

Christian Medical College VELLORE



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Research Digest

Research Digest

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Gagandeep Kang, MD, PhD, FRCPath
Vice Principal (Research)

APPLIED BIOLOGY:

Christudoss P, Selvakumar R, Fleming JJ, Gopalakrishnan, G.

Zinc status of patients with benign prostatic hyperplasia and prostate carcinoma

Indian J Urol; 2011, 27 (1): 14-8

Department of Clinical Biochemistry, Christian Medical College, Vellore, India.

OBJECTIVES: The exact cause of benign prostatic hyperplasia (BPH) and prostatic carcinoma is unknown. Changes in the level of the trace element zinc (Zn) are known to be associated with the functioning of different organs (breast, colon, stomach, liver, kidney, prostate, and muscle). This study is aimed at estimating and comparing the zinc levels in the prostate tissue, plasma, and urine obtained from patients diagnosed with BPH or prostatic carcinoma. **MATERIALS AND METHODS:** The prostate tissue zinc, plasma zinc, and urine zinc/creatinine ratio in BPH, prostate cancer, and normal subjects were measured by atomic absorption spectrophotometry. **RESULTS:** In prostate carcinoma, the mean tissue zinc was decreased by 83% as compared to normal tissue and in BPH, there was a 61% decrease in mean tissue zinc as compared to normal tissues. Both these values were statistically significant. The plasma zinc in prostate cancer patients showed a 27% decrease ($P < 0.01$) as compared to controls and 18% decrease ($P < 0.01$) as compared to BPH. The urine zinc/creatinine (ratio) was significantly increased to 53% in prostate cancer patients, and a 20% significant increase was observed in BPH as compared to normal subjects. **CONCLUSIONS:** It is evident from this study that BPH or prostate carcinoma may be associated with a reduction in the levels of tissue zinc, plasma zinc, and an increase in urine zinc/creatinine.

PMID: **21716879**

Fleming DH, Mathew BS, Prasanna S, Annapandian VM, John GT.

A possible simplification for the estimation of area under the curve (AUC) of enteric-coated mycophenolate sodium in renal transplant patients receiving tacrolimus

Ther Drug Monit; 2011, 33 (2): 165-70

Clinical Pharmacology Unit, Christian Medical College, Vellore, Tamil Nadu, India. clinpharm@cmcvellore.ac.in

Enteric-coated mycophenolate sodium (EC-MPS) is widely used in renal transplantation. With a delayed absorption profile, it has not been possible to develop limited sampling strategies to estimate area under the curve (mycophenolic acid [MPA] AUC), which have limited time points and are completed in 2 hours. We developed and validated simplified strategies to estimate MPA AUC in an Indian renal transplant population prescribed EC-MPS together with prednisolone and tacrolimus. Intensive pharmacokinetic sampling (17 samples each) was performed in 18 patients to measure MPA AUC. The profiles at 1 month were used to develop the simplified strategies and those at 5.5 months used for validation. We followed two approaches. In one, the AUC was calculated using the trapezoidal rule with fewer time points followed by an extrapolation. In the second approach, by stepwise multiple regression analysis, models with different time points were identified and linear regression analysis performed. Using the trapezoidal rule, two equations were developed with six time points and sampling to 6 or 8 hours (8hrAUC[exp]) after the EC-MPS dose. On validation, the 8hrAUC(exp) compared with total measured AUC had a coefficient of correlation ($r(2)$) of 0.872 with a bias and precision (95% confidence interval) of 0.54% (-6.07-7.15) and 9.73% (5.37-14.09), respectively. Second, limited sampling strategies were developed with four, five, six, seven, and eight time points and completion within 2 hours, 4 hours, 6 hours, and 8 hours after the EC-MPS dose. On validation, six, seven, and eight time point equations, all with sampling to 8 hours, had an acceptable r with the total measured MPA AUC (0.817-0.927). In the six, seven, and eight time points, the bias (95% confidence interval) was 3.00% (-4.59 to 10.59), 0.29% (-5.4 to 5.97), and -0.72% (-5.34 to 3.89) and the precision (95% confidence interval) was 10.59% (5.06-16.13), 8.33% (4.55-12.1), and 6.92% (3.94-9.90), respectively. Of the eight simplified approaches, inclusion of seven or eight time points improved the accuracy of the predicted AUC compared with the actual and can be advocated based on the priority of the user.

PMID: **21383656**

Fletcher GJ, Samuel P, Christdas J, Gnanamony M, Ismail AM, Anantharam R, Eapen CE, Chacko MP, Daniel D, Kannangai R, Abraham P.

Association of HLA and TNF polymorphisms with the outcome of HBV infection in the South Indian population. Genes Immun; 2011
Department of Clinical Virology, Christian Medical College, Vellore, Tamil Nadu, India.

The role of host genetic factors in the pathogenesis and outcome of hepatitis B virus (HBV) infection is not well known. We assessed the association of HLA and TNF (rs361525, rs1800629, rs1799724, rs1800630 and rs1799964) polymorphisms with HBV outcome in the South Indian population. Association of HLA polymorphism was analyzed in 90 individuals from each group, that is, spontaneous recovery (SR) and chronic-HBV (C-HBV) infection. The role of TNF polymorphisms was evaluated in 150 subjects with SR and 137 patients with C-HBV infection. After adjusting for age and sex, HLA-DRB1*07:01 was strongly associated with chronicity (corrected P-value (pc) <0.005, odds ratio (OR) 3.76, 95% confidence interval (CI) 1.84-7.68). The rs1800630 genotype was associated with HBV outcome in codominant (pc<0.01, OR=1.99, 95% CI 1.30-3.05) and dominant (pc<0.01, OR=2.28, 95% CI 1.35-3.84) analyzing models after adjusting for age and sex. Similarly, the rs1799964 genotype was associated with HBV outcome in codominant (pc=0.01, OR=1.57, 95% CI 1.09-2.27) and dominant (pc<0.01, OR=2.21, 95% CI 1.27-3.83) analyzing models. Haplotype analysis (rs1799964/rs1800630/rs1799724/rs1800629/rs361525) revealed that the CACGG haplotype was strongly associated with C-HBV infection (P=0.0004). Our study suggests that inheritance of HLA and TNF polymorphisms might explain the outcome of HBV infection in the South Indian population. Genes and Immunity advance online publication, 19 May 2011; doi:10.1038/gene.2011.32.

PMID: 21593777

CASE REPORTS:

Ahmed M, Sureka J, Mathew V, Jakkani RK, Abhilash KP. Magnetic resonance imaging findings in a fatal case of Salmonella typhi-associated encephalopathy: a case report and literature review Neurol India; 2011, 59 (2): 270-2
Department of Radiology, Christian Medical College & Hospital, Vellore, Tamil Nadu, India.
munawwarahmned19@yahoo.co.in

We describe MRI findings in a fatal case of culture proven Salmonella typhi-associated encephalopathy. MRI findings included symmetrical diffuse abnormal signal in centrum semiovale, periventricular and deep white matter, splenium of corpus callosum and cerebellar deep white matter with central area of restricted diffusion. There was no contrast enhancement, significant edema or mass effect. Previous literature is also reviewed for imaging findings in Salmonella associated encephalopathy.

PMID: 21483131

Banerji JS, Devasia A. Images in clinical medicine. Calcified vasa deferentia New England J of Med; 2011, 364 (21): 2043
Christian Medical College, Vellore, India.
johnsbanerji2002@yahoo.co.in

PMID: 21612473

Banerji JS, Devasia, A. Isolated renal hydatid cyst managed with partial nephrectomy Urol J; 2011, 8 (1): 12
Department of Urology, Christian Medical College, Vellore, Tamil Nadu, India.
johnsbanerji2002@yahoo.co.in

PMID: 21404195

Banerji JS, Singh JC. Cutaneous Fusarium infection in a renal transplant recipient: a case report J Med Case Reports; 2011, 5 (1): 205
Department of Urology, Unit 1, Christian Medical College, Vellore, India. johnsbanerji2002@yahoo.co.in.

ABSTRACT: INTRODUCTION: Fungal infections in the immunocompromised host are fairly common. Of the mycoses, Fusarium species are an emerging threat. Fusarium infections have been reported in solid organ transplants, with three reports of the infection in patients who had received renal transplants. To the best of our knowledge, this is the first case of an isolated cutaneous lesion as the only form of infection. **CASE PRESENTATION:** We report the case of a 45-year-old South Indian man who presented with localized

cutaneous Fusarium infection following a renal transplant. **CONCLUSION:** In an immunocompromised patient, even an innocuous lesion needs to be addressed with the initiation of prompt treatment.

PMID: 21612606

Das S, Subhashini J, Isiah R, Kurian S.
Mesenteric Fibromatosis Mimicking Metastasis: A Case Report and Review of Literature.
J Gastrointest Cancer; 2011,
Department of Radiation Oncology, Christian Medical College, Vellore, 632004, India, saikat@cmcvellore.ac.in.

PMID: 21710175

Jacob P, Rose JS, Hoshing A, Chacko G.
Tectonic corneal graft for conjunctival rhinosporidiosis with scleral melt
Indian J Ophthalmol; 2011, 59 (3): 251-3
Department of Ophthalmology, Christian Medical College and Hospital, Vellore, Tamil Nadu, India.

A 16 year old girl presented with irritation and watering of the right eye for 3 months. On examination, the superior perilimbal sclera was ectatic with incarcerated uveal tissue covered by conjunctiva. The conjunctiva showed discreet, yellow white mucoid spots. Excision biopsy of the conjunctiva showed subepithelial spherules of sporangia containing numerous endospores, suggestive of rhinosporidiosis. Diathermy was applied to flatten the staphyloma. The ectatic area was covered with a corneal patch graft. The patient was started on prednisolone acetate eye drops and oral dapsone for 6 months. Corneal graft was well incorporated and conjunctivalized by 3 months. Since the graft was not seen within the palpebral aperture, there was good cosmetic result. The corneal graft had the added advantage of transparency which allowed visualization of the underlying tissue to diagnose early recurrence. There was no recurrence at 6 months.

