. Therefore, we analyzed the role of Sperm associated antigen 9 (SPAG9) in bladder TCC.

METHODOLOGY AND FINDINGS: We examined SPAG9 expression and humoral response in 125 bladder TCC patients. Four bladder cancer cell lines were assessed for SPAG9 expression. In addition, we investigated the effect of SPAG9 ablation on cellular proliferation, cell cycle, migration and invasion in UM-UC-3 bladder cancer cells by employing gene silencing approach. Our SPAG9 gene and protein expression analysis revealed SPAG9 expression in 81% of bladder TCC tissue specimens. High SPAG9 expression (>60% SPAG9 positive cells) was found to be significantly associated with superficial non-muscle invasive stage (P=0.042) and low grade tumors (P=0.002) suggesting SPAG9 putative role in early spread and tumorigenesis. Humoral response against SPAG9 was observed in 95% of patients found positive for SPAG9 expression. All four bladder cancer cell lines revealed SPAG9 expression. In addition, SPAG9 gene silencing in UM-UC-3 cells resulted in induction of G0-G1 arrest characterized by up-regulation of p16 and p21 and consequent down-regulation of cyclin E, cyclin D and cyclin B, CDK4 and CDK1. Further, SPAG9 gene silencing also resulted in reduction in cellular growth, and migration and invasion ability of cancer cells in vitro.

CONCLUSIONS: Collectively, our data in clinical specimens indicated that SPAG9 is potential biomarker and therapeutic target for bladder TCC.

PMCID: PMC3857194

PMID: 24349057 [PubMed - in process]

38: Kapil U, Pandey RM, Jain V, Kabra M, Sareen N, Singh Bhadoria A, Vijay J, Nigam S, Khenduja P. Increase in iodine deficiency disorder due to inadequate sustainability of supply of iodized salt in District Solan, Himachal Pradesh. J Trop Pediatr. 2013 Dec;59(6):514-5. doi: 10.1093/tropej/fmt060. Epub 2013 Jul 18. PubMed PMID: 23868574.

Himachal Pradesh is a known endemic area for iodine deficiency disorders. A study was conducted in district Solan with the objective of assessing the prevalence of iodine deficiency disorders in school-age children. Thirty clusters were selected by using the probability-proportionate-to-size cluster sampling methodology. Clinical examination of the thyroid of 1898 children in the age-group of 6-12 years was conducted. Urine and salt samples were collected. The total goiter rate was found to be 15.4%. Median urinary iodine excretion level was 62.5 µg/l. Only 39% of the salt samples had iodine content of ≥15 ppm. Mild iodine deficiency was present in the subjects studied.

PMID: 23868574 [PubMed - in process]

39: Khanduja S, Sinha S, Gogia V, Kakkar A, Vohra R. Modified subretinal dye extrusion technique (MORE-DETECH): subretinal diluted trypan blue for detecting occult retinal breaks in retinal detachment after endotamponade removal. Int Ophthalmol. 2013 Dec;33(6):729-32. doi: 10.1007/s10792-013-9719-5. Epub 2013 Feb 14. PubMed PMID: 23408012.

To investigate the effectiveness of a new technique for the identification of

occult retinal breaks in retinal redetachment after removal of silicone oil endotamponade. The technique involves injection of subretinal dye and extrusion through the unidentified breaks. A prospective interventional case series. Main outcome measures were rate of break detection, rate of retinal attachment at 3 months after removal of endotamponade, and improvement in visual acuity after surgery. A total of 21 patients fulfilled the study criterion. The occult rhegma could be identified successfully in all except two cases (90.4 % success). In most cases the rhegma was identified at the posterior edge of the laser retinopexy scar. Complete retinal attachment could be seen in all cases at 12 weeks after removal of silicone oil. The mean visual acuity improved from logMAR 1.4, preoperatively to logMAR 0.81 ($p = 0.001$) postoperatively. Subretinal dye injection was useful in detecting occult retinal breaks in patients with retinal redetachment and was helpful in preventing surgical failure.

PMID: 23408012 [PubMed - in process]

40: Kumar A, Rani L, Dhole B. Role of oxygen in the regulation of Leydig tumor derived MA-10 cell steroid production: the effect of cobalt chloride. *Syst Biol Reprod Med*. 2013 Dec 12. [Epub ahead of print] PubMed PMID: 24328340.

Abstract We have earlier shown that cobalt chloride (CoCl₂)-induced hypoxia and second messenger 8-bromoadenosine 3', 5'-cyclic adenosine monophosphate (8-Br-cAMP) stimulates vascular endothelial growth factor (VEGF) production in Leydig tumor cell derived MA-10 cells. Both stimuli follow common signal transduction pathways including protein kinase A (PK-A), extracellular regulated kinase 1/2 (ERK1/2), and phosphatidyl inositol-3 kinase/akt (PI3-K/Akt) pathways in the stimulation of VEGF by MA-10 cells. In the present study we investigated the role of CoCl₂ and 8-Br-cAMP on steroid production in MA-10 cells. The MA-10 cells were cultured in Waymouth MB 752/1 medium, supplemented with 15% heat inactivated horse serum. Progesterone was estimated by radioimmunoassay (RIA). We report that 8-Br-cAMP stimulated progesterone production by the MA-10 cells whereas CoCl₂ inhibited the same. Also, 8-Br-cAMP stimulated steroidogenic acute regulatory protein (StAR) and cytochrome P450 side-chain cleavage enzyme (P450scc) mRNAs expression. However, CoCl₂ had no effect on StAR mRNA. Cobalt chloride directly inhibited the expression of P450scc mRNA. The decrease in progesterone production could be attributed to three different mechanisms, (1) an increase in production of reactive oxygen species (ROS), (2) an increase in HIF-1 α activity, and (3) ultimately a decrease in the level of cytochrome P450 side chain cleavage (CYT P450scc). Hypoxia has an action and mechanism of action similar to that of gonadotropins on VEGF production, whereas they have a contrasting effect on steroidogenesis. This study suggests that hypoxia could be as important as gonadotropins in regulating Leydig cell steroidogenesis.

PMID: 24328340 [PubMed - as supplied by publisher]

41: Kumar R, Hota A, Sikka K, Thakar A. Temporomandibular joint ankylosis consequent to ear suppuration. *Indian J Otolaryngol Head Neck Surg*. 2013 Dec;65(Suppl 3):627-30. doi: 10.1007/s12070-013-0666-2. Epub 2013 Jul 10. PubMed PMID: 24427727; PubMed Central PMCID: PMC3889350.

The objective of this study is to describe the complication of temporomandibular joint (TMJ) ankylosis consequent to otitis media. The method applied is prospective case series and data collection done in tertiary referral centre from April 2012 to April 2013. Case description of three adolescent male patients with unilateral TMJ ankylosis consequent to ipsilateral chronic suppurative otitis media. Further literature review of TMJ ankylosis in relation to otitis media for evaluation for predisposing conditions. Surgical treatment by ipsilateral canal

wall down mastoidectomy and concurrent TMJ gap arthroplasty. Surgical exposure confirmed ipsilateral bony ankylosis in all three. Two cases with long standing trismus had developed contralateral disuse fibrous ankylosis and required bilateral gap arthroplasty. Relief of trismus achieved in all three cases. Literature review indicated three similar cases secondary to otitis media. A universal feature among all previous case reports and the current case series was the age at onset of trismus, being at 10 years or less in all. TMJ ankylosis is a rare but potential complication of paediatric ear suppuration. Dehiscence along the tympanosquamosal fissure, tympanic plate and the foraminae of Huschke and Santorini in the paediatric population may predispose to extension of tympanic suppuration to the TMJ.

PMCID: PMC3889350 [Available on 2014/12/1]

PMID: 24427727 [PubMed]

42: Kumar S, Tomar AK, Singh S, Gill K, Dey S, Singh S, Yadav S. Heparin binding carboxypeptidase E protein exhibits antibacterial activity in human semen. *Int J Biol Macromol*. 2013 Dec 21;64C:319-327. doi: 10.1016/j.ijbiomac.2013.12.020. [Epub ahead of print] PubMed PMID: 24365672.

Carboxypeptidase E (CPE) cleaves basic amino acid residues at the C-terminal end and involves in the biosynthesis of numerous peptide hormones and neurotransmitters. It was purified from human seminal plasma by ion exchange, heparin affinity and gel filtration chromatography followed by identification through SDS-PAGE and MALDI-TOF/MS analysis, which was further confirmed by western blotting. CPE was characterized as glycoprotein by Periodic Acid Schiff (PAS) staining and treating with deglycosylating enzyme N-glycosidase F. The interaction of CPE with heparin was illustrated by surface plasmon resonance (SPR) and *in silico* interaction analysis. The association constant (KA) and dissociation constant (KD) of CPE with heparin was determined by SPR and found to be 1.06×10^5 M and 9.46×10^{-6} M, respectively. It was detected in human spermatozoa also by western blotting using mouse anti-CPE primary antibody. 20-100 µg/ml concentration of CPE was observed as highly effective in killing *Escherichia coli* by colony forming unit (CFU) assay. We suggest that CPE might act not only in the innate immunity of male reproductive tract but also regulate sperm fertilization process by interacting heparin.

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PMID: 24365672 [PubMed - as supplied by publisher]

43: Kumar S, Naqvi RA, Ali R, Rani R, Khanna N, Rao DN. CD4+CD25+ T regs with acetylated FoxP3 are associated with immune suppression in human leprosy. *Mol Immunol*. 2013 Dec;56(4):513-20. doi: 10.1016/j.molimm.2013.04.015. Epub 2013 Aug

Leprosy is a chronic human disease that results from infection of *Mycobacterium leprae*. T reg cells have been shown to have important implications in various diseases. However, in leprosy, it is still unclear whether T regs can mediate immune suppression during progression of the disease. In the present study, we have proposed the putative mechanism leading to high proportion of T reg cells and investigated its significance in human leprosy. High levels of TGF-β followed by adaptation of FoxP3(+) naive and memory (CD4(+)CD45RA(+)/RO(+)) T cells were observed as the principal underlying factors leading to higher generation of T reg cells during disease progression. Furthermore, TGF-β was found to be associated with increased phosphorylation-mediated-nuclear-import of SMAD3 and

NFAT towards BL/LL pole to facilitate FoxP3 expression in these cells, the same as justified after using nuclear inhibitors of SMAD3 (SIS3) and NFAT (cyclosporin A) in CD4(+)CD25(+) cells in the presence of TGF- β and IL-2. Interestingly, low ubiquitination of FoxP3 in T reg cells of BL/LL patients was revealed to be a major driving force in conferring stability to FoxP3 which in turn is linked to suppressive potential of T regs. The present study has also pinpointed the presence of CD4(+)CD25(+)IL-10(+) sub class of T regs (Tr1) in leprosy.

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PMID: 23911408 [PubMed - indexed for MEDLINE]

44: Kumar S, Naqvi RA, Bhat AA, Rani R, Ali R, Agnihotri A, Khanna N, Rao DN. IL-10 production from dendritic cells is associated with DC SIGN in human leprosy. *Immunobiology*. 2013 Dec;218(12):1488-96. doi: 10.1016/j.imbio.2013.05.004. Epub 2013 May 18. PubMed PMID: 23816300.

The defective antigen presenting ability of antigen presenting cells (APCs) modulates host cytokines and co-stimulatory signals that may lead to severity of leprosy. In the present study, we sought to evaluate the phenotypic features of APCs along with whether DC SIGN (DC-specific intercellular adhesion molecule-grabbing nonintegrin) influences IL-10 production while moving from tuberculoid (BT/TT) to lepromatous (BL/LL) pole in leprosy pathogenesis. The study revealed an increased expression of DC SIGN on CD11c⁺ cells from BL/LL patients and an impaired form of CD83 (~50 kDa). However, the cells after treatment with GM-CSF+IL-4+ManLAM showed an increased expression of similar form of CD83 on DCs. Upon treatment with ManLAM, DCs were found to show increased nuclear presence of NF- κ B, thus leading to higher IL-10 production. High IL-10 production from ManLAM treated PBMCs further suggested the role of DC SIGN in subverting the DCs function towards BL/LL pole of leprosy. Anti-DC SIGN treatment resulting in restricted nuclear ingress of NF- κ B as well as its acetylation along with enhanced T cell proliferation validated our findings. In conclusion, Mycobacterium leprae component triggers DC SIGN on DCs to induce production of IL-10 by modulating intracellular signalling pathway at the level of transcription factor NF- κ B towards BL/LL pole of disease.

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PMID: 23816300 [PubMed - in process]

45: Kumar S, Jain S, Velpandian T, Petrovich Gerasimenko Y, D Avelev V, Behari J, Behari M, Mathur R. Exposure to extremely low-frequency magnetic field restores spinal cord injury-induced tonic pain and its related neurotransmitter concentration in the brain. *Electromagn Biol Med*. 2013 Dec;32(4):471-83. doi: 10.3109/15368378.2012.743907. Epub 2013 May 8. PubMed PMID: 23656297.

Spinal cord injury (SCI) is unequivocally reported to produce hyperalgesia to phasic stimuli, while both hyper- and hypoalgesia to tonic stimuli. The former is spinally mediated and the latter centrally. Besides, its management is unsatisfactory. We report the effect of magnetic field (MF; 17.96 μ T, 50 Hz) on tonic pain behavior and related neurotransmitters in the brain of complete thoracic (T13) SCI rats at week 8. Adult male Wistar rats were divided into Sham, SCI and SCI+MF groups. Formalin-pain behavior was compared utilizing 5 min block pain rating (PR), 60 min session-PR, time spent in various categories of increasing pain (T0-T3) and flinch incidences. Serotonin (5-HT), dopamine (DA), norepinephrine (NE), gamma-aminobutyric acid (GABA), glutamate and glycine were

estimated in brain tissue by liquid chromatography-mass spectrometry. Session-PR, block-PR and number of flinches were significantly lower, while time spent in categories 0-1 was higher in the SCI versus Sham group. These parameters were comparable in the SCI+MF versus Sham group. 5-HT concentration in cortex, remaining forebrain areas and brain stem (BS), was lower while GABA and NE were higher in BS of SCI, which were comparable with Sham in the SCI+MF group. The concentration of DA, glutamate and glycine was comparable amongst the groups. The data indicate significant hypoalgesia in formalin pain while increased in GABA, NE and decreased in 5-HT post-SCI, which were restored in the SCI+MF group. We suggest beneficial effect of chronic (2 h/day × 8 weeks) exposure to MF (50 Hz, 17.96 μ T) on tonic pain that is mediated by 5-HT, GABA and NE in complete SCI rats.

PMID: 23656297 [PubMed - in process]

46: Madhuprakash J, Singh A, Kumar S, Sinha M, Kaur P, Sharma S, Podile AR, Singh TP. Structure of chitinase D from *Serratia proteamaculans* reveals the structural basis of its dual action of hydrolysis and transglycosylation. *Int J Biochem Mol Biol*. 2013 Dec 15;4(4):166-78. PubMed PMID: 24380021; PubMed Central PMCID: PMC3867703.

Chitinases are known to hydrolyze chitin polymers into smaller chitooligosaccharides. Chitinase from bacterium *Serratia proteamaculans* (SpChiD) is found to exhibit both hydrolysis and transglycosylation activities. SpChiD belongs to family 18 of glycosyl hydrolases (GH-18). The recombinant SpChiD was crystallized and its three-dimensional structure was determined at 1.49 Å resolution. The structure was refined to an R-factor of 16.2%. SpChiD consists of 406 amino acid residues. The polypeptide chain of SpChiD adopts a (β/α)₈ triosephosphate isomerase (TIM) barrel structure. SpChiD contains three acidic residues, Asp149, Asp151 and Glu153 as part of its catalytic scheme. While both Asp149 and Glu153 adopt single conformations, Asp151 is observed in two conformations. The substrate binding cleft is partially obstructed by a protruding loop, Asn30 - Asp42 causing a considerable reduction in the number of available subsites in the substrate binding site. The positioning of loop, Asn30 - Asp42 appears to be responsible for the transglycosylation activity. The structure determination indicated the presence of sulfone Met89 (SMet89). The sulfone methionine residue is located on the surface of the protein at a site where extra domain is attached in other chitinases. This is the first structure of a single domain chitinase with hydrolytic and transglycosylation activities.

PMCID: PMC3867703

PMID: 24380021 [PubMed]

47: Mahey R, Kaur SD, Chumber S, Kriplani A, Bhatla N. Splenectomy during pregnancy: treatment of refractory immune thrombocytopenic purpura. *BMJ Case Rep*. 2013 Dec 20;2013. pii: bcr2013201778. doi: 10.1136/bcr-2013-201778. PubMed PMID: 24363245.

Immune thrombocytopenic purpura (ITP) complicates 1-2/10 000 pregnancies and accounts for 5% of cases of pregnancy-associated thrombocytopenia. Corticosteroids and intravenous immunoglobulin remain the first-line therapy in pregnancy, and a majority of pregnant women respond to this conventional therapy. Other cytotoxic and immunosuppressive agents used for treatment in non-pregnant patients, for example, danazol, cyclophosphamide, vinca alkaloids and azathioprine, are potential teratogens and cannot be administered during pregnancy. For pregnant women with ITP who fail to respond to medical management and are at a significant risk of haemorrhage due to thrombocytopenia, splenectomy

may be considered as an option. We report two cases of splenectomy during pregnancy for refractory ITP. In one patient, it was carried out at 24 weeks, and in the second patient it was carried out during the caesarean section. Splenectomy as a second-line option in cases of refractory severe ITP in pregnancy is discussed.

PMID: 24363245 [PubMed - in process]

48: Mathur VP, Jain V, Pillai RS, Kalra S. Translation and validation of Hindi version of Geriatric Oral Health Assessment Index. *Gerodontology*. 2013 Dec 11. doi: 10.1111/ger.12099. [Epub ahead of print] PubMed PMID: 24325659.

OBJECTIVE: The aim of the study was to translate and validate the oral health-related quality of life assessment tool named Geriatric Oral Health Assessment Index (GOHAI) into Hindi language for use in the Indian population. **METHODOLOGY:** The 12-item GOHAI questionnaire was translated into Hindi, back-translated and compared with the original English version. After pilot testing and appropriate changes, the Hindi version was administered to a group of 500 patients visiting the geriatric medicine clinic in All India Institute of Medical Sciences, New Delhi. The questionnaire was re-administered to 29 participants after a gap of minimum 7 days. The measures for reliability and validity were also assessed.

RESULTS: Cronbach's α score (0.79) showed excellent internal consistency. Item-scale correlations varied from 0.06 to 0.75. Test-retest correlation on the 29 patients showed excellent results (ranging from 0.748 to 0.946). Lower GOHAI scores were associated with patient's self-perception of nutritional status, perceptive need for prosthesis, number of posterior occluding pair of teeth. Higher GOHAI scores were seen with patients with removable prosthesis than with edentulous or partially edentulous participants. Age group was also found to be a significant factor for GOHAI scores.

CONCLUSION: The Hindi version of GOHAI exhibits acceptable validity and reliability and can be used in the elderly Indian population as a measure of oral health-related quality of life.

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PMID: 24325659 [PubMed - as supplied by publisher]

49: Meena A, Jain V, Singh N, Arora N, Jha R. Effect of implant-supported prosthesis on the bite force and masticatory efficiency in subjects with shortened dental arches. *J Oral Rehabil*. 2013 Dec 21. doi: 10.1111/joor.12122. [Epub ahead of print] PubMed PMID: 24372288.