PMID: 21586855

John D, Thomas M, Jacob P.
Neurotrophic keratitis and congenital insensitivity to pain with anhidrosis—a case report with 10-year follow-up
Cornea; 2011, 30 (1): 100-2
Department of Ophthalmology, Christian Medical College, Vellore, Tamil Nadu, India.
deeparebeccajohn@gmail.com

PURPOSE: To report a rare case of congenital insensitivity to pain with anhidrosis. **METHODS:** A 3-year-old girl presented with watering in the right eye for 3 days. Slit-lamp examination showed an epithelial defect and hypopyon in the right eye and a corneal scar with thinning and vascularization in the left eye. There was bilateral reduced corneal sensation and evidence of self-mutilated lips and fingers. **RESULTS:** Neurological manifestations along with ocular features confirmed the diagnosis of congenital insensitivity to pain with anhidrosis. **CONCLUSIONS:** Patients with congenital insensitivity to pain with anhidrosis are asymptomatic even when they develop corneal ulcer. Parents should be advised regular follow-up and prompt treatment because this is a vision-threatening corneal abnormality.

PMID: 20847675

Koshy CG, Chacko BR, Babu S, Basu G, Selvaraj D, John GT.
An unusual case of abdominal wall bleeding after renal allograft biopsy
Indian J Nephrol; 2011, 21 (1): 62-5
Department of Radiology, Christian Medical College, Vellore, India.

We report an unusual case of a enlarging anterior abdominal wall hematoma after percutaneous biopsy of a renal allograft. Angiography-directed embolization of the vessels filling the pseudoaneurysm was done and followed up with surgical exploration of the hematoma. In order to avoid this complication, Color Doppler evaluation of the overlying abdominal wall is suggested to look for significant vessels before the biopsy procedure.

PMID: 21655175

Koshy CG, Keshava SN, Moses V, Sen S.
Case report: Combined transarterial and direct approaches for embolization of a large mandibular arteriovenous malformation
Indian J Radiol Imaging; 2011, 21 (1): 6-9
Department of Radiology, Christian Medical College, Vellore, Tamil Nadu, India.

Arteriovenous malformations (AVMs) that involve the mandible are difficult lesions to treat, with traditional

options being surgery and embolization. This article describes a large mandibular AVM that was treated with embolization using transarterial as well as direct puncture approaches. Follow-up imaging showed thrombosis of the vascular spaces of the malformation. There were no complications. The patient is doing well and is on follow-up.

PMID: 21431023

Krishnamoorthy G, Ray G, Agarwal I, Kumar S.
Unusual presentation of sarcoidosis in a child
Rheumatol Int; 2011Apr 2.
Christian Medical College, Vellore, India.

Sarcoidosis is a chronic multisystemic granulomatous disease of unknown etiology. We report a 5-year-old boy with sarcoidosis who had an unusual presentation of membranous nephropathy and Budd-Chiari syndrome. These combinations of features have never reported in pediatric literature so far.

PMID: 21461714

Kumar K, Ninan S, Saravanan P, Prakash KS, Jeslin L.
Airway management in an infant with Tessier N. 4 anomaly
Jof Anaesthesiol Clin Pharmacol; 2011, 27 (2): 239-40
Department of Anaesthesia and Critical Care, Christian Medical College and Hospital, Vellore, Tamil Nadu, India.

Children with craniofacial abnormalities provide a challenge to an anesthesiologist being one the commonest cause of expected difficult airway. Difficult airway management should be predicted and planned in advance to avoid critical problems. It is important to understand the development and characteristics of the more common anomalies and their peculiar anesthetic challenges in order to construct a safe anesthetic plan. We describe the successful airway management of a Tessier N. 4 anomalous child with left orofacial cleft, cleft lip and cleft palate.

PMID: 21772688

Kurien M, Raviraj R, Mathew J, Kaliaperumal I, Ninan S.
Modified endotracheal tube: emergency alternative to paediatric tracheostomy tube
J Laryngol Otol; 2011, 125 (7): 729-31

Department of ENT, Head and Neck Surgery, Speech and Hearing, Christian Medical College, Vellore, Tamilnadu, India. ent2@cmcvellore.ac.in

BACKGROUND: In an emergency, the non-availability of a conventional paediatric tracheostomy tube is a therapeutic challenge for the attending surgeon. OBJECTIVE: To describe a simple alternative to a paediatric tracheostomy tube for use in an emergency situation. METHOD: Case report of a 14-year-old boy who developed tracheomalacia following partial cricotracheal resection for subglottic stenosis. As a suitably sized tracheostomy tube (with a long narrow segment) was not available, an endotracheal tube was modified and used successfully. Details of the modification, and a relevant literature review, are also discussed. CONCLUSION: In the paediatric age group, when an appropriately sized tracheostomy tube is not available, a modified endotracheal tube is a simple temporary alternative; this may be especially useful in an emergency.

PMID: 21486520

Mahata KM, Keshava SK, Jacob KM.
Osteoid osteoma of the femoral head treated by radiofrequency ablation: a case report
J Med Case Reports; 2011, 5 (1): 115
Department of Radiodiagnosis, Christian Medical College and Hospital, Vellore, Tamil Nadu, India. koyelimahata@hotmail.com.

ABSTRACT: INTRODUCTION: We present a case report highlighting the unusual location and atypical imaging characteristics of an osteoid osteoma in the juxta-articular region of the femoral head, and treatment of the condition with radiofrequency ablation. This treatment option is low in both risk and morbidity and is therefore the best option in lesions that are difficult to access surgically because of the risks involved. CASE PRESENTATION: A 40-year-old Indian man from West Bengal presented to our facility with a history of progressively severe left hip pain of insidious onset, requiring analgesics. Imaging with plain radiographs, computed tomography and magnetic resonance imaging confirmed findings of osteoid osteoma in a subarticular location in the femoral head, although imaging features were atypical due to the intra-articular subchondral location. CONCLUSION:

Radiofrequency ablation is a newer treatment modality for osteoid osteoma that, being minimally invasive, offers comparable results to surgery with a significantly lower morbidity. To the best of our knowledge, treatment of osteoid osteoma in the foveal region of the femoral head with radiofrequency ablation has not been reported to date. We wish to highlight the successful outcome in our index case using this technique.

PMID: **21435206**

Mathew SE, Madhuri V, Alexander M, Walter NM, Gibikote SV.

Florid reactive periostitis of the forearm bones in a child
J Bone Joint Surg Br; 2011, 93 (3): 418-20

Paediatric Orthopaedic Unit, Christian Medical College, Vellore, Tamil Nadu 632004, India.

Florid reactive periostitis is a pronounced periosteal reaction, usually affecting the hands and feet, for which there is no obvious cause. It is rare in children and in long bones. We report an unusual case of florid reactive periostitis in a ten-year-old girl that involved both bones of the forearm. The lesion resolved over a period of one year, leaving a residual exostosis. She developed a physeal bar in the distal ulna in the region of the lesion at one-year follow-up. This was thought to be a complication of the biopsy procedure and was treated by resection and proximal ulnar lengthening.

PMID: **21357968**

Mohapatra A, Viswabandya A, Samuel R, Deepti AN, Madhivanan S, John GT.

NK/T-cell lymphoma in a renal transplant recipient and review of literature.

Indian J Nephrol; 2011, 21 (1): 44-7.

Department of Nephrology, Christian Medical College, Vellore, India.

T-cell lymphomas, particularly NK/T-cell lymphomas are rare post transplantation malignancies. Only a few cases have been described. These tumors behave aggressively and the outcome is poor. We present here a case of NK/T-cell lymphoma who presented to us with an orbital swelling 9 years after renal transplantation, along with the review of literature. To the best of our knowledge, this is the first case of NK/T-cell lymphoma post-renal transplantation reported from India.

PMID: **21655170**

Mukha RP, Devasia A, Thomas EM.

Ureteral herniation with intermittent obstructive uropathy in a renal allograft recipient

Urol J; 2011, 8 (2): 98

Department of Urology and Radiodiagnosis, Christian Medical College Vellore, Tamil Nadu, India.
mukhas@gmail.com

PMID: **21656483**

Narasimhaiah DA, Premkumar JA, Moses V, Chacko G.

Carcinoma of gall bladder presenting as dermatomyositis
Ann Indian Acad Neurol; 2011, 14 (1): 44-6

Department of General Pathology, Christian Medical College, Vellore- 632004, Tamil Nadu, India.

Cancer-related muscle diseases are usually paraneoplastic disorders. Dermatomyositis (DM) is a type of inflammatory myopathy that is strongly associated with a broad range of malignant disorders. The malignancy can occur before, concomitantly or after the onset of myositis. The malignancies most commonly associated with DM are carcinomas of ovary, lung, stomach, colorectal and pancreas, as well as non-Hodgkin's lymphoma. An association of DM with carcinoma of the gall bladder (GB) is extremely rare with only two previously reported cases in the literature. We report a case of carcinoma of GB with DM as the paraneoplastic manifestation.

PMID: **21655205**

Natarajan MS, Prabhu K, Braganza A, Chacko AG.

Posttraumatic subgaleal and orbital hematoma due to factor XIII deficiency

J Neurosurg Pediatr; 2011, 7 (2): 213-7

Department of Neurological Sciences, Christian Medical College, Vellore, Tamil Nadu, India.

The authors report on a 6-year-old boy who presented with a tense subgaleal hematoma and proptosis 2 weeks after a minor head injury that were successfully managed by continuous closed-system drainage and blood transfusion. At evaluation he was found to have a transient mild factor XIII deficiency.

PMID: **21284470**

Prabhu K, Kumbhar KR, Chacko AG.
Middle fossa extradural repair of sphenoidal encephaloceles
Br J Neurosurg; 2011, 25 (1): 124-6
Department of Neurosurgery, Christian Medical College, Vellore - 632004, Tamil Nadu, India.

Sphenoidal encephaloceles are uncommon but potentially dangerous pathological conditions that present with CSF rhinorrhea. Careful radiological evaluation and localisation of the sphenoid defect are critical in defining the surgical approach. We used the middle fossa extradural approach in two patients with sphenoidal encephaloceles in whom previous endoscopic transnasal repairs had failed.

PMID: 20874451

Rajaian S, Gopalakrishnan G, Kumar S, Kekre NS.
Impacted calculus within a urethral stent: A rare cause of urinary retention
Indian J Urol; 2011, 27 (1): 133-4
Department of Urology, Christian Medical College Hospital, Ida Scudder Road, Vellore, Tamilnadu, India.