The aim of the study was to assess changes in bite force and masticatory efficiency in shortened dental arch (SDA) subjects rehabilitated with implant-supported restoration for 1st molar. Ten SDA subjects with bilaterally missing mandibular molars (experimental group) were recruited. In each subject, one tapered threaded implant was placed bilaterally in 1st mandibular molar region and restored. Masticatory efficiency was evaluated objectively by measuring the released dye from chewed raw carrots, with a 'spectrophotometer' at 530 nm preoperatively and at 3 months after restoration. Bite force was evaluated using 'bite force measuring appliance' preoperatively, at 6 weeks and at 3 months after restoration. Ten completely dentate-matched subjects (in terms of age, sex, height and weight) acted as control. The results revealed that as compared with the control group, the experimental group showed significantly less ($P < 0.05$)

mean maximum bite force at pre-restoration and at 6 weeks after restoration. Although at 3 months the mean maximum bite force value was less than the control group but the mean difference was statistically insignificant. The mean difference of masticatory efficiency between control and experimental group was statistically significant ($P < 0.05$) before restoration, but was statistically insignificant at 3 months after restoration. Thus it was concluded that after the restoration of mandibular arch with implant-supported prosthesis, both bite force and masticatory efficiency of all SDA subjects increased and were comparable to that of matched completely dentate subjects after 3 months.

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PMID: 24372288 [PubMed - as supplied by publisher]

50: Meena S, Trikha V, Saini P, Kumar N, Kr S. Well-Leg Compartment Syndrome after Fracture Fixation in Hemilithotomy Position: Case Report of a Preventable Condition. *Med Princ Pract*. 2013 Dec 10. [Epub ahead of print] PubMed PMID: 24335075.

Objective: To report a case of subtrochanteric femur fracture that led to intraoperative compartment syndrome in the well leg. Clinical Presentation and Intervention: A 28-year-old obese male who presented with a comminuted subtrochanteric fracture underwent a prolonged open reduction and internal fixation using dynamic condylar screw. In the postoperative period, after the effect of epidural analgesia had worn off, the patient complained of severe pain and swelling of the well leg. A diagnosis of well-leg compartment syndrome was made and urgent two-incision fasciotomy was performed. Conclusion: Obesity and prolonged surgery could have caused the acute compartment syndrome of the well leg in this patient. © 2013 S. Karger AG, Basel.

PMID: 24335075 [PubMed - as supplied by publisher]

51: Meena S, Palaniswamy A, Chowdhury B. Web-based information on minimally invasive total knee arthroplasty. *J Orthop Surg (Hong Kong)*. 2013 Dec;21(3):305-7. PubMed PMID: 24366789.

PURPOSE. To evaluate information available on the internet regarding minimally invasive total knee arthroplasty (TKA). METHODS. The 3 most popular search engines (Google, Yahoo, and MSN) were used to search the keyword 'minimally invasive knee replacement'. The top 50 websites from each search engine were evaluated for authorship and contents; duplicate websites were not double-counted. RESULTS. Of the 150 websites, 51% were authored by a hospital/university, 26% by private medical groups, 14% were news stories, and 9% were from orthopaedic industry sources. 73% offered the opportunity to make an appointment. 18% described the surgical technique, whereas only 9% explained patient eligibility. 25% described the risks, whereas only 3% made reference to peer-reviewed publications. >82% made specific claims regarding the advantages of minimally invasive surgery. CONCLUSION. Most websites providing minimally invasive TKA information were insufficient in terms of explaining surgical technique, patient eligibility, and associated risks.

PMID: 24366789 [PubMed - in process]

52: Meena S, Singla A, Chowdhury B. Making advanced trauma life support more effective. *Saudi Med J*. 2013 Dec;34(12):1121-2. PubMed PMID: 24343460.

PMID: 24343460 [PubMed - in process]

53: Mehla J, Pahuja M, Gupta P, Dethe S, Agarwal A, Gupta YK. Clitoria ternatea ameliorated the intracerebroventricularly injected streptozotocin induced cognitive impairment in rats: behavioral and biochemical evidence. *Psychopharmacology (Berl)*. 2013 Dec;230(4):589-605. doi: 10.1007/s00213-013-3185-7. Epub 2013 Jul 6. PubMed PMID: 23832386.

RATIONALE: Clitoria ternatea, commonly known as Aparajita, is used as Medhya rasayana in Ayurveda. The role of C. ternatea in experimental models of cognitive impairment is yet to be explored.

OBJECTIVES: The present study was designed to study the effect of aqueous and hydroalcoholic extracts of C. ternatea on biochemical and behavioral parameters related to cognitive impairment in in vitro and in vivo studies.

METHODS: In vitro free radical scavenging and enzyme-inhibitory (cholinesterase, glycogen synthase kinase-3- β , rho kinase, prolyl endopeptidase, catechol-O-methyl transferase, and lipoxygenase) activities of aqueous and hydroalcoholic extracts of C. ternatea plant were evaluated. Based on in vitro results, hydroalcoholic extract of C. ternatea (100, 300, and 500 mg/kg, p.o.) was selected for evaluation in intracerebroventricularly injected streptozotocin (STZ)-induced cognitive impairment in male Wistar rats. Behavioral assessment was performed at baseline and on the 14th, 21st, and 28th days after STZ injection using elevated plus maze, passive avoidance, Morris water maze, and photoactometer. Oxidative stress parameters (malondialdehyde, reduced glutathione, nitric oxide levels, and superoxide dismutase activity), cholinesterase activity, and rho kinase (ROCK II) expression were studied in cerebral cortex and hippocampus of rats' brain at the end of the study.

RESULTS: The hydroalcoholic extract possessed significantly more in vitro antioxidant and enzyme-inhibitory activities as compared to aqueous extract. The hydroalcoholic extract of C. ternatea prevented STZ-induced cognitive impairment dose dependently by reducing oxidative stress, cholinesterase activity, and ROCK II expression.

CONCLUSION: In vitro and in vivo results suggest the potential of hydroalcoholic extract of C. ternatea for treatment of cognitive deficit in neurological disorders.

PMID: 23832386 [PubMed - in process]

54: Mutreja D, Kotru M, Aggarwal M, Tejwani N, Sharma RK, Pati HP. Hepatosplenic gamma delta T-cell lymphoma in a boy with visceral leishmaniasis: a case report. *J Med Case Rep*. 2013 Dec 13;7(1):269. doi: 10.1186/1752-1947-7-269. PubMed PMID: 24330681; PubMed Central PMCID: PMC3878667.

INTRODUCTION: Hepatosplenic gamma delta T-cell lymphoma is a rare peripheral T-cell lymphoma of cytotoxic T-cell origin with an aggressive clinical course. Chronic immunosuppression has been proposed as a possible pathogenetic mechanism. No association of hepatosplenic gamma delta T-cell lymphoma with visceral leishmaniasis has been described in the past. We describe a case of an adolescent boy with hepatosplenic gamma delta T-cell lymphoma with leukemic presentation, who was diagnosed to have visceral leishmaniasis, 9 months prior to presentation at our center. To the best of our knowledge this is the first report of hepatosplenic gamma delta T-cell lymphoma with a prior history of visceral leishmaniasis in the medical literature.

CASE PRESENTATION: A 13-year-old Indian boy presented to the hematology out-patient department with a history of progressive abdominal distension of 9 months' duration and low grade fever of 2 months' duration. He was a known case of visceral leishmaniasis and was treated with some clinical improvement in the

past. However, his symptoms recurred and he was diagnosed to have hepatosplenic gamma delta T-cell lymphoma at our center. Cytogenetic analysis showed characteristic karyotype of isochromosome 7.

CONCLUSIONS: Chronic antigen stimulation due to visceral leishmaniasis may have led to an expansion of gamma delta T cells in our patient, and immunophenotypic analysis of bone marrow aspirate and characteristic karyotype helped to achieve the diagnosis. The aim of this case report is to highlight the rare association of hepatosplenic T-cell lymphoma with visceral leishmaniasis.

PMCID: PMC3878667

PMID: 24330681 [PubMed]

55: Natanasabapathi G, Bisht RK. Verification of Gamma Knife extend system based fractionated treatment planning using EBT2 film. *Med Phys*. 2013 Dec;40(12):122104. doi: 10.1118/1.4832138. PubMed PMID: 24320531.

Purpose: This paper presents EBT2 film verification of fractionated treatment planning with the Gamma Knife (GK) extend system, a relocatable frame system for multiple-fraction or serial multiple-session radiosurgery. Methods: A human head shaped phantom simulated the verification process for fractionated Gamma Knife treatment. Phantom preparation for Extend Frame based treatment planning involved creating a dental impression, fitting the phantom to the frame system, and acquiring a stereotactic computed tomography (CT) scan. A CT scan (Siemens, Emotion 6) of the phantom was obtained with following parameters: Tube voltage-110 kV, tube current-280 mA, pixel size-0.5 × 0.5 and 1 mm slice thickness. A treatment plan with two 8 mm collimator shots and three sectors blocking in each shot was made. Dose prescription of 4 Gy at 100% was delivered for the first fraction out of the two fractions planned. Gafchromic EBT2 film (ISP Wayne, NJ) was used as 2D verification dosimeter in this process. Films were cut and placed inside the film insert of the phantom for treatment dose delivery. Meanwhile a set of films from the same batch were exposed from 0 to 12 Gy doses for calibration purposes. An EPSON (Expression 10000 XL) scanner was used for scanning the exposed films in transparency mode. Scanned films were analyzed with inhouse written MATLAB codes. Results: Gamma index analysis of film measurement in comparison with TPS calculated dose resulted in high pass rates >90% for tolerance criteria of 1%/1 mm. The isodose overlay and linear dose profiles of film measured and computed dose distribution on sagittal and coronal plane were in close agreement. Conclusions: Through this study, the authors propose treatment verification QA method for Extend frame based fractionated Gamma Knife radiosurgery using EBT2 film.