An elderly male presented to the emergency department with acute urinary retention. He had poor flow of urine associated with serosanguinous discharge per urethra for 3 days duration. Earlier he underwent permanent metallic urethral stenting for post TURP bulbar urethral stricture. Plain X-ray of Pelvis showed an impacted calculus within the urethral stent in bulbar urethra. Urethrolitholapaxy was done with semirigid ureterscope. Urethral stent was patent and well covered. Subsequently he had an uneventful recovery. We describe a unique case of acute urinary retention due to calculus impaction within a urethral stent.

PMID: 21716876

Raphael JC, Ram TS, Pavamani S, Choudharie L, Viswanathan PN.
Squamous cell carcinoma cervix with metastasis to pyloroduodenal region
J Cancer Res Therapeutics; 2011, 7 (2): 183-4
Department of Radiation Oncology, Christian Medical College, Vellore, Tamilnadu, India.

Metastatic squamous cell carcinoma in the pyloroduodenal region is uncommon. Cases have been reported where carcinoma of the lung has presented with metastasis to the duodenum. We present here the case of a 57-year-old lady who was found to have a metastasis in pyloroduodenal region while on treatment for carcinoma cervix. The patient developed features of intestinal obstruction and endoscopy showed a growth extending from pyloric antrum to first part of duodenum up to the junction of first and second part. A biopsy was taken from the duodenal area and it was reported as metastatic squamous cell carcinoma. This is one of the few reported cases of hematogenous visceral metastasis from carcinoma cervix. Since the disease was found to be advanced and her performance status was poor, she was provided best supportive care.

PMID: 21768708

Rose JS, Arthur A, Raju R, Thomas M.
Primary conjunctival tuberculosis in a 14 year old girl
Indian J Tuberc; 2011, 58 (1): 32-4.
Schell Eye Hospital, Amrni Road, Christian Medical College & Hospital, Vellore-632 001, Tamil Nadu.
jeyanthrose@hotmail.com

Tuberculosis is a common disease in India. However, tuberculosis primarily affecting the conjunctiva is a rare entity. We report a 14-year-old girl who presented with unilateral eye discharge, watering, redness and itching for two weeks. Giant papillae were present on the upper tarsal conjunctiva. A provisional diagnosis of allergic conjunctivitis was made. Topical therapy with 1% Prednisolone acetate and 2% Sodium cromoglycate was commenced. The patient returned six months later with no improvement in the symptoms. The tarsal conjunctiva had a polypoidal, velvety appearance with giant papillae. A fibrinous membrane was seen over the tarsal conjunctiva and a preauricular node was found. Excision biopsy and histopathologic examination revealed necrotizing granulomatous inflammation suggestive of tuberculosis. Systemic examination and investigations were normal. She was started on anti-tuberculous therapy. In two months she showed complete resolution of symptoms and marked reduction in papillae and conjunctival thickening. Symptoms and signs of unilateral conjunctivitis may masquerade as primary conjunctival tuberculosis. In

an endemic country like India, laterality, chronicity and non-resolution of symptoms with steroids are indications for pursuing a biopsy earlier than later. In our patient, the histopathology clinched the diagnosis of conjunctival tuberculosis resulting in a faster and complete resolution of the disease condition.

..... PMID: **21434554**

Saha I.

Occam's razor... blunted

Trop Doct; 2011, 41 (1): 57-8

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Occam's razor, [When there are two competing theories making the same prediction, the simpler one is chosen], is a popular method in making clinical diagnosis. This theory gets 'blunted' in our case report, as our immunocompromised patient was found to have multiple non-related aetiologies for a single pathological event.

..... PMID: **20962175**

Samuel S, Jebaraj, I.

Unknown case

Spine (Phila Pa 1976); 2011, Address: Department of Orthopaedics unit III, Christian Medical College, Vellore, Tamil Nadu, India.

..... PMID: **21224769**

Sandhya P, Keshava SN, Danda D, Padhan P, Mathew J, Gibikote, S.

Pneumorrhachis and pneumomediastinum in connective tissue disease-related interstitial lung disease: case series from a tertiary care teaching hospital in South India Rheumatol Int; 2011 Mar 27.

Department of Clinical Immunology and Rheumatology, Christian Medical College and Hospital, Vellore, 632004, India.

Pneumomediastinum has been described as a rare complication of connective tissue diseases. Here, we report four cases of pneumomediastinum: three of which are associated with dermatomyositis and one with mixed connective tissue disease. All our patients had interstitial lung disease. The first case of

dermatomyositis described below was complicated by epidural emphysema (pneumorrhachis) in addition to pneumomediastinum. Pneumorrhachis is reported in many isolated case reports and series in the setting of asthma, pneumothorax, blunt chest trauma, etc. Less than 10% of pneumomediastinum cases develop this complication and vast majority of cases resolve spontaneously. The mechanism behind this has been postulated to be the passage of air through the intervertebral foramen. Others suggest entrapment of air which dissects between paraspinal soft tissues and along the vascular and nerve sheaths into the epidural space. This is the first ever reported case of epidural emphysema in connective tissue disease to the best of our knowledge.

..... PMID: **21442175**

Sarawagi R, Keshava SN, Surendrababu NR, Zachariah UG, Eapen CE.

Budd-Chiari syndrome complicating hydatid cyst of the liver managed by venoplasty and stenting.

Cardiovasc Intervent Radiol; 2011, 34 Suppl 2 S202-5

Department of Radiology, Christian Medical College, Vellore, Tamilnadu, India. sarawagi_r@yahoo.co.uk

Budd-Chiari syndrome (BCS) and portal hypertension is an uncommon complication of hydatid cyst of the liver. Previous reports describe cyst excision or portosystemic shunt surgery for such patients. Here we present a case of hydatid cyst of the liver with BCS that was treated successfully with hepatic venoplasty and transjugular stent placement.

..... PMID: **20333383**

Sureka J, Jakkani RK, Inbaraj A, Panwar, S.

Idiopathic chondrolysis of hip

Jpn J Radiol; 2011, 29 (4): 283-5

Department of Radiology, Christian Medical College & Hospital, Vellore, 632004 Tamilnadu, India. drjyotimch@rediffmail.com

An uncommon case of idiopathic chondrolysis of the hip in an 11-year-old girl is reported. It was characterized by clinical presentation, laboratory tests, and imaging techniques. A differential diagnosis is discussed highlighting the radiological features for quick diagnosis.

..... PMID: **21607844**

Thomas R, Thangakunam B, Cherian RA, Gupta R, Christopher DJ.

Cerebral air embolism complicating CT-guided trans-thoracic needle biopsy of the lung

Clin Respir J; 2011, 5 (2): e1-3

Department of Pulmonary Medicine, Christian Medical College, Vellore, India Department of Radiodiagnosis, Christian Medical College, Vellore, India.

Background and Aims: Systemic air embolism is recognized as a rare but potentially fatal complication of trans-thoracic needle biopsy of the lung. **Methods:** We report the case of a young female who developed fatal cerebral air embolism following computed tomography (CT) guided needle biopsy of a lung mass. **Results:** Immediately after the procedure, the patient went into cardio-respiratory arrest. Despite adequate resuscitation and ventilatory support, she showed little recovery in her neurological status and subsequently died. CT scan of the brain confirmed cerebral arterial air embolism. **Conclusion:** Radiologists and physicians need to be aware of this rare but potentially fatal complication of needle lung biopsy. Please cite this paper as: Thomas R, Thangakunam B, Cherian R Gupta R and Christopher DJ. Cerebral air embolism complicating CT-guided trans-thoracic needle biopsy of the lung. Clin Respir J 2011; 5: e1-e3.

PMID: 21410896

Turel MK, Chacko AG.

Delayed resolution of extensive T2-weighted intramedullary signal changes after oblique corpectomy for cervical spondylotic myelopathy

Br J Neurosurg; 2011

Section of Neurosurgery, Department of Neurological Sciences, Christian Medical College, Ida Scudder road, Vellore 632 004, Tamil Nadu, India.

We report two cases of cervical spondylotic myelopathy (CSM) with extensive T2-weighted intramedullary changes noted on preoperative imaging extending far beyond the level of compression. A delayed resolution 2 years after cervical oblique corpectomy was noted in both cases. This short report cautions against diagnosing this unusual magnetic resonance imaging (MRI) finding as an intramedullary tumour, demyelination or an inflammatory process.

PMID: 21707301

Varughese S, David VG, Mathews MS, Tamilarasi, V.

A Patient with Amphotericin-Resistant *Curvularia lunata* Peritonitis

Perit Dial Int; 2011, 31 (1): 108-9

Department of Nephrology Christian Medical College Vellore, Tamil Nadu, India.

PMID: 21282397

CLINICAL EPIDEMIOLOGY

Ajjampur SS, Koshy B, Venkataramani M, Sarkar R, Joseph AA, Jacob KS., Ward H, Kang G.

Effect of cryptosporidial and giardial diarrhoea on social maturity, intelligence and physical growth in children in a semi-urban slum in south India

Annals Trop Paediatrics; 2011, 31 (3): 205-12

Department of Gastrointestinal Sciences, Christian Medical College, Vellore, Tamil Nadu, India.

BACKGROUND: Early childhood diarrhoea is a major cause of infant morbidity and mortality in developing countries. Recurrent and persistent diarrhoea affect growth and cognition in children as young as 6 years. **OBJECTIVES:** To evaluate the effect of early childhood cryptosporidial and giardial diarrhoea on growth and development in children in a semi-urban slum in India. This is the first report of such assessment at 3 years of age. **METHODS:** This study was undertaken on 116 children who were part of an ongoing birth cohort study (n=452) of rotaviral and cryptosporidial diarrhoea between June and December 2005. Social quotients (SQ) assessed by the Vineland Social Maturity Scale, intelligence quotients (IQ) assessed by the Seguin Form Board Test, physical growth parameters and sociodemographic data in 84 children with a history of cryptosporidial or giardial diarrhoea were compared with those of 32 without diarrhoea. **RESULTS:** Children with a past history of giardial diarrhoea showed a trend towards lower SQ (p=0.09) and had significantly lower IQ (p=0.04) and increased wasting (p=0.04). Cryptosporidial diarrhoea was not associated with poor IQ, SQ or physical growth. **CONCLUSION:** This study demonstrates the long-term effect of protozoan diarrhoea, especially that caused by giardia, on both intelligence and physical growth in Indian children as early as 3 years of age and re-inforces the need for

early detection and prevention of early childhood protozoan diarrhoea.

PMID: 21781414

Ajjampur SS, Sarkar R, Allison G, Banda K, Kane A, Muliyl J, Naumova E, Ward H, Kang G.