PMID: 24320531 [PubMed - in process]

56: Patil V, Pattanayak RD, Mishra AK. Predictors of suicide attempt in early-onset psychosis: methodological issues and concerns. *J Clin Psychiatry*. 2013 Dec;74(12):1264. doi: 10.4088/JCP.lr08556. PubMed PMID: 24434097.

PMID: 24434097 [PubMed - in process]

57: Prasad S, Varshney S, Bist SS, Mishra S, Kabdwal N. Correlation study between nasal septal deviation and rhinosinusitis. *Indian J Otolaryngol Head Neck Surg*. 2013 Dec;65(4):363-6. doi: 10.1007/s12070-013-0665-3. Epub 2013 Sep 20. PubMed PMID: 24427600; PubMed Central PMCID: PMC3851508.

Chronic rhinosinusitis (CRS) is a major cause of concern worldwide. Nasal septal deviation (NSD) may either cause osteomeatal obstruction or may interfere with

proper airflow and potentially predispose to sinusitis. Due to the lack of a universally accepted classification on NSD it has not been established whether NSD influences the development of sinusitis or not. Mladina in 1987 proposed a classification in which he classified NSD into seven different categories. The aims and objectives of this study are to observe the correlation between NSD and CRS and to study the relation of different grades of NSD with sinusitis as per Mladina's classification. Patients above 18 years of age presenting to ENT OPD with complaint of nasal obstruction, nasal discharge and headache were subjected to CT scan (nose and paranasal sinuses) coronal section with contiguous 5 mm thickness slice perpendicular to the hard palate in prone position. Presence of NSD and sinusitis was observed. 120 cases were studied. The mean age was 28.7 ± 9.37 years with age range 18-58 years. There were 92 (76.6 %) males and 28 (23.3 %) females with a M:F ratio of 3:1. Out of 120 cases, 114 (95 %) cases had NSD. Sinusitis was present in 63 (52.5 %) cases on CT scan. Out of 57 (50.0 %) cases with NSD and sinusitis, 13 (11.4 %) cases had sinusitis on the same side of NSD, 14 (12.28 %) cases had sinusitis on the side opposite to NSD and 30 (26.31 %) cases had sinusitis on both sides of NSD. There was no statistically significant relationship between NSD and sinusitis. As per Mladina's classification vertical deviations accounted for majority of patient's septal deviations with 31 (27.1 %) cases of type II NSD and 24 (21.1 %) cases of type I NSD. The maximum number of cases with sinusitis had vertical deviations with type I NSD in 17 (27.0 %) cases and type II NSD in 18 (28.5 %) cases. The present study reveals that there is no correlation between NSD and sinusitis. Vertical deviations type I and type II are more prone to sinusitis as they involve the nasal valve area.

PMCID: PMC3851508 [Available on 2014/12/1]
PMID: 24427600 [PubMed]

58: Pushker N, Shrey D, Kashyap S, Sen S, Khurana S, Sharma S. Ectopic meningioma of the orbit. *Int Ophthalmol*. 2013 Dec;33(6):707-10. doi: 10.1007/s10792-012-9708-0. Epub 2013 Jan 21. PubMed PMID: 23334701.

Ectopic meningiomas within the orbit are very rare. Most of the previously reported cases were located along the medial wall. Here we report on three cases of ectopic meningiomas presenting as superomedial orbital masses along with their radiological and histopathological features. All three patients underwent surgical excision of the tumor via anterior orbitotomy.

PMID: 23334701 [PubMed - in process]

59: Rai NK, Singh R. Reversible sensory motor conduction abnormalities in hypokalemic paralysis. *J Clin Neuromuscul Dis*. 2013 Dec;15(2):44-6. doi: 10.1097/CND.000000000000013. PubMed PMID: 24263029.

PMID: 24263029 [PubMed - in process]

60: Raj D, Lodha R, Pandey A, Mukherjee A, Agrawal A, Kabra SK; New Delhi Childhood Asthma Study Group. Aeroallergen sensitization in childhood asthmatics in northern India. *Indian Pediatr*. 2013 Dec 8;50(12):1113-8. Epub 2013 Jul 5. PubMed PMID: 23999673.

OBJECTIVE: To determine the prevalence of sensitization to common aeroallergens in asthmatic children and study the differences in characteristics of atopics and

non atopics.

DESIGN: Analysis of data from a prospective cohort study.

SETTING: Pediatric Chest Clinic of tertiary care center in Northern India.

PATIENTS: Asthmatic children from 5-18 year of age.

MAIN OUTCOME MEASURES: Prevalence of sensitization to common aeroallergens.

RESULTS: Skin prick testing (SPT) was performed on 180 children above 5 years of age, with a mean (SD) age of 111.4 (34.2) months. 100 children (55.6%) were sensitized to at least one aeroallergen, suggesting atopy; 68 (37.8%) were sensitized to more than one allergen. 36.7% children were sensitized to housefly antigen; 31.1% to rice grain dust, 18.3% to cockroach, and 7.8% to house dust mite antigens. Atopic children had significantly higher median FENO during follow up than non-atopic children (17.5 ppb vs 13 ppb, $P=0.002$). There was a positive correlation between age and the number of allergens that an individual was sensitized to ($r= 0.21$; $P=0.0049$).

CONCLUSIONS: More than half of asthmatic children in our cohort had sensitization to one or more aeroallergens suggesting atopy; sensitization was most commonly seen to housefly antigen and rice grain dust. Atopic children had significantly higher FENO measurements during follow up as compared to non-atopic children.

PMID: 23999673 [PubMed - in process]

61: Ramakrishnan S, Kukreti BB, Ramakrishnan L, Salahuddin S, Pendharkar A, Karthikeyan G, Bhargava B, Juneja R, Seth S, Kothari SS, Saxena A, Bahl VK. Inflammatory markers are elevated in Eisenmenger syndrome. *Pediatr Cardiol.* 2013 Dec;34(8):1791-6. doi: 10.1007/s00246-013-0715-3. Epub 2013 May 11. PubMed PMID: 23666048.

Inflammation may be an important contributing factor to the progression of Eisenmenger syndrome (ES). Markers of systemic inflammation in ES have not been systematically studied. Inflammatory markers including high-sensitivity C-reactive protein (hs-CRP), interleukin-2 (IL-2), IL-6, and interferon- γ (IFN- γ) were measured in 42 consecutive ES patients (mean age, 24.3 ± 10.6 years) compared with their levels in 22 healthy control subjects. The patients were followed up for a mean duration of 16.3 ± 13.7 months. The levels of inflammatory markers were correlated with clinical and hemodynamic variables at baseline and the outcomes of death, hospitalization, and worsening World Health Organization (WHO) functional class at follow-up evaluation. Compared with the control subjects, ES patients showed a significant elevation in hs-CRP (2.99 ± 3.5 vs 1.1 ± 0.9 mg/dl; $p = 0.002$) and IFN- γ (41.3 ± 43.6 vs 10.4 ± 6.9 pg/ml; $p < 0.001$) levels. The levels of IL-2 and IL-6 also were elevated but did not differ significantly from those in the control subjects. The patients with hs-CRP levels higher than 3 mg/dl were significantly older (28.9 ± 10.6 vs 21.5 ± 9.8 years) and had a significantly shorter 6-min walk distance (421.5 ± 133.2 vs 493.3 ± 74.8 m). The levels of inflammatory markers did not correlate with baseline parameters or clinical outcomes. To conclude, the levels of hs-CRP and IFN- γ are significantly elevated in ES. Elevated hs-CRP in ES was associated with older age and shorter 6-min walk distance, but the levels of inflammatory markers were not predictive of clinical events.

PMID: 23666048 [PubMed - in process]

62: Rani N, Bharti S, Manchanda M, Nag TC, Ray R, Chauhan SS, Kumari S, Arya DS. Regulation of Heat Shock Proteins 27 and 70, p-Akt/p-eNOS and MAPKs by Naringin Dampens Myocardial Injury and Dysfunction In Vivo after Ischemia/Reperfusion. *PLoS One.* 2013 Dec 6;8(12):e82577. doi: 10.1371/journal.pone.0082577. PubMed PMID: 24324809; PubMed Central PMCID: PMC3855773.

Naringin has antioxidant properties that could improve redox-sensitive myocardial ischemia reperfusion (IR) injury. This study was designed to investigate whether naringin restores the myocardial damage and dysfunction in vivo after IR and the mechanisms underlying its cardioprotective effects. Naringin (20–80 mg/kg/day, p.o.) or saline were administered to rats for 14 days and the myocardial IR injury was induced on 15(th) day by occluding the left anterior descending coronary artery for 45 min and subsequent reperfusion for 60 min. Post-IR rats exhibited pronounced cardiac dysfunction as evidenced by significantly decreased mean arterial pressure, heart rate, +LVdP/dt max (inotropic state), -LVdP/dt max (lusitropic state) and increased left ventricular end diastolic pressure as compared to sham group, which was improved by naringin. Further, on histopathological and ultrastructural assessments myocardium and myocytes appeared more normal in structure and the infarct size was reduced significantly in naringin 40 and 80 mg/kg/day group. This amelioration of post-IR-associated cardiac injury by naringin was accompanied by increased nitric oxide (NO) bioavailability, decreased NO inactivation to nitrotyrosine, amplified protein expressions of Hsp27, Hsp70, β -catenin and increased p-eNOS/eNOS, p-Akt/Akt, and p-ERK/ERK ratio. In addition, IR-induced TNF- α /IKK- β /NF- κ B upregulation and JNK phosphorylation were significantly attenuated by naringin. Moreover, western blotting and immunohistochemistry analysis of apoptotic signaling pathway further established naringin cardioprotective potential as it upregulated Bcl-2 expression and downregulated Bax and Caspase-3 expression with reduced TUNEL positivity. Naringin also normalized the cardiac injury markers (lactate dehydrogenase and creatine kinase-MB), endogenous antioxidant activities (superoxide dismutase, reduced glutathione and glutathione peroxidase) and lipid peroxidation levels. Thus, naringin restored IR injury by preserving myocardial structural integrity and regulating Hsp27, Hsp70, p-eNOS/p-Akt/p-ERK signaling and inflammatory response.

PMCID: PMC3855773

PMID: 24324809 [PubMed - in process]

63: Rastogi S, Sankineani SR, Nag HL, Mohanty S, Shivanand G, Marimuthu K, Kumar R, Rijal L. Intralesional autologous mesenchymal stem cells in management of osteonecrosis of femur: a preliminary study. *Musculoskelet Surg*. 2013 Dec;97(3):223–8. doi: 10.1007/s12306-013-0273-0. Epub 2013 Jul 14. PubMed PMID: 23852661.

BACKGROUND: Management of early stages of osteonecrosis aims to prevent the collapse of the femoral head by attempts at restoring the vascularity of femoral head. Bone marrow-derived mononuclear cells with their angiogenic and osteogenic properties appear to have the potential to halt the disease process when injected intralesionally following core decompression.

MATERIALS AND METHODS: Forty patients (60 hips) with stage I, II or III (ARCO system) osteonecrosis of femoral head were treated by either core decompression and isolated mononuclear cells (group A) or core decompression and unprocessed bone marrow injection (group B). The patients were followed up clinically and radiologically for a minimum of 2 years. The functional outcome was assessed in terms of Harris hip score, and disease progression was assessed radiologically by comparing the preoperative and follow-up MRI at the end of 2 years.

RESULTS: On 2-year follow-up, there was considerable improvement in the hip function as measured by the Harris hip score in both the groups ($p = 0.031$). On MRI, there was a decrease in the size of the lesion in group A ($p = 0.03$). Three of 30 hips (10.0 %) in group B required total hip replacement.

CONCLUSIONS: Implantation of autologous bone marrow stem cells in avascular necrosis of femoral head is a safe and effective procedure and has better outcome

than bone marrow for early stage of avascular necrosis of femoral head.

PMID: 23852661 [PubMed - in process]

64: Sampath Kumar V, Khan SA, Palaniswamy A, Rastogi S. Multifocal osteoid osteoma of tibia. *BMJ Case Rep.* 2013 Dec 5;2013. pii: bcr2013201712. doi: 10.1136/bcr-2013-201712. PubMed PMID: 24311429.

Multifocal osteoid osteoma of the bone is extremely rare. We report a 25-year-old man who presented with pain in the left leg since 11 months which was partially relieved by over-the-counter analgesics. Radiograph demonstrated two lytic lesions with surrounding sclerosis along the anterior cortex of the left tibia. Three-phase Tc 99m bone and CT scans confirmed the diagnosis of multifocal osteoid osteoma. The patient underwent surgical excision followed by protected weight bearing. The patient was asymptomatic at 6 months postoperatively. Multifocal osteoid osteoma needs to be considered in the differential diagnosis of multiple lytic lesions in the bone.

PMID: 24311429 [PubMed - in process]

65: Sarvottam K, Yadav RK. Adiponectin, Interleukin-6, and Endothelin-1 Correlate with Modifiable Cardiometabolic Risk Factors in Overweight/Obese Men. *J Altern Complement Med.* 2013 Dec 13. [Epub ahead of print] PubMed PMID: 24328421.

PMID: 24328421 [PubMed - as supplied by publisher]

66: Sehgal R, Gulati S, Sapra S, Tripathi M, Kabra M, Pandey RM. Neurodevelopmental and epilepsy outcome in children aged one to five years with infantile spasms-A North Indian cohort. *Epilepsy Res.* 2013 Dec 30. pii: S0920-1211(13)00341-0. doi: 10.1016/j.epilepsyres.2013.12.009. [Epub ahead of print] PubMed PMID: 24439210.

PURPOSE: The present study was planned as there is paucity of outcome data of children with infantile spasms, from India where profile of patients is different from the western world. Moreover, most previous studies have either not used strict inclusion criteria or standardized psychometric tests for developmental outcome.

METHODS: Ninety-five children, aged one-to-five years under follow up for more than six months in Pediatric Neurology Clinic of a tertiary care hospital with the diagnosis of infantile spasm were enrolled in this cross-sectional study if they had completed one or more years after the onset of spasms. The study period was January-December 2011. Neurodevelopment of each child was assessed using Development Profile 3 and Gross Motor Function Classification System. History regarding epilepsy frequency and control in the last one year was taken.

RESULTS: Perinatal asphyxia was the commonest etiology in 43/95 children (45.2%). Favorable neurodevelopmental outcome was observed in 8/95 patients. Favorable epilepsy outcome in 58/95 (61.1%) patients was associated with treatment lag \leq 3 months between apparent onset of spasms and institution of therapy {OR 2 (1.1-3.8)} and response to first line antiepileptic drug {5 (2.6-10)}.

CONCLUSIONS: The commonest etiology was potentially preventable perinatal cause. Early appropriate treatment may have a favorable epilepsy outcome.

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PMID: 24439210 [PubMed - as supplied by publisher]

67: Sehra SV, Titiyal JS, Sharma N, Tandon R, Sinha R. Change in corneal

microstructure with rigid gas permeable contact lens use following collagen cross-linking: an in vivo confocal microscopy study. *Br J Ophthalmol*. 2013 Dec 24. doi: 10.1136/bjophthalmol-2013-303934. [Epub ahead of print] PubMed PMID: 24368629.

AIM: To study corneal microstructural changes with use of rigid gas permeable contact lenses (CLs) in keratoconus patients following collagen cross-linking (CXL).

METHODS: In a prospective, non-randomised, comparative case series, keratoconus patients with documented progression were offered CXL (365 nm, 3 mW/cm², 30 min with 0.1% riboflavin). Patients who refused CXL were fitted with CL and followed up for 6 months (keratoconus (KL)-CL; 25 eyes). Patients who underwent CXL were either fitted with CL 3 months after the procedure (CXL-CL; 26 eyes) or followed up with only spectacle correction (CXL-SL; 21 eyes). Outcome measures of over-refraction and corneal microstructure (confocal microscopy) were evaluated at time of CXL and 1, 2, 3, 4, 6 and 9 months after CXL.

RESULTS: There was a myopic shift in over-refraction by 0.37 D in CXL-CL ($p=0.00$), and 16/26 eyes required prescription of spectacles over CL to provide optimum vision; change in over-refraction was not seen in KC-CL. Patients using CL (CXL-CL and KC-CL) showed evidence of epithelial cell stress with increase in the superficial epithelial cell size and decrease in basal epithelial cell density. They also had a decrease in corneal sub-basal nerve plexus (CSNP) density and branching. Patients using spectacles after CXL showed regeneration of the sub-basal nerve plexus. Stromal keratocyte regeneration was unaffected with CL use.

CONCLUSIONS: CL use after CXL is associated with a delay in the regeneration of the CSNP and epithelial cell stress.

PMID: 24368629 [PubMed - as supplied by publisher]

68: Sengupta J, Ghosh D. Multi-level and multi-scale integrative approach to the understanding of human blastocyst implantation. *Prog Biophys Mol Biol*. 2013 Dec 14. pii: S0079-6107(13)00130-2. doi: 10.1016/j.pbiomolbio.2013.12.001. [Epub ahead of print] PubMed PMID: 24342377.

Implantation is a complex process which results in fixation of zona pellucida free blastocyst to the maternal uterine endometrium. In the human, it involves progesterone mediated preparation of endometrium, age- and stage-matched development of pre-implantation embryo, and interaction between embryo and endometrium. In the present essay, we present the case to explain why there is a necessity of undertaking multi-level, multi-scale integrative approach to deconstruct the succession process of endometrial development to the climax of implantation.

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PMID: 24342377 [PubMed - as supplied by publisher]

69: Sethuraman G, Bhari N. Common Skin Problems in Children. *Indian J Pediatr*. 2013 Dec 22. [Epub ahead of print] PubMed PMID: 24362956.

Childhood dermatological problems contribute about one-third of all consultations in the setting of both pediatrics and dermatology outpatient services. Skin disorders in children may cause anxiety to parents. General Practitioners should be familiar with the common prevalent skin problems as immediate pediatric dermatology consultation may not be possible. Infections, infestations and

dermatitis are the most prevalent diseases among Indian children. The scope of this review is to briefly highlight these common and other important dermatological problems in children.

PMID: 24362956 [PubMed - as supplied by publisher]

70: Shabir I, Khurana ML, Marumudi E, Khadgawat R, Ammini AC. Novel nucleotide insertions in two unrelated Indian patients with 5 α reductase 2 deficiency leading to premature termination of SRD5A2 enzyme. *Steroids*. 2013 Dec 11;78(12-13):1159-63. doi: 10.1016/j.steroids.2013.08.010. Epub 2013 Sep 4. PubMed PMID: 24012728.

T is converted to a more potent androgen, DHT by the action of microsomal membrane enzyme 5 α reductase 2. Defects in 5 α reductase 2 isozyme results in incomplete virilisation of external male genitalia. Mutations in SRD5A2 gene leads to diminished enzyme activity, thus hampering DHT synthesis from T. We describe two unrelated patients from India with 5 α RD2 due to novel insertion of nucleotides in the exon 1 of SRD5A2 gene that lead to premature termination of protein. Master S (case 1; III.8) was 3years old at initial evaluation, had perineoscrotal hypospadias, microphallus and both testes were palpable in the inguinal region. Master P (case 2; III.9) was born as normal full term baby. He had primary complaint of microphallus, penoscrotal hypospadias and gonads in the inguinal region. Diagnosis of 5 α RD2 was made, as T/DHT ratio in the two cases was 41 and 131.2 respectively. Sequence analysis of SRD5A2 gene showed an insertion of nucleotides TA in exon 1 (c.188_189). This resulted in premature termination of the protein due to stop codon at amino acid position 7. The protein formed is drastically truncated and inadequate protein synthesized explains the phenotypic characteristics of our patients.