Serum IgG response to *Cryptosporidium* immunodominant antigen gp15 and polymorphic antigen gp40 in children with cryptosporidiosis in South India

Clin Vaccine Immunol; 2011, 18 (4): 633-9

Department of Gastrointestinal Sciences, Christian Medical College, Vellore, TN 632004, India.

The surface-associated glycopeptides gp40, one of the most polymorphic *Cryptosporidium* antigens, and gp15, one of the most immunodominant *Cryptosporidium* antigens, are putative vaccine candidates because they mediate infection in vitro and induce immune responses in vivo. We evaluated antibody responses to these antigens before and after the first episode of symptomatic cryptosporidiosis in 51 children from a birth cohort study in an area in South India where *Cryptosporidium* is endemic and a major cause of parasitic diarrhea. IgG levels to gp15 and to homotypic and heterotypic gp40 antigens were measured in pre- and postdiarrheal sera by enzyme-linked immunosorbent assay (ELISA). There was a significant IgG response to gp15 ($P < 0.001$) following the first episode of cryptosporidial diarrhea. Using a general additive model, we determined the estimated time of the peak IgG response to gp15 to be 9.3 weeks (confidence interval, 5.2 to 13.4) following the diarrheal episode. In a subset of 30 children infected with *Cryptosporidium hominis* subtype Ia, there was a significant difference in IgG responses to homotypic *C. hominis* Ia and to heterotypic *Cryptosporidium parvum* II gp40 antigens ($P = 0.035$). However, there was also a significant correlation ($P = 0.001$) in the responses to both antigens in individual children, suggesting that while responses are in part subtype specific, there is significant cross-reactivity to both antigens. This is the first report of the characterization of immune responses to cryptosporidiosis in Indian children and the first study to investigate human immune responses to the polymorphic gp40 antigen. However, further studies are needed to determine whether immune responses to these antigens are protective against subsequent infections.

PMID: 21288997

Chandy S, Abraham AM, Jana AK, Agarwal I, Kekre A, Korula G, Selvaraj K, Muliyl JP.

Congenital rubella syndrome and rubella in Vellore, South India

Epidemiol Infect; 2011, 139 (6): 962-6

Department of Clinical Virology, Christian Medical College, Dr Ida Scudder Road, Vellore, India.

Rubella, a mild, vaccine-preventable disease, can manifest as congenital rubella syndrome (CRS), a devastating disease of the fetus. To emphasize the inadequacy of the existing rubella vaccination programme in India, we evaluated epidemiological evidence of rubella virus activity with data available from a tertiary-care centre. The proportion of suspected CRS cases that were laboratory confirmed increased from 4% in 2000 to 11% in 2008. During the same period, 329 clinically suspected postnatal rubella cases were tested of which 65 (20%) were laboratory confirmed. Of women ($n=770$) of childbearing age, 12.5% were susceptible to rubella.

PMID: 20642875

Christopher S, Verghis RM, Antonisamy B, Sowmyanarayanan TV, Brahmadathan KN, Kang G, Cooper BS.

Transmission Dynamics of Methicillin-Resistant *Staphylococcus aureus* in a Medical Intensive Care Unit in India

PLoS One; 2011, 6 (7): e20604

Department of Biostatistics, Christian Medical College, Vellore, India.

BACKGROUND: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a global pathogen and an important but seldom investigated cause of morbidity and mortality in lower and middle-income countries where it can place a major burden on limited resources. Quantifying nosocomial transmission in resource-poor settings is difficult because molecular typing methods are prohibitively expensive. Mechanistic statistical models can overcome this problem with minimal cost. We analyse the transmission dynamics of MRSA in a hospital in south India using one such approach and provide conservative estimates of the organism's economic burden. **METHODS AND FINDINGS:** Fifty months of MRSA infection data were collected retrospectively from a Medical Intensive Care Unit

(MICU) in a tertiary hospital in Vellore, south India. Data were analysed using a previously described structured hidden Markov model. Seventy-two patients developed MRSA infections and, of these, 49 (68%) died in the MICU. We estimated that 4.2% (95%CI 1.0, 19.0) of patients were MRSA-positive when admitted, that there were 0.39 MRSA infections per colonized patient month (0.06, 0.73), and that the ward-level reproduction number for MRSA was 0.42 (0.08, 2.04). Anti-MRSA antibiotic treatment costs alone averaged \$124/patient, over three times the monthly income of more than 40% of the Indian population. **CONCLUSIONS:** Our analysis of routine data provides the first estimate of the nosocomial transmission potential of MRSA in India. The high levels of transmission estimated underline the need for cost-effective interventions to reduce MRSA transmission in hospital settings in low and middle income countries.

PMID: **21750700**

Gopinath KG, Stanley S, Mathai E, Chandy GM.

Pagers and stethoscopes as vehicles of potential nosocomial pathogens in a tertiary care hospital in a developing country

Trop Doct; 2011, 41 (1): 43-5

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It has long been recognized that stethoscopes and other inanimate objects carry virulent micro-organisms that can cause nosocomial infections in susceptible patients. Among the frequently used items in hospitals are pagers and stethoscopes. The manner in which these items are used has the potential to cause colonization of bacteria and transfer of these bacteria to another person. This prospective study was performed in order to assess the colonization rates among randomly selected pagers and stethoscopes. We found that 15 (25%) pagers and 11 (27.5%) stethoscopes were contaminated. Enterococci (10%) were the most common isolates found followed by Staphylococci (8%) and Enterobacteriaceae (7%). There was no significant difference in the rates of colonization between shared and personal pagers ($P = 0.16$). Stethoscopes were more likely to be contaminated with Enterococci compared to pagers ($P = 0.013$, 95% confidence interval 1.3-52.9). Our

findings confirm the need for protocols to prevent transmission of infection through inanimate objects.

PMID: **21109607**

James P, Gupta R, Christopher DJ, Thankagunam B, Veeraraghavan B.

MDR- and XDR-TB among suspected drug-resistant TB patients in a tertiary care hospital in India.

Clin Respir J. 2011 Jan;5(1):19-25.

Department of Pulmonary Medicine, Christian Medical College, Vellore, India.drprincej@gmail.com

AIM: To study the anti-tubercular drug resistance pattern among suspected cases of drug-resistant TB.

MATERIALS AND METHODS: First and second line drug susceptibility data were retrospectively analysed for all suspected cases of drug-resistant tuberculosis (TB), presenting to the Pulmonary Medicine department of tertiary care hospital in South India from 2003 to 2007.

RESULTS AND DISCUSSION: Out of 177 cases of suspected drug-resistant TB, 103 (58.2%) cases were multi-drug-resistant tuberculosis (MDR-TB). Out of 75 cases of MDR-TB for whom second-line drug susceptibility test was performed, 45 (60.0%) cases met the criteria of extensively drug-resistant (XDR) TB, which is very high when compared with existing worldwide data on XDR-TB (6.6% cases of MDR-TB). In comparison with non-MDR-TB cases, MDR and XDR-TB cases had a history of significantly higher duration of anti-TB treatment (ATT) and significantly higher exposure to multiple ATT regimens. Past exposure to second-line anti-TB drugs was significantly high in XDR-TB cases than in MDR-TB and non MDR-TB cases.

CONCLUSION: This study highlights the high burden of XDR- and MDR-TB among TB patients coming to tertiary care hospitals in India.

PMID: **21159137**

Jayaraman T, Prabhakaran V, Babu P, Raghava MV, Rajshekhar V, Dorny P, Muliylil, Oommen A.

Relative seroprevalence of cysticercus antigens and antibodies and

antibodies to Taenia ova in a population sample in south India suggests immunity against neurocysticercosis.

Trans R Soc Trop Med Hyg. 2011 Mar;105(3):153-9. Epub 2011 Jan 8.

Department of Neurological Sciences, Christian Medical College, Vellore 632 004, Tamilnadu, India.

We evaluated the exposure of a community in Vellore district of south India to *Taenia solium* infection and its relationship to the prevalence of neurocysticercosis (NCC) causing active epilepsy. Seroprevalence of *Taenia cysticercus* antigens and antibodies were determined in 1064 randomly chosen asymptomatic individuals, antibodies to *T. solium* ova in 197 selected sera, and prevalence of taeniasis by a coproantigen test in 729 stool samples. The prevalence of NCC causing active epilepsy in Vellore district was determined in a population of 50 617. Coproantigens were detected in 0.8% (6 samples), *Taenia cysticercus* antigens in 4.5% (48 sera) and cysticercus IgG antibodies in 15.9% (169 sera) of the population. Cysticercus antibodies were directed against relatively low molecular weight cyst glycoprotein antigens in 14.9% (158 sera) of the population. IgG antibodies to *Taenia* ova were found in 81 (41.1%) of the selected samples. Prevalence of NCC causing active epilepsy was 1.3 per 1000 population. These results show high exposure of the population to the parasite and a relatively high prevalence of active infections (4.5% antigen positives) but a low prevalence of NCC causing active epilepsy (0.13%). These findings may indicate that the population is protected against developing neurocysticercosis. IgG antibodies directed against *Taenia* ova and low molecular weight cyst antigens may contribute to protection.

PMID: 21216417

John J, Abraham AM, Muliyl J, John TJ, Deshpande JM, Kang G.

Gap in the prevalence of neutralising antibodies to polioviruses in antenatal women in southern India

Trans R Soc Trop Med Hyg; 2011, 105 (3): 179-80

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With the disappearance of circulating wild poliovirus and improved sanitation, protective antibody levels may wane over time following oral poliovirus vaccine (OPV) administration. This study evaluated the seroprevalence of neutralising antibodies to vaccine polioviruses among young Indian women who had

received at least three doses of OPV as primary immunisation. Of 60 women studied, 27 (45%) had antibody titres of <1:8 to one or more polioviruses, with the lowest levels for poliovirus types 3 and 1. These findings represent a possible immunity gap and this needs to be confirmed with further studies, which could include a challenge with vaccine virus.

PMID: 21277608

Manoharan A, Premalatha K, Chatterjee S, Mathai, D.
Correlation of TEM, SHV and CTX-M extended-spectrum beta lactamases among Enterobacteriaceae with their in vitro antimicrobial susceptibility

Indian J Med Microbiol; 2011, 29 (2): 161-4.