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PMID: 24012728 [PubMed - in process]

71: Sharma P, Dube D, Sinha M, Dey S, Kaur P, Sharma S, Singh T. Erratum: Structural basis of heparin binding to camel peptidoglycan recognition protein-S. *Int J Biochem Mol Biol*. 2013 Dec 15;4(4):215-216. eCollection 2013. PubMed PMID: 24380026; PubMed Central PMCID: PMC3867708.

Short peptidoglycan recognition protein (PGRP-S) is a member of the innate immunity system in mammals. PGRP-S from *Camelus dromedarius* (CPGRP-S) is found to be highly potent against bacterial infections. It is capable of binding to a wide range of pathogen-associated molecular patterns (PAMPs) including lipopolysaccharide (LPS), lipoteichoic acid (LTA) and peptidoglycan (PGN). The heparin-like polysaccharides have also been observed in some bacteria such as the capsule of K5 *Escherichia coli* thus making them relevant for determining the nature of their interactions with CPGRP-S. The binding studies of CPGRP-S with heparin disaccharide in solution using surface plasmon resonance gave a value 3.3×10^{-7} M for the dissociation constant (Kd). The structure of the heparin bound CPGRP-S determined at 2.8Å resolution revealed the presence of a bound heparin molecule in the binding pocket of CPGRP-S. It was found anchored tightly to the protein with the help of several ionic and hydrogen bonded interactions. Three sulphate groups of heparin S1, S2 and S3 have been found to interact with residues, Arg-31, Lys-90, Thr-97, Asn-99, Asn-140, Gln-150 and Arg-170 of CPGRP-S. The binding site includes two subsites, S-I and S-II with cleftlike structures. Heparin disaccharide is bound in subsite S-I. Previously determined structures of the complexes of CPGRP-S with LPS, LTA and PGN also showed that their glycan

moieties were also held in subsite S-I indicating that heparin disaccharide also represents an important element for the recognition by CPGRP-S.[This corrects the article on p. 86 in vol. 3].

PMCID: PMC3867708

PMID: 24380026 [PubMed - as supplied by publisher]

72: Sharma SK, Kumar S, Agrawal N, Singh L, Mukherjee A, Seth T, Mishra P, Mathur S, Dar L, Mahapatra M. Cytomegalovirus reactivation following hematopoietic stem cell transplantation. *J Infect Dev Ctries*. 2013 Dec 15;7(12):1003-7. doi: 10.3855/jidc.2947. PubMed PMID: 24334950.

INTRODUCTION: There is a high prevalence of cytomegalovirus (CMV) seropositivity in developing countries. An apparent risk of CMV reactivation increases following hematopoietic stem cell transplantation. With effective surveillance and timely treatment using anti-viral therapy, morbidity and mortality associated with CMV reactivation can be reduced. **Objectives:** To evaluate the incidence and morbidity associated with CMV reactivation following hematopoietic stem cell transplantation.

METHODOLOGY: We retrospectively analysed 136 hematopoietic stem cell transplant recipients at our centre for CMV reactivation and their complications.

Quantification of CMV-DNA was done by PCR. CMV disease was confirmed histologically via CMV inclusion bodies or immunostaining of biopsy of the affected organ, mainly the gastrointestinal tract.

RESULTS: A total of 13 out of 136 patients (9.56%) had CMV reactivation. 6 out of 13 patients had CMV disease, 3 of which died (23.1% of patients with CMV reactivation). CMV reactivation occurred at a median duration of 52.5 days post transplantation (range 35-178 days). The gastrointestinal tract was the organ most commonly affected by CMV. The median follow-up was 14 months (range 6 - 64 months).

CONCLUSION: Through a higher rate of sero-prevalance in developing countries, the incidence of CMV infection following hematopoietic stem cell transplantation is comparable to that reported in Western literature. Oral valganciclovir was an effective pre-emptive therapy for CMV disease.

PMID: 24334950 [PubMed - in process]

73: Shimony A, Grandi SM, Pilote L, Joseph L, O'Loughlin J, Paradis G, Rinfret S, Sarrafzadegan N, Adamjee N, Yadav R, Gamra H, Diiodati JG, Eisenberg MJ; for the ZESCA Investigators. Utilization of Evidence-Based Therapy for Acute Coronary Syndrome in High-Income and Low/Middle-Income Countries. *Am J Cardiol*. 2013 Dec 12. pii: S0002-9149(13)02369-2. doi: 10.1016/j.amjcard.2013.11.024. [Epub ahead of print] PubMed PMID: 24440324.

Limited data exist regarding the management of patients with acute coronary syndrome (ACS) in high-income countries compared with low/middle-income countries. We aimed to compare in-hospital trends of revascularization and prescription of medications at discharge in patients with ACS from high-income (Canada and United States) and low/middle-income (India, Iran, Pakistan, and Tunisia) countries. Data from a double-blind, placebo-controlled, randomized trial investigating the effect of bupropion on smoking cessation in patients after an enzyme-positive ACS was used for our study. A total of 392 patients, 265 and 127 from high-income and from low/middle-income countries, respectively, were enrolled. Patients from high-income countries were older, and were more likely to have diagnosed hypertension and dyslipidemia. During the index hospitalization, patients from high-income countries were more likely to be treated by

percutaneous coronary intervention (odds ratio [OR] 19.7, 95% confidence interval [CI] 10.5 to 37.0). Patients with ST elevation myocardial infarction from high-income countries were more often treated by primary percutaneous coronary intervention (OR 16.3, 95% CI 6.3 to 42.3) in contrast with thrombolytic therapy (OR 0.24, 95% CI 0.14 to 0.41). Patients from high-income countries were also more likely to receive evidence-based medications at discharge (OR 2.32, 95% CI 1.19 to 4.52, a composite of aspirin, clopidogrel, and statin). In conclusion, patients with ACS in low/middle-income countries were less likely to be revascularized and to receive evidence-based medications at discharge. Further studies are needed to understand the underutilization of procedures and evidence-based medications in low/middle-income countries.

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PMID: 24440324 [PubMed - as supplied by publisher]

74: Shreshtha D, Sikka K, Singh CA, Thakar A. Foreign body esophagus: when endoscopic removal fails... *Indian J Otolaryngol Head Neck Surg.* 2013 Dec;65(4):380-2. doi: 10.1007/s12070-013-0662-6. Epub 2013 Jun 29. PubMed PMID: 24427604; PubMed Central PMCID: PMC3851502.

Aspiration or ingestion of a foreign body has frequently been reported in the pediatric and in the adult population. Among many foreign bodies to be ingested, artificial denture is one to be impacted in the esophagus, especially among the elderly. Radiolucency of dental prosthesis complicates early diagnosis of an impacted or ingested dental prosthesis. Rigid and flexible esophagoscopes have been used to retrieve the foreign body from the esophagus but the need for open surgery to remove the foreign body as a rescue procedure to endoscopy or the primary procedure has not been well defined. Here we report a case of impacted foreign body esophagus which was managed primarily by surgery and another case where surgery was performed after trials of endoscopic approach had failed.

PMCID: PMC3851502 [Available on 2014/12/1]
PMID: 24427604 [PubMed]

75: Shyam Kumar S, Thakar A. Complex glomus jugulare tumor: management issues. *Indian J Otolaryngol Head Neck Surg.* 2013 Dec;65(Suppl 3):676-81. doi: 10.1007/s12070-011-0399-z. Epub 2011 Dec 27. PubMed PMID: 24427738; PubMed Central PMCID: PMC3889365.

Glomus tumors are rare and locally aggressive, vascular paragangliomas of the skull base. Tumors may progress to cause lower cranial nerve palsies and involve the major vascular structure in the skull base, and thus pose very difficult surgical challenges. One such case is presented, the management problems in such "complex glomus jugulare" tumors are discussed, and the literature reviewed.

PMCID: PMC3889365 [Available on 2014/12/1]
PMID: 24427738 [PubMed]

76: Singh AK, Gaur P, Das SN. Natural killer T cell anergy, co-stimulatory molecules and immunotherapeutic interventions. *Hum Immunol.* 2013 Dec 25. pii: S0198-8859(13)00598-3. doi: 10.1016/j.humimm.2013.12.004. [Epub ahead of print] PubMed PMID: 24373798.

Natural killer T (NKT) cells are a unique subset of glycolipid-reactive T lymphocytes that share properties with natural killer (NK) cells. These lymphocytes can produce array of cytokines and chemokines that modulate the

immune response, and play a pivotal role in cancer, autoimmunity, infection and inflammation. Owing to these properties, NKT cells have gained attentions for its potential use in antitumor immunotherapies. To date several NKT cell-based clinical trials have been performed in patients with cancer using its potent ligand α -galactosylceramide (α -GalCer). However, inconsistent therapeutic benefit, and inevitable health risks associated with drug dose and NKT cell activation have been observed. α -GalCer-activated NKT cells become anergic and produce both Th1 and Th2 cytokines that may function antagonistically, limiting the desired effector functions. Besides, various co-stimulatory and signaling molecules such as programmed death-1 (PD-1; CD279), casitas B-cell lymphoma-b (Cbl-b) and CARMA1 have been shown to be implicated in the induction of NKT cell anergy. In this review, we discuss the role of such key regulators and their functional mechanisms that may facilitate the development of improved approaches to overcome NKT cell anergy. In addition, we describe the evidences indicating that tailored-ligands can optimally activate NKT cells to obtain desired immune responses.