Prof. Benjamin M Pulimood Laboratories for Infection, Immunity and Inflammation (BMPLII), Department of Medicine Unit I and Infectious Disease, Christian Medical College, Vellore 632 004, Tamil Nadu, India. anandm@cmcvellore.ac.in

PURPOSE: The present study was carried out to characterize the ESBL types and evaluated their in vitro activity against a collection of Gram negative bacteria (GNB) from a multicentric Indian surveillance study. **MATERIAL AND METHODS:** During January 2005 to June 2006, six tertiary care centres in India forwarded 778 non-duplicate GNB to our reference laboratory. Three hundred GNB from this collection were selected based on clinical significance and were used in the present study. Tested isolates included *Escherichia coli* (167), *Klebsiella* spp. (122) and *Enterobacter* spp. (11). ESBL screening and confirmation was performed for all the isolates. Minimum inhibitory concentration of imipenem, meropenem, ertapenem, levofloxacin, amikacin, piperacillin/tazobactam and ceftriaxone was determined by the E-test method. Molecular typing of the ESBLs was performed by polymerase chain reaction among the 121 selected isolates. **RESULTS:** The study showed excellent susceptibility among the strains to imipenem (100%), meropenem (100%) and ertapenem (98.7%); good susceptibility to amikacin (89.7%) and piperacillin/tazobactam (85.3%) was observed. TEM and CTX-M were predominantly found in *E. coli* (39.2%) while, among the *Klebsiella* spp., TEM, SHV and CTX-M occurred together in 42.6% of the isolates. **CONCLUSION:** More than one ESBL was produced by many strains, and this was correlated with increased resistance levels. Carbapenems continue to show good

in vitro activity and ertapenem is a potential alternative to imipenem and meropenem. Continued antimicrobial resistance surveillance is warranted in light of these findings.

PMID: 21654112

Prakash JA, Kavitha ML, Mathai, E.

Nested polymerase chain reaction on blood clots for gene encoding 56 kDa antigen and serology for the diagnosis of scrub typhus

Indian J Med Microbiol; 2011, 29 (1): 47-50

Department of Microbiology, Christian Medical College, Vellore, India. prakjaj@yahoo.com

PURPOSE: Scrub typhus is a zoonotic illness endemic in the Asia-Pacific region. Early diagnosis and appropriate management contribute significantly to preventing adverse outcomes including mortality. Serology is widely used for diagnosing scrub typhus. Recent reports suggest that polymerase chain reaction (PCR) could be a rapid and reliable alternative. This study assessed the utility of these tests for scrub typhus diagnosis. **MATERIALS AND METHODS:** Nested PCR to detect the 56 kDa antigen gene of *O. tsutsugamushi* was performed on blood clots from 87 individuals with clinically suspected scrub typhus. Weil-Felix test and scrub typhus IgM ELISA were performed on serum samples from the same patients. As a gold standard reference test was not available, latent class analysis (LCA) was used to assess the performance of the three tests. **RESULTS:** The LCA analysis showed the sensitivity of Weil-Felix test, IgM ELISA and PCR to be 59%, 100% and 58% respectively. The specificity of ELISA was only 73%, whereas those of the Weil-Felix test and PCR were 94% and 100% respectively. **CONCLUSION:** Nested PCR using blood clots while specific, lacked sensitivity as compared to IgM ELISA. In resource-poor settings Weil-Felix test still remains valuable despite its moderate sensitivity.

PMID: 21304195

Pramanick A, Rathore S, Peter JV, Moorthy M, Lionel J.
Pandemic (H1N1) 2009 virus infection during pregnancy in South India

Int J Gynaecol Obstet; 2011, 113 (1): 32-5

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OBJECTIVE: To assess the clinical profile of pregnant/ puerperal women from a semi-urban Indian population who were infected with pandemic (H1N1) 2009 virus (P[H1N1]2009v) and to evaluate their outcome. **METHODS:** In a cross-sectional study, 566 women (79 pregnant/puerperal, 487 nonpregnant) who presented to a tertiary care hospital with influenza-like illness were tested for P(H1N1)2009v by real-time reverse transcriptase polymerase chain reaction. Outcomes measures were the maternal mortality and the perinatal mortality rate (PMR). **RESULTS:** Twenty (25%) pregnant/puerperal and 144 (30%) nonpregnant women tested positive for P(H1N1)2009v, with 5 pregnant and 3 postpartum women requiring admission to the intensive care unit (ICU). P(H1N1)2009v-related mortality was higher in pregnant than nonpregnant women (25% versus 8%; $P=0.04$). In the pregnant/puerperal cohort, factors associated with death included delayed presentation (median 6days versus 1.5days in survivors; $P=0.007$), need for ICU admission ($P=0.004$), need for ventilation ($P=0.001$), and renal failure ($P=0.001$). The PMR was 55.5/1000 births compared with 33.5/1000 births in the hospital overall during the study period. **CONCLUSION:** In a low-income country, P(H1N1)2009v infection in pregnancy is associated with considerable mortality. Delayed presentation to a tertiary care center, lack of awareness, and restricted access to treatment might have contributed to the high mortality.

PMID: 21315351

Vivek R, Kang G.

Hepatitis E virus infections in swine and swine handlers in Vellore, Southern India

Am J Trop Med Hyg; 2011, 84 (4): 647-9

Wellcome Trust Research Laboratory, Department of Gastrointestinal Sciences, Christian Medical College, Vellore, Tamil Nadu, India. vivekm@cmcvellore.ac.in

Hepatitis E virus (HEV) in industrialized countries is zoonotically transmitted, and swine act as a major reservoir of HEV. Serum samples from 102 swine and plasma from 34 swine handlers in Vellore, India were tested by using a reverse transcription-polymerase chain reaction to detect and genotype HEV. We measured levels of IgG against HEV in swine handlers and in age and geographically matched controls from

rural and urban populations in Vellore. HEV was amplified from two pigs and both viruses belonged to genotype 4. No HEV RNA was amplified from any swine handler, but 94.1% of swine handlers were positive for antibodies against HEV, a seroprevalence rate significantly higher than in rural and urban controls. The HEV genotype circulating in swine in India is different from that of humans, but the higher antibody levels in swine handlers support the possibility that zoonotic infections may occur.

PMID: 21460025

Vivekanandan P, Torbenson M, Ramakrishna B.
Hepatitis B virus-associated hepatocellular carcinoma from India: role of viral genotype and mutations in CTNNB1 (beta-catenin) and TP53 genes.
J Gastrointest Cancer. 2011 Mar;42(1):20-5.
Department of Pathology, Johns Hopkins University School of Medicine, Baltimore, MD, USA.

PURPOSE: Chronic hepatitis B virus (HBV) infection is the major risk factor for hepatocellular carcinoma (HCC) in India. Studies from other countries have linked HBV genotype C to a higher risk for HCC. This study was carried out to determine the association between genotype and HCC and also the frequency of mutations in CTNNB1 (beta-catenin) and TP53 genes in HBV-related HCC.

METHODS: Formalin-fixed paraffin-embedded (FFPE) tissues from 20 (15 autopsy, five resected specimens) cases of HBV-associated HCC were examined. Viral genotype was determined by sequencing portions of the HBV S gene using four overlapping PCR amplicons. Exon 3 of CTNNB1 and exon 7 of TP53 were sequenced. **RESULTS:** HBV genotyping was possible in 14 of 20 cases; genotype D was most common (n = 11) followed by C (n = 2) and A (n = 1). CTNNB1 mutations were noted in two of 15 amplifiable cases while two of 10 specimens showed TP53 mutations. **CONCLUSIONS:** HBV genotype can be ascertained from FFPE sections by sequencing multiple overlapping fragments to avoid the limitation of fragmented DNA. Genotype D was the common genotype in HBV-associated HCC. The very low frequency of TP53 mutation suggests low levels of aflatoxin B₁ exposure. The beta-catenin pathway appears not to be significantly involved in HBV-related

HCC in India. However, further larger studies are required to confirm these findings.

PMID: 20963515

CLINICAL OBSERVATIONAL:

Asirvatham JR, Deepti AN, Chyne R, Prasad MS, Chacko AG, Rajshekhar, V, Chacko G.

Pediatric tumors of the central nervous system: a retrospective study of 1,043 cases from a tertiary care center in South India

Childs Nerv Syst; 2011, 27 (8): 1257-63

Division of Neuropathology, Departments of Pathology, Christian Medical College, Vellore, 632004, India.

OBJECTIVE: The objective of this study is to describe the age, sex, location, and histopathology of pediatric tumors of the central nervous system diagnosed at a tertiary care center in South India. **PATIENTS AND METHODS:** One thousand forty-three tumors that occurred in children between 0 and 18 years of age diagnosed between 1 January 1990 and 31 December 2004 were reclassified according to the WHO 2007 classification, and the clinical data were analyzed. **RESULTS:** The mean age at diagnosis was 10.9 years with a male/female ratio of 1.7:1 with a male preponderance in most tumors. The five most frequent tumors were: astrocytoma (47.3%), medulloblastoma (11.4%), craniopharyngioma (9.7%), ependymal tumors (4.8%), and nerve sheath tumors (4.1%). Of these, 53.3% of the tumors were supratentorial, 40.6% were infratentorial, and 6.1% occurred in the spinal cord. Although the number of patients treated annually steadily increased over the study period, there was no relative increase in pediatric neoplasms compared to adults. **CONCLUSIONS:** The majority of tumors showed a male preponderance with astrocytoma being the most common tumor type. Although the cerebellum was the most frequent single site of occurrence, tumors involved the supratentorial compartment more often than the infratentorial compartment.

PMID: 21344241

Basu G, Chrispal A, Boorugu H, Gopinath KG, Chandy S, Prakash JA, Thomas K, Abraham AM, John GT.

Acute kidney injury in tropical acute febrile illness in a tertiary care centre—RIFLE criteria validation.

Nephrol Dial Transplant. 2011Feb;26(2):524-31.

Department of Nephrology, Christian Medical College, Vellore, India.

BACKGROUND: Acute febrile illnesses are a common cause of tropical acute kidney injury (AKI). The incidence and severity of AKI in tropical febrile illnesses and validity of RIFLE classification are unclear. **METHODS:** Consecutive adult inpatients of a tertiary hospital in southern India with tropical acute febrile illness between January 2007 and January 2008 were prospectively studied for the incidence and severity of AKI based on RIFLE classification and its association with mortality and dialysis requirement. **RESULTS:** The 367 patients (mean age 39.7+/-16.9 years; 60% males) with tropical acute febrile illness due to scrub typhus (51.2%), falciparum malaria (10.4%), enteric fever (8.7%), dengue (7.6%), mixed malaria (6.5%), leptospirosis (3.3%), undifferentiated acute febrile illness (8.4%) and others (3.8%) (spotted fever, vivax malaria and Hantaan virus infection) had an overall mortality rate of 12.3%. The incidence of AKI was 41.1%; of which, 17.4%, 9.3% and 14.4% were in the Risk, Injury and Failure classes, respectively. Of the patients, 7.9% required dialysis. Among the Risk, Injury and Failure groups, there was an incremental risk of mortality (OR 6.9, 20.2 and 25.6; $P<0.001$) and dialysis requirement (OR 3.4, 28.8 and 178.8; $P<0.001$). **CONCLUSIONS:** The incidence of AKI in the common tropical acute febrile illnesses in our study such as scrub typhus, falciparum malaria, enteric fever, dengue and leptospirosis is 41.1%. RIFLE classification is valid and applicable in AKI related to tropical acute febrile illnesses, with an incremental risk of mortality and dialysis requirement.

PMID: 20702532

Bhagat SK, Gopalakrishnan G, Kumar S, Devasia A, Kekre NS.

Redo-urethroplasty in pelvic fracture urethral distraction defect: an audit

World J Urol; 2011, 29 (1): 97-101

Department of Urology, Christian Medical College, Vellore, 632004, India.

PURPOSE: To predict the outcome of redo-urethroplasty after failed single or multiple open urethral procedures for pelvic fracture urethral distraction defects.

METHODS: From January 1997 to December 2006, 43 patients underwent redo-urethroplasty for pelvic fracture urethral distraction defect. Forty-one were referred from other centers. All had undergone open surgery along with an endoscopic procedure (one or more procedures in each patient) which included endoscopic internal urethrotomy, urethral stenting or urethral dilations. **RESULTS:** There were 43 men with mean age of 29 (range 11-52). Eleven had associated injuries: intraperitoneal bladder rupture (3), bladder neck (2), rectum (3), anal sphincter (2), combined bladder, rectum and anal sphincter (1). Trocar suprapubic cystostomy was performed in 22, rail-road procedures in 10 and open suprapubic cystostomy in 11 along with the management of associated injuries as immediate treatment. Of 43 patients, 28 had progressive perineal, and 12 had transpubic repair. Three patients had total bulbar necrosis, and they underwent prepuceal tube reconstruction (1) and staged substitution with BMG and standard scrotal inlay (2). Analysis of various factors like number of attempts at previous surgery and stricture length did not affect the outcome. A successful result was achieved in 36 (83.72%), improved and stable in five and failure in two. **CONCLUSIONS:** The overall result of redo-urethroplasty for pelvic fracture urethral distraction defect continues to be gratifying. Failures happen usually within the first 3 months. Substitution urethroplasty can be reserved for those who have long distraction defect. Long-term follow-up is essential using stringent criteria to measure success.

PMID: 20204376

Bhalvani C, Madhuri, V.

Ultrasound profile of hips of South Indian infants

Indian Pediatr; 2011, 48 (6): 475-7

Unit of Pediatric Orthopedics, Christian Medical College, Vellore, India. Correspondence to: Dr Vrisha Madhuri, Pediatric Orthopaedic Unit, Christian Medical College, Vellore, Tamilnadu, India. madhuriwalter@cmcvellore.ac.in.

One thousand consecutive infants, 437 girls and 563 boys, attending their first DPT vaccination at a mean age of 48 days underwent ultrasonological screening of the hips by Graf's technique at the immunization clinic of a tertiary hospital in South India. Graf I (mature) hips were seen bilaterally in 925 children.

The incidence of Graf type II hips was 74/1000 infants. The incidence of sonographically abnormal hips (II, III and IV) in this population was 7.5%. The hip dislocation rate was 1 in 1000 (0.1%).

PMID: 21555794

Chacko B, Peter JV, Patole S, Fleming JJ, Selvakumar R. Electrolytes assessed by point-of-care testing - Are the values comparable with results obtained from the central laboratory?

Indian J Crit Care Med. 2011 Jan;15(1):24-9.

Medical ICU, Christian Medical College & Hospital, Vellore, India.

BACKGROUND AND AIMS: When dealing with very sick patients, the speed and accuracy of tests to detect metabolic derangements is very important. We evaluated if there was agreement between whole blood electrolytes measured by a point-of-care device and serum electrolytes measured using indirect ion-selective electrodes. **MATERIALS AND METHODS:** In this prospective study, electrolytes were analyzed in 44 paired samples drawn from critically ill patients. Whole blood electrolytes were analyzed using a point-of-care blood gas analyzer and serum electrolytes were analyzed in the central laboratory on samples transported through a rapid transit pneumatic system. Agreement was summarized by the mean difference with 95% limits of agreement (LOA) and Lin's concordance correlation (ρ_c). **RESULTS:** There was a significant difference in the mean (\pm standard deviation) sodium value between whole blood and serum samples (135.8 \pm 5.7 mmol/L vs. 139.9 \pm 5.4 mmol/L, $P < 0.001$), with the agreement being modest ($\rho_c = 0.71$; mean difference -4.0; 95% LOA -8.78 to 0.65). Although the agreement between whole blood and serum potassium was good ($\rho_c = 0.96$), and the average difference small (-0.3; 95% LOA -0.72 to 0.13), individual differences were clinically significant, particularly at lower potassium values. For potassium values < 3.0 mmol/L, the concordance was low ($\rho_c = 0.53$) and the LOA was wide (1.0 to -0.13). The concordance for potassium was good ($\rho_c = 0.96$) for values ≥ 3.0 (mean difference -0.2; 95% LOA -0.48 to 0.06). **CONCLUSIONS:** Clinicians should be aware of the difference between whole blood and serum electrolytes, particularly when urgent samples are tested at point of care and routine follow-up electrolytes are sent to

the central laboratory. A correction factor needs to be determined at each center.

PMID: 21633542

Edwin N, Peter JV, John G, Eapen CE, Graham PL.

Relationship between clock and star drawing and the degree of hepatic encephalopathy.

Postgrad Med J. 2011 Sep;87(1031):605-11.

Department of General Medicine, Christian Medical College and Hospital, Vellore, India.

Purposes of the study Current hepatic encephalopathy grading tools are limited because of complexity or subjectivity. The degree of constructional apraxia could serve as a simple, objective and reproducible tool to grade encephalopathy. **Study design** In this cross-sectional study of patients with chronic liver disease, the degree of constructional apraxia was judged by their ability to copy a star and clock face and compared with conventional encephalopathy grading by the West Haven Criteria (WHC) and the Porto Systemic Encephalopathy Index (PSEI). Three blinded observers independently graded the figures. Sensitivity, specificity and positive predictive value (PPV) of clock and star scores (score 0 implying no encephalopathy and > 0 hepatic encephalopathy) were assessed against conventional scoring systems (WHC grade > 0 or PSEI ≥ 0.33 indicating encephalopathy). Mosaic and box plots were generated to assess if the degree of constructional apraxia correlated with the severity of encephalopathy. **Results** 71 patients were studied between October 2008 and July 2009; 11 (15.4%) had WHC grade 0, 32 (45%) grade 1, and 28 (39.4%) grades 2 and 3 encephalopathy. The sensitivity, specificity and PPV of the clock drawing for the diagnosis of encephalopathy was 85%, 80%, and 96%, respectively, and 77%, 70%, and 94%, respectively, for the star drawing. Box plots and intervals on mean PSEI showed an increasing relationship between clock/star scores and PSEI. There was substantial agreement between WHC and clock (weighted kappa 0.61) and star scores (weighted kappa 0.71). Inter-observer reliability was at least 0.70 for star and at least 0.79 for the clock score. **Conclusion** Clock and star drawing may serve as reproducible, inexpensive bedside tools for diagnosing and grading the severity of hepatic encephalopathy.

PMID: 21693571

Goel A, Ramakrishna B, Zachariah U, Ramachandran J, Eapen CE, Kurian G, Chandy G.

How accurate are the Swansea criteria to diagnose acute fatty liver of pregnancy in predicting hepatic microvesicular steatosis?

Gut. 2011Jan;60(1):138-9; author reply 139-40. Epub 2010 Oct 11.

Christian Medical College, Vellore, Tamil Nadu, India.

PMID: 20938054

Ismavel R, Samuel S, Boopalan PR, Chittaranjan SB.

A simple solution for wound coverage by skin stretching J Orthop Trauma; 2011, 25 (3): 127-32

Department of Orthopaedics Unit III, Christian Medical College, Vellore, Tamilnadu, India.

Viscoelastic properties of skin, ie, creep and stress relaxation, allow it to stretch beyond its normal state within a short period of time. Presented here is a technique of "wound coverage by skin stretching" that uses this principle. Kirschner wires were passed through the skin edges on either side of the wound margins. Dynamic traction was applied with traction bands improvised by the surgeon from surgical glove wrist rings. We used this method in eight patients to close 10 wounds that were not feasible to close with direct methods. We have found that this simple, economic, and effective method provides rapid functional wound closure when bone and other structures are exposed. It does not require specialized training or devices. Careful attention to the described surgical technique gives good results and few complications.

PMID: 21321505

John D, Kuriakose T, Devasahayam S, Braganza A.

Dimensions of the fovealavascular zone using the Heidelberg retinal angiogram-2 in normal eyes.

Indian J Ophthalmol. 2011 Jan-Feb;59(1):9-11.

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PURPOSE: The purpose was to study the dimensions of the foveal avascular zone (FAZ) using Heidelberg Retinal Angiogram-2 (HRA-2; Heidelberg Engineering GmbH, Dossenheim, Germany). **MATERIALS AND**

METHODS: An observational study of the FAZ area and circumference was done with fundus fluorescein angiography (FFA) using HRA-2 in 31 normal individuals. The FAZ was studied using both contrast-adjusted and nonadjusted methods. Contrast adjustment was done to obtain better visualization of the finer capillaries around the fovea enabling more precise measurements of the FAZ in normal eyes. **RESULTS:** The mean area of the FAZ calculated by the contrast-adjusted method was 0.2753 mm² (+/-0.074) and the mean circumference was 2.22 mm (+/-0.048). By the conventional method, the area and circumference of the FAZ were 0.6241 mm² (+/-0.177) and 3.23 mm (+/-0.454), respectively. **CONCLUSION:** The measurements of area and circumference of FAZ using contrast-adjusted methods were significantly smaller than the conventional method.