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PMID: 24373798 [PubMed - as supplied by publisher]

77: Srivastava A, Sengupta J, Kriplani A, Roy KK, Ghosh D. Profiles of cytokines secreted by isolated human endometrial cells under the influence of chorionic gonadotropin during the window of embryo implantation. *Reprod Biol Endocrinol*. 2013 Dec 17;11:116. doi: 10.1186/1477-7827-11-116. PubMed PMID: 24345207; PubMed Central PMCID: PMC3878507.

BACKGROUND: Several studies have indicated that human pre-implantation embryo-derived chorionic gonadotropin (hCG) may influence the implantation process by its action on human endometrial epithelial and stromal cells. Despite reports indicating that hCG acts on these cells to affect the production of several cytokines and growth factors (e.g., MIF, IGF-I, VEGF, LIF, IL-11, GMCSF, CXL10 and FGF2), our understanding of the integral influence of hCG on paracrine interactions between endometrial stromal and epithelial cells during implantation is very limited.

METHODS: In the present study, we examined the profile of 48 cytokines in the conditioned media of primary cell cultures of human implantation stage endometrium. Endometrial epithelial cells (group 1; n=20), stromal cells (group 2; n=20), and epithelial plus stromal cells (group 3; n=20) obtained from mid-secretory stage endometrial samples (n=60) were grown on collagen and exposed to different doses (0, 1, 10 and 100 IU/ml) of rhCG for 24 h in vitro. Immunochemical and qRT-PCR methods were used to determine cytokine profiles. Enrichment and process networks analyses were implemented using a list of cytokines showing differential secretion in response to hCG.

RESULTS: Under basal conditions, endometrial epithelial and stromal cells exhibited cell type-specific profiles of secreted cytokines. Administration of hCG (100 IU) resulted in significantly ($P < 0.05$) different cytokine secretion profiles indicative of macropinocytic transport (HGF, MCSF) in epithelial cells, signal transduction (CCL4, FGF2, IL-1b, IL-6, IL-17, VEGF) in stromal cells, and epithelial-mesenchymal transition (FGF2, HGF, IL-1b, TNF) in mixed cells. Overall, the administration of hCG affected cytokines involved in the immune response, chemotaxis, inflammatory changes, proliferation, cell adhesion and apoptosis.

CONCLUSIONS: CG can influence the function of the endometrium during blastocyst implantation via its differential action on endometrial epithelial and stromal cells. CG may also affect complex paracrine processes in the different

endometrial cell types.

PMCID: PMC3878507

PMID: 24345207 [PubMed - in process]

78: Sugandhi N, Srinivas M, Agarwala S, Gupta DK, Sharma S, Sinha A, Dinda A, Mohanty S. Effect of stem cells on renal recovery in rat model of partial unilateral upper ureteric obstruction. *Pediatr Surg Int.* 2013 Dec 27. [Epub ahead of print] PubMed PMID: 24370792.

BACKGROUND: Untreated obstructive uropathy produces irreversible renal damage and is an important cause of pediatric renal insufficiency. This study was designed to evaluate the effects of stem cell injection on morphological and pathological changes in the rat kidneys with partial unilateral upper ureteric obstruction (PUUUO).

METHODS: Wistar rats (n = 30) were operated upon to create a PUUUO by the psoas hitch method and were randomized into Group I (control, n = 15) and Group II (stem cell, n = 15); at day 5, 10 and 15, a subgroup of rats (n = 5) from each group was killed and the kidneys harvested. Pathological and morphological changes in the harvested kidneys were studied and compared between the two groups.

RESULTS: Morphologically, at day 15, Group II had significantly (p = 0.04) greater cortical thickness (0.48 ± 0.17 vs. 0.38 ± 0.09 mm). Histologically, at day 5, Group II had significantly (p = 0.032) lower peri-pelvic fibrosis. Group II group showed greater peri-pelvic inflammation as compared to Group I (p = 0.05). At day 10, lower grades of peri-pelvic fibrosis (p = 0.08), interstitial fibrosis (p = 0.037) and tubular atrophy (p = 0.05) were seen in the Group II. At day 15, Group II demonstrated significantly lower parenchymal loss (p = 0.037), glomerulosclerosis (p = 0.08), interstitial fibrosis (p = 0.08), tubular atrophy (p = 0.08) and peri-pelvic fibrosis (p = 0.08).

CONCLUSIONS: In a rat model of PUUUO, stem cell injection prevented detrimental changes in renal pathology and preserved renal parenchymal mass.

PMID: 24370792 [PubMed - as supplied by publisher]

79: Sugandhi N, Agarwala S, Bhatnagar V, Singh MK, Sharma R. Liver histology in choledochal cyst- pathological changes and response to surgery: the overlooked aspect? *Pediatr Surg Int.* 2013 Dec 27. [Epub ahead of print] PubMed PMID: 24370791.

BACKGROUND: Histological changes in the liver in cases of choledochal cyst are seldom reported. The severity of liver pathology has an impact on the presentation, course and prognosis of hepatobiliary lesions. This study aims to record the histological changes in the liver and response to surgery in patients with choledochal cyst and to correlate these with the clinical symptoms and recovery.

MATERIALS AND METHODS: All children <12 years diagnosed with choledochal cyst were evaluated clinically, radiologically and biochemically at presentation. Excision of the cyst with intra-operative liver biopsy was done. Liver biopsy was repeated after 6 months of surgery. Both the liver biopsies were compared objectively in terms of hepatocellular damage, cholestasis, parenchymal inflammation, bile duct inflammation, bile duct proliferation, portal fibrosis and central venous distension with appropriate statistical tests. Clinical presentation and recovery were correlated with grades of liver pathology.

RESULTS: Forty-six patients were included. Pathological damage was observed in all the livers preoperatively. Post-operatively, significant resolution of

histological changes was seen in hepatocellular damage ($p < 0.0001$), parenchymal inflammation ($p = 0.0001$), cholestasis ($p = 0.0003$) and bile duct proliferation ($p = 0.0001$). Portal fibrosis did not resolve. Central venous distension worsened. Severity of damage correlated significantly with younger age, symptom severity, anomalous pancreatobiliary junction (APBJ) and obstructive biliary clearance on Tc-99 HIDA scan. Post-operative bile duct proliferation, bile duct inflammation and portal fibrosis were associated with cholangitis, re-do surgery and obstructive Tc-99 HIDA scan clearance in the post-operative period.

CONCLUSIONS: All patients with choledochal cyst show pathological changes in liver of varying severity. More severe symptoms, younger age and APBJ are associated with higher degree of liver damage. Except portal fibrosis and central venous distension, all other pathological changes regress after surgery. Regression can be hindered by post-op cholangitis, obstructive biliary clearance and post-op IHBR dilatation.

PMID: 24370791 [PubMed - as supplied by publisher]

80: Talwar S, Keshri VK, Choudhary SK, Gupta SK, Ramakrishnan S, Saxena A, Kothari SS, Juneja R, Kumar G, Airan B. Unidirectional valved patch closure of ventricular septal defects with severe pulmonary arterial hypertension: Hemodynamic outcomes. *J Thorac Cardiovasc Surg.* 2013 Dec 9. pii: S0022-5223(13)01282-8. doi: 10.1016/j.jtcvs.2013.10.052. [Epub ahead of print] PubMed PMID: 24332111.

OBJECTIVE: The purpose of the present study was to study the midterm hemodynamic outcomes of unidirectional valved patch closure of ventricular septal defects (VSDs) in patients with VSD and pulmonary arterial hypertension (PAH).

METHODS: From January 2006 to January 2012, 20 patients with VSD with PAH and a pulmonary vascular resistance index >8 Wood units underwent VSD closure with a unidirectional valved patch using the technique previously described by us. Of these, 13 patients agreed to follow-up cardiac catheterization and were studied at a mean follow-up of 34.7 ± 18.6 months (range, 2-56). The mean age of these 13 patients was 8.5 ± 4.4 years (range, 2-19; median, 9), and the mean preoperative systemic saturation was $94.1\% \pm 3.4\%$ (range, 87-99; median, 95.0) The mean preoperative pulmonary artery systolic pressure was 96.2 ± 13.6 mm Hg (range, 75-115; median, 103.0), and the mean preoperative pulmonary vascular resistance index was 10.0 ± 2.1 Wood units (range, 8.0-15.1; median, 9.3).

RESULTS: At follow-up cardiac catheterization, the mean systemic saturation had increased to 98.92%. The pulmonary vascular resistance index had decreased significantly to 5.8 ± 2.1 Wood units ($P = .02$). A significant decrease was seen in the pulmonary artery systolic, diastolic, and mean pressures ($P = .000$), and none of the patients had severe PAH. No patients died, and all patients were in New York Heart Association class I.

CONCLUSIONS: Unidirectional valved patch closure of VSD is a promising technique for patients with a large VSD and severe PAH. It had a favorable effect on the immediate, early, and midterm clinical outcomes and hemodynamic parameters.

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PMID: 24332111 [PubMed - as supplied by publisher]

81: Talwar S, Rajashekar P, Muthukkumaran S, Choudhary SK, Airan B. An Alternative Approach for Repair of Total Anomalous Pulmonary Venous Connection to the Coronary Sinus at the Time of Extracardiac Total Cavopulmonary Connection. *J Card Surg.* 2013 Dec 17. doi: 10.1111/jocs.12282. [Epub ahead of print] PubMed PMID: 24345097.

Total anomalous pulmonary venous connection can be encountered in patients with a univentricular heart and must be addressed to at the time of univentricular palliation. We present an alternative technique of re-channeling of the pulmonary venous return toward the left heart in these patients.

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PMID: 24345097 [PubMed - as supplied by publisher]

82: Talwar S, Kumar MV, Muthukkumaran S, Airan B. Is sternotomy superior to thoracotomy for modified Blalock-Taussig shunt? *Interact Cardiovasc Thorac Surg*. 2013 Dec 13. [Epub ahead of print] PubMed PMID: 24336782.

A best evidence topic in cardiac surgery was written according to a structured protocol. The question addressed was: is sternotomy approach superior to a thoracotomy approach for a modified Blalock-Taussig shunt procedure? More than 58 papers were found using the search as described below, of which 11 papers represented the best evidence to answer the clinical question. The authors, journal, date and country of publication, patient group studied, study type, relevant outcomes and results of these papers are tabulated. Three of seven papers compared the sternotomy and thoracotomy approaches. The operative approach was a significant predictor of shunt failure. The criterion used to define early shunt failure was either the complete occlusion during hospitalization or the need to return to the operating room for a second shunt. The studies that compared the thoracotomy and sternotomy approaches observed increased shunt failure rates in the thoracotomy group. The sternotomy approach was associated with advantages like less pulmonary artery distortion, ease of technical performance, cosmetic advantage of a single sternotomy incision, ease of ligation of patent ductus, less phrenic nerve injury, less collateral formation in chest wall adhesions and less thoracotomy induced scoliosis. However, other papers studied either the sternotomy approach only or the thoracotomy approach and drew conclusions regarding risk factors for operative morbidity and mortality. We conclude that the sternotomy approach is beneficial to neonates and infants undergoing modified Blalock-Taussig shunt when compared with the conventional thoracotomy approach.

PMID: 24336782 [PubMed - as supplied by publisher]

83: Talwar S, Reddy AV, Rajashekar P, Choudhary SK, Airan B. A Simple Modification to Fix the Commissural Pillar during Right Ventricular Outflow Tract Reconstruction during the Arterial Switch Operation. *Heart Lung Circ*. 2013 Dec 1. pii: S1443-9506(13)01350-4. doi: 10.1016/j.hlc.2013.11.004. [Epub ahead of print] PubMed PMID: 24360621.

A simplified technique to fix the commissural pillar of the pulmonary valve at the time of right ventricular outflow tract reconstruction during the arterial switch operation is presented.

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PMID: 24360621 [PubMed - as supplied by publisher]

84: Talwar S, Jha AJ, Choudhary SK, Rajashekar P, Airan B. Arterial switch

operation for transposition of the great arteries with anomalies of cardiac situs and aortic position. *J Thorac Cardiovasc Surg.* 2013 Dec;146(6):1553-1556.e1. doi: 10.1016/j.jtcvs.2013.08.052. Epub 2013 Oct 9. PubMed PMID: 24120305.

PMID: 24120305 [PubMed - indexed for MEDLINE]

85: Thukral A, Arora K, Das RR, Arora A, Gamanagatti S, Agarwal RK. Congenital portosystemic venous shunt in a preterm Rh-isoimmunized infant. *Indian J Pediatr.* 2013 Dec;80(12):1053-5. doi: 10.1007/s12098-013-0972-4. Epub 2013 Feb 7. PubMed

The authors report a preterm infant with Rh-isoimmunization, who had persistent hepato-splenomegaly with conjugated hyperbilirubinemia, transaminitis, and hyperammonemia. Ultrasound abdomen revealed an intrahepatic portosystemic venous shunt (PSVS). The child was managed conservatively. On follow up at 2.4 y of age, the child is having normal growth and development, but with persisting shunt. Severe Rh-isoimmunisation in a neonate can sometimes share some of the features of congenital PSVS and delay the diagnosis of the latter. The index case had shunt ratio >80 % during the neonatal period but did not require any intervention.

PMID: 23389350 [PubMed - in process]

86: Vajpayee RB, Maharana PK, Sharma N, Agarwal T, Jhanji V. Diamond knife-assisted deep anterior lamellar keratoplasty to manage keratoconus. *J Cataract Refract Surg.* 2013 Dec 14. pii: S0886-3350(13)01391-6. doi: 10.1016/j.jcrs.2013.07.047. [Epub ahead of print] PubMed PMID: 24345531.

PURPOSE: To evaluate the outcomes of a new surgical technique, diamond knife-assisted deep anterior lamellar keratoplasty (DALK), and compare its visual and refractive results with big-bubble DALK in cases of keratoconus.

SETTING: Tertiary eyecare hospital.

DESIGN: Comparative case series.

METHODS: The visual and surgical outcomes of diamond knife-assisted DALK were compared with those of successful big-bubble DALK.

RESULTS: Diamond knife-assisted DALK was performed in 19 eyes and big-bubble DALK, in 11 eyes. All surgeries were completed successfully. No intraoperative or postoperative complications occurred with diamond knife-assisted DALK. Six months after diamond knife-assisted DALK, the mean corrected distance visual acuity (CDVA) improved significantly from 1.87 logMAR \pm 0.22 (SD) to 0.23 \pm 0.06 logMAR, the mean keratometry improved from 65.99 \pm 8.86 diopters (D) to 45.13 \pm 1.16 D, and the mean keratometric cylinder improved from 7.99 \pm 3.81 D to 2.87 \pm 0.59 D (all P =.005). Postoperatively, the mean refractive astigmatism was 2.55 \pm 0.49 D and the mean spherical equivalent was -1.97 \pm 0.56 D. The mean logMAR CDVA (P = .06), postoperative keratometry (P =.64), refractive cylinder (P =.63), and endothelial cell loss (P =.11) were comparable between diamond knife-assisted DALK and big-bubble DALK.

CONCLUSIONS: Diamond knife-assisted DALK was effective and predictable as a surgical technique for management of keratoconus cases. This technique has the potential to offer visual and refractive outcomes comparable to those of big-bubble DALK.

FINANCIAL DISCLOSURE: No author has a financial or proprietary interest in any material or method mentioned.

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PMID: 24345531 [PubMed - as supplied by publisher]

87: Wadhvani AR, Sharma VK, Ramam M, Khaitan BK. A clinical study of the spectrum of photodermatoses in dark-skinned populations. *Clin Exp Dermatol*. 2013 Dec;38(8):823-9. doi: 10.1111/ced.12098. Epub 2013 Jun 13. PubMed PMID: 23758593.

BACKGROUND: Photodermatoses are characterized by an abnormal cutaneous response to 'ordinary' light exposure.

AIM: To study the spectrum of photodermatoses in populations with dark skin (skin types IV-VI) at a tertiary referral centre.

METHODS: Consecutive patients with skin lesions confined to or predominantly located on photoexposed parts of the body and/or with photosensitivity were enrolled in the study, and their clinical details were recorded. Diagnosis was made on clinical grounds, and relevant investigations were carried out if required. Patch and photopatch testing were carried out in patients with chronic actinic dermatitis (CAD). Selected patients with CAD also underwent phototesting with UV (ultraviolet) A and broadband UVB light.

RESULTS: We enrolled 362 patients (146 men, 216 women; mean age 35.6 ± 13.6 years), with mean disease duration of 3.4 years. The Fitzpatrick skin types were IV and V (52.8% and 47.2% of patients, respectively). Polymorphic light eruption (PMLE) was the commonest photodermatosis seen, affecting 59.7% of patients, followed by CAD (13.8%), collagen vascular disorders (7.7%), photoaggravated atopic dermatitis (6.1%), actinic lichen planus (ALP; 2.2%) and lichen planus pigmentosus (LPP; 1.6%). The majority (84.5%) of patients were involved in indoor work. Papular PMLE (37%) was the most common variant of PMLE, followed by pinpoint (31%), eczematous (22.2%), lichenoid (5.5%) and plaque-type (4.1%) PMLE. **CONCLUSIONS:** The spectrum of photodermatoses in Indian patients with dark skin phototypes (IV and V), is similar to that reported from other parts of the world. PMLE was the commonest photodermatosis seen, with the pinpoint and lichenoid variants accounting for over one-third of the PMLE cases. ALP and LPP were also not uncommon in our dark-skinned population.

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PMID: 23758593 [PubMed - in process]

88: Yadav R, Sharma MC, Malgulwar PB, Pathak P, Sigamani E, Suri V, Sarkar C, Kumar A, Singh M, Sharma BS, Garg A, Bakhshi S, Faruq M. Prognostic value of MIB-1, p53, epidermal growth factor receptor, and INI1 in childhood chordomas. *Neuro Oncol*. 2013 Dec 17. [Epub ahead of print] PubMed PMID: 24305715.

BackgroundChordomas are slow-growing tumors and most commonly involve the sacrum and clivus. Multiple recurrences are frequent. Childhood chordomas are rare and often show exceptionally aggressive behavior, resulting in short survival and a high incidence of metastatic spread.**Objective**This study examined the histologic features and immunohistochemical profile of pediatric chordomas and compared them with their adult counterparts.**Methods**Nine pediatric and 13 adult cases were included in the study. Childhood chordomas were classified into conventional, atypical, and poorly differentiated types. Immunohistochemistry was performed for cytokeratin, epithelial membrane antigen, vimentin, S100, brachyury, p53, INI1, epidermal growth factor receptor (EGFR), and CD117. Cytogenetic analyses were performed in a subset of tumors for SMARCB1/INI1 locus on 22q chromosome by fluorescent in situ hybridization (FISH) and analysis of the SMARCB1/INI1 gene sequence.**Results**All tumors showed expression of cytokeratin, epithelial membrane antigen, S100, vimentin, brachyury, and EGFR. Atypical morphology, p53 expression, higher MIB-1 labelling index (LI), and INI1 loss were more frequently seen in pediatric chordomas as compared with adults. None of the tumors showed CD117 expression. No point mutation in the SMARCB1/INI1 gene was noted in the

tumors examined; however, 4 pediatric and 1 adult chordoma showed loss of this locus on FISH analysis. Conclusions A subset of pediatric chordomas with atypical histomorphologic features needs to be identified, as they behave in an aggressive manner and require adjuvant therapy. Pediatric chordomas more frequently show p53 expression, INI1 loss, and higher MIB-1 LI as compared with adults, whereas EGFR expression is common to both.

PMID: 24305715 [PubMed - as supplied by publisher]