PMID: 21157065

Joseph P, Perakath, B.

Control of presacral venous bleeding with helical tacks on PTFE pledgets combined with pelvic packing

Techniques Coloproctology; 2011, 15 (1): 79-80

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Persistent and torrential bleeding from presacral veins is an uncommon complication during rectal resection. Control of bleeding is often difficult. We report an effective technique for controlling sacral bleeding using endoscopic helical tackers applied over pledgets of expanded polytetrafluoroethylene.

PMID: 20976513

Katumalla FS, Devasia A, Kumar R, Kumar S, Chacko N, Kekre N.

Second transurethral resection in T1G3 bladder tumors - Selectively avoidable?

Indian J Urol; 2011, 27 (2): 176-9

Department of Urology, Christian Medical College, Vellore, Tamil Nadu, India.

AIM: To assess the need of a second transurethral resection (TUR) in select T1G3 bladder tumor patients. **MATERIALS AND METHODS:** All the pT1G3 bladder tumors diagnosed during the period between January

2005 and December 2008 were included. Second TUR was routinely performed in all the pT1G3 bladder tumors within 4-6 weeks. Fifty out of the 68 patients with T1G3 underwent a second TUR and were retrospectively reviewed. The primary bladder lesions were grouped as solitary papillary, multiple papillary and sessile lesions. Statistical analysis was performed using STATA version 11 (STATA Corp., Texas, USA). RESULTS: Forty percent (n = 20) of the lesions were solitary papillary, 48% (n = 24) were multiple papillary and 12% (n = 6) were sessile lesions. All our resections had muscularis propria sampled at the end of the resection and separately sent for histopathological examination (HPE), which showed them to be tumor free. Thirty-six percent of patients had residual disease at the second resection and 4% were upstaged. Ninety-five percent of the patients (n = 19) with solitary papillary lesions did not have any residual disease and 50% (n = 12) of the multiple papillary and 83.3% (n = 5) of the sessile group had residual disease at the second TUR. CONCLUSIONS: Patients with T1G3 tumors do not represent a homogenous group. Second TUR is recommended in patients with high-grade T1 urothelial bladder carcinoma as it identifies residual disease and invasive disease. Solitary papillary lesions may be the only group where the need for the second TUR is questionable.

PMID: 21814305

Kekre AN, Vijayanand S, Dasgupta R, Kekre N.
Postpartum urinary retention after vaginal delivery.
Int J Gynaecol Obstet. 2011 Feb;112(2):112-5. Epub 2010 Dec 4.
Department of Obstetrics and Gynecology, Christian Medical College, Vellore, India.

OBJECTIVE: To determine the incidence of covert and overt postpartum urinary retention (PUR) after vaginal delivery and to determine obstetric variables contributing to PUR. **METHODS:** In a cross-sectional study, women who delivered vaginally underwent a transabdominal ultrasound scan for estimation of postvoid residual bladder volume and diagnosis of PUR. Patient data, including age, obstetric history, mode of delivery, and duration of labor, were compared between women with and those without PUR. **RESULTS:** Of the 771 participants recruited, 84 (10.9%) had PUR: 82 (10.6%) with covert PUR and 2 (0.3%) with overt PUR.

Women with instrumental delivery were more prone to develop PUR (P=0.03), with an odds ratio (OR) of 1.194 (95% confidence interval [CI], 0.56-1.90). A duration of labor of more than 700 minutes was a good predictor of PUR. The area under the receiver operating characteristic (ROC) curve was 0.634 (95% CI, 0.567-0.702; P<0.001), with an OR of 1.003 (95% CI, 1.001-1.004). **CONCLUSION:** Covert retention of urine was significantly associated with parturients who had an instrumental delivery and a duration of labor of more than 700 minutes.

PMID: 21130452

Kekre NS.
Bladder cancer - When will the paradigm change?
Indian J Urol; 2011, 27 (2): 161-2
Department of Urology, Christian Medical College, Vellore, Tamil Nadu, India. E-mail: editor@indianjurol.com.

PMID: 21814302

Kekre, NS.
Male infertility clinic - Is it useful?
Indian J Urol; 2011, 27 (1): 1
Department of Urology, Christian Medical College, Vellore, Tamil Nadu, India. E-mail: editor@indianjurol.com.

PMID: 21716931

Kumar K, Basker S, Jeslin L, Karthikeyan C, Matthias A.
Anaesthesia for pediatric video assisted thoracoscopic surgery.
J Anaesthesiol Clin Pharmacol. 2011 Jan;27(1):12-6.
Assistant Professor, Department of Anaesthesia and Critical Care, Christian Medical College & Hospital, Vellore, India.

PMID: 21804698

Livingstone RS, Keshava SN.
Technical note: Reduction of radiation dose using ultrasound guidance during transjugular intrahepatic portosystemic shunt procedure
Indian J Radiol Imaging; 2011, 21 (1): 13-4

Department of Radiology, Christian Medical College, Vellore - 632 004, India.

The transjugular intrahepatic portosystemic shunt (TIPS) procedure for decompression of the portal venous system generally performed under fluoroscopic guidance has undergone continuous technical modifications recently. Due to the length of the procedure, the fluoroscopy times are reasonably high, thus increasing the risk from ionizing radiation. Radiation doses were measured for 19 patients using dose area product (DAP) meter. The average DAP value for the TIPS procedure was 63.86 Gy cm(2) (21.12-117.07). Radiation doses to patients can be reduced with the use of USG guidance and intermittent fluoroscopy screening.

PMID: **21431025**

Madhuri V, Dutt V, Samuel K, Gahukamble AD.

Intra-operative femoral head vascularity assessment: An innovative and simple technique

Indian J Orthop; 2011, 45 (3): 231-5

Department of Orthopaedics, Christian Medical College, Vellore, Tamil Nadu, India.

BACKGROUND: Documentation of femoral head blood flow before, during and after head preserving surgery is important for safeguarding vascularity to the femoral head and for documentation in patients in whom the blood flow is compromised. Laser Doppler flowmetry and microsensor intracranial pressure (ICP) transducers have been used to satisfactorily depict such changes. However, these devices are expensive and not universally available in orthopedic operating rooms. We describe a new technique for the assessment of intra-operative blood flow to the femoral head. This is a technical description of a simple system utilized in eight patients to assess the femoral head vascularity using equipment available with the anesthetist. **MATERIALS AND METHODS:** A standard epidural catheter attached to an arterial pressure transducer is introduced into the femoral head from the margin of the articular surface via a small hole drilled with a K wire. The pressure wave within the epiphysis is detected on the anesthesia monitor. Pressure within the femoral head is used as a surrogate for blood flow. The pressure and the wave

form are correlated with the electrocardiogram (ECG) wave on the anesthetic machine. The technique was used in eight children with hip pathology requiring hip dislocation for documenting the hip vascularity status. **RESULT:** There was good correlation between the pressure wave and the ECG for a patient with presumed normal femoral head vascularity, whereas the pressure measurements were greatly reduced and the wave form was absent in a femoral head with radiographic or bone scan evidence of avascular necrosis. **CONCLUSION:** This new technique is a cheap and readily accessible alternative to Laser Doppler flowmetry and ICPs monitoring probes for the assessment of blood flow to the femoral head.

PMID: **21559102**

Mani B, Sarawagi RCherian RA.

Review of the dimensions of the median nerve and carpal tunnel using sonography in asymptomatic adults

J Med Imaging Radiat Oncol; 2011, 55 (2): 126-31

Christian Medical College, Vellore, Tamil Nadu, India. bettymani@rediffmail.com

OBJECTIVE: The study aims to establish the normal range of all sonologic measurements of carpal tunnel (CT) structures in an asymptomatic population. **METHODS:** Sonological evaluation of 150 wrists in 75 asymptomatic adults was performed. The cross-sectional area (CSA) of the median nerve at four levels, the flattening ratio (FR) at three levels, the antero-posterior (AP) diameter of the CT and the distance of the transverse carpal ligament (TCL) from the trapezium-hamate (TmH) line were measured. **RESULTS:** The mean (standard deviation (SD)) CSA of the median nerve at the distal forearm, CT inlet, mid and outlet were 6.8 (1.3), 7.4 (1.1), 7.5 (1.0), 7.1 (1.0) mm(2) , respectively. The mean (SD) FR at the CT inlet, mid and outlet were 2.66 (0.54), 2.55 (0.54), 3.69 (0.82), respectively. The mean (SD) AP diameter of the CT was 10.4 mm (1.1). Volar bowing of the retinaculum was seen in 7.3% of normal wrists. **CONCLUSIONS:** The normal range at two SDs of the CSA of the median nerve at the inlet was 5.2-9.6 mm(2) . The upper limit of volar bowing of the flexor retinaculum was 0.8 mm. The FR overlaps with values obtained in other studies of patients with carpal tunnel syndrome. The mean AP diameter of the CT was 10.4 mm (SD 1.1). To the best of our knowledge, this is the largest study

performed in an asymptomatic population assessing the different sonological parameters related to the CT.

PMID: 21501400

Manipadam MT, Nair S, Viswabandya A, Mathew L, Srivastava A, Chandy M.

Non-Hodgkin lymphoma in childhood and adolescence: frequency and distribution of immunomorphological types from a tertiary care center in South India.

World JPediatr. 2011 Nov;7(4):318-25. Epub 2011 Jun 1.

Department of Pathology, Christian Medical College, Vellore, India, mtm2005@cmcvellore.ac.in.

BACKGROUND: There is a dearth of published literature on the frequency and distribution of pediatric and adolescent non-Hodgkin lymphoma (NHL) in India according to the 2001 WHO classification. The aim of this study was to record the distribution of the different subtypes, analyze the major subtypes, and compare it with the published data from other countries. A review of pediatric NHL statistics from population-based cancer registries was included in this study. **METHODS:** The study was conducted using information retrieved from the files of our institution. A total of 467 patients with lymphoma (excluding mycosis fungoides) were recorded in the under 20 years group over a period of 6 years, of which 252 patients suffered from NHL. The demographic characteristics, frequency and distribution of different subtypes were noted and compared with published reports from other parts of the world. **RESULTS:** T-lymphoblastic lymphoma/leukemia constituted the majority (32.1%) of all NHLs in children and adolescents in our study. The other major subgroups were Burkitt's lymphoma, anaplastic large cell lymphoma, and diffuse large B cell lymphoma. Burkitt's lymphoma in this study had clinical presentations similar to those seen in western countries. **CONCLUSIONS:** The distribution of different subtypes of lymphoma in pediatric and adolescent NHL in India differs considerably from that in western countries and other eastern countries.

PMID: 21633853

Mathew PT, David S, Thomas N.

Endothelial cell loss and central corneal thickness in patients with and without diabetes after manual small incision cataract surgery. Cornea. 2011 Apr;30(4):424-8.

Department of Ophthalmology, Schell Eye Hospital, Christian Medical College, Vellore, India. priyathomasmathew@gmail.com

PURPOSE: Cataract surgery is known to change the corneal endothelial cell density and morphology. In patients with diabetes, this change is more pronounced. This prospective cohort study was conducted to assess and compare the endothelial cell loss and change in central corneal thickness (CCT) after manual small incision cataract surgery (SICS) in patients with diabetes versus age-matched patients without diabetes. **METHODS:** Consecutive patients with diabetes (153) in the age group 40-70 years and age-matched patients without diabetes (163) undergoing manual SICS were enrolled. Preoperative and 1 week, 6 weeks, and 3 months postsurgery assessments of corneal endothelial loss and change in CCT were done using specular microscopy and ultrasound pachymetry. **RESULTS:** There was a steady drop in the endothelial density in both the groups postoperatively, with the percentage of endothelial loss at 6 weeks and 3 months being 9.26 +/- 9.55 and 19.24 +/- 11.57, respectively, in patients with diabetes and 7.67 +/- 9.2 and 16.58 +/- 12.9, respectively, in controls. The percentage of loss between 6 weeks and 3 months was found to be of significant difference ($P < 0.023$). In both the groups, an initial increase in CCT till the second postoperative week was followed by a reduction of CCT in the subsequent follow-up (sixth week) and a further reduction in the last follow-up (3 months). The change in CCT between the second and sixth weeks was significantly higher in the diabetic group ($P = 0.045$). **CONCLUSIONS:** The diabetic endothelium was found to be under greater metabolic stress and had less functional reserve after manual SICS than the normal corneal endothelium.

PMID: 20885307

Moorthy M, Chacko B, Ramakrishna K, Samuel P, Karthik G, Kalki RC, Abraham AM, Akhuj A, Valsan A, Abraham OC, Peter JV.

Risk of pandemic (H1N1) 2009 virus infection among healthcare workers caring for critically ill patients with pandemic (H1N1) 2009 virus infection

J Hosp Infect; 2011, 77 (4): 365-6

Department of Virology, Christian Medical College Hospital, Vellore, India.

PMID: 21316801

Nair S, Rajshekhar V.

Evaluation of pain following supratentorial craniotomy.
Br J Neurosurg. 2011 Feb;25(1):100-3. Epub 2010 Dec 15
Department of Neurological Sciences, Christian Medical
College, Vellore, India.

Background. Craniotomy is considered less painful than other surgical procedures and supratentorial surgeries are thought to be the least painful among them. We studied the intensity of pain in the postoperative period following a supratentorial craniotomy while using oral paracetamol as the sole analgesic. The effect of temporalis muscle incision on the intensity of pain was also studied. Methods. In a prospective study over 6 months, 43 patients with a pre-operative Glasgow coma scale (GCS) score 15/15, aged >16 years who underwent a supratentorial craniotomy and were admitted to neurosurgical ICU were included in the study. Patients with a postoperative GCS score of <15 on admission to the ICU were excluded from the study. All patients received oral paracetamol for pain relief. Postoperative pain scale was used in the first hour to assess pain objectively. Visual analogue scale was used thereafter to record pain at 8, 12, 24 and 48 h post-craniotomy. Patients were familiarised with these scales preoperatively. Postoperative pain scores were compared with preoperative scores using paired T test, whereas significance of temporalis muscle involvement in incision for increased post-craniotomy pain was evaluated using Fischer's exact test. Results. Inadequate analgesia was complained of by 63% (n = 27) patients in the first 12 h postoperatively. However, severe pain was present only in 12% (n = 5) of patients. Incidence of pain decreased thereafter at 24 and 48 h. Twenty-seven percent (n = 12) patients were free of pain at all study periods. Fifty percent (n = 3) of patients who complained of significant pain beyond 12 h developed postoperative complications. Incision of temporalis muscle was not associated with a significant increase in severity of postoperative pain. Conclusion. Pain following craniotomy is adequately addressed in only about 27% of patients with oral paracetamol. However, the long-term analgesic effect is satisfactory. Persistence of pain of moderate or severe intensity 24 h after a craniotomy could suggest an impending postoperative complication.

PMID: **21158514**

Nirmal TJ, Gupta AK, Kumar S, Devasia A, Chacko N, Kekre NS.

Tensor fascia lata flap reconstruction following groin dissection: is it worthwhile?
World J Urol; 2011, 29 (4): 555-9
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Vellore, Tamil Nadu, 632004, India, nirmaltj@gmail.com.

OBJECTIVE: To compare the morbidity of primary skin closure with elective Tensor Fascia Lata (TFL) flap cover in groin dissections. MATERIALS AND METHODS: This was a retrospective study between January 2007 and December 2009. All patients undergoing groin dissections without skin involvement were included. RESULTS: Of the twenty-five patients, who underwent groin dissections, 14 had primary skin closure (28 groin dissections)-group I. Eleven had TFL flap cover as a means of primary reconstruction (20 groin dissections)-group II. In group I, there were 16 (57%) inguinal dissections and 12 (43%) ilioinguinal block dissections, whereas 82% in group II underwent ilioinguinal dissections (p = 0.09). Wound infection requiring treatment with a culture specific antibiotic was required in 4 (14%) in group I (n = 28) and only 1 (5%) in group II (n = 20) (p = 0.38). In group I, 7 (25%) had major flap necrosis and minor necrosis was seen in another 7 (25%). Only three (15%) in group II developed minor flap necrosis (p = 0.01). Following an ilioinguinal dissection, flap necrosis occurred in 75% of groins that underwent primary closure and in 17% of those which were reconstructed with TFL (p = 0.001). Seroma formation was seen in 5 (18%) in group I and 3 (15%) in group II (p = 1.0). Lymphoedema occurred in equal numbers in both groups. The duration of hospital stay was 20 +/- 14 days in the primary closure group and 16 +/- 3 days in the TFL group. CONCLUSION: The TFL flap can reduce postoperative morbidity and decrease hospital stay. Prophylactic TFL flap reconstruction following ilioinguinal dissections is advisable.

PMID: **21626446**

Nithyananth M, Boopalan PR, Titus VT, Sundararaj GD, Lee VN.

Long-term outcome of high-energy open Lisfranc injuries: a retrospective study
J Trauma; 2011, 70 (3): 710-6.

Department of Orthopaedics, Christian Medical College,
Vellore 632004, Tamil Nadu, India.
manasseh@cmcvellore.ac.in

BACKGROUND: The outcome of open Lisfranc injuries has been reported infrequently. Should these injuries be managed as closed injuries and is their outcome different? **METHODS:** We undertook a retrospective study of high-energy, open Lisfranc injuries treated between 1999 and 2005. The types of dislocation, the associated injuries to the same foot, the radiologic and functional outcome, and the complications were studied. There were 22 patients. Five patients died. One had amputation. Of the remaining 16 patients, 13 men were followed up at a mean of 56 months (range, 29-88 months). The average age was 36 years (range, 7-55 years). **RESULTS:** According to the modified Hardcastle classification, type B2 injury was the commonest. Ten patients had additional forefoot or midfoot injury. All patients were treated with debridement, open reduction, and multiple Kirschner (K) wire fixation. All injuries were Gustilo Anderson type IIIa or IIIb. Nine patients had split skin graft for soft tissue cover. Mean time taken for wound healing was 16 days (range, 10-30 days). Ten patients (77%) had fracture comminution. Eight patients had anatomic reduction, whereas five had nonanatomic reduction. Ten of 13 (77%) patients had at least one spontaneous tarsometatarsal joint fusion. The mean American Orthopaedic Foot and Ankle Society score was 82 (range, 59-100). Nonanatomic reduction, osteomyelitis, deformity of toes, planus foot, and mild discomfort on prolonged walking were the unfavorable outcomes present. **CONCLUSION:** In open Lisfranc injuries, multiple K wire fixation should be considered especially in the presence of comminution and soft tissue loss. Although anatomic reduction is always not obtained, the treatment principles should include adequate debridement, maintaining alignment with multiple K wires, and obtaining early soft tissue cover. There is a high incidence of fusion across tarsometatarsal joints.

PMID: 21610363

Padankatti SM, Macaden AS, Cherian SM, Thirumugam M, Pazani D, Kalaiselvan M, John JA, Subbian E, Prakash H, Poonnoose PM, Kavitha ML, Devadarasini M, Viswabandya A, Mathews V, Srivastava A.

A patient-prioritized ability assessment in haemophilia: the Canadian Occupational Performance Measure.

Haemophilia; 2011, 17 (4): 605-11

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Vellore, India.

Assessment of musculoskeletal function in individuals with haemophilia has been attempted with clinimetric instruments, which use predetermined domains for assessing the same. This study introduces the application of an instrument, the Canadian Occupational Performance Measure (COPM), which is an open-ended questionnaire that allows patients to prioritize their needs and rate their performance in different tasks of daily living as well as their satisfaction in performing them. To study the utility of COPM in evaluating the musculoskeletal functional status of patients with haemophilia and to assess its effectiveness in planning individualized management plans for them. COPM was administered to 67 individuals with haemophilia aged 10-55 years and the data were compared with functional deficits identified through FISH (Functional Independence Score for Haemophilia). A total of 31 performance difficulties in the areas of self-care (62%), productivity (21%) and leisure (17%) were identified by COPM. All eight domains of FISH were identified in COPM as problems in self-care. In addition to these, COPM identified problems in the areas of productivity and leisure. In 78% of the responses on COPM, there was concordance between the performance and satisfaction scores. However, there was discordance between the two in the remaining 22% of responses. COPM is a useful tool for assessment of musculoskeletal dysfunction in haemophilia. It provides a greater insight into the needs of each patient and helps in planning individualized intervention strategies.

PMID: 21299744

Peter J, David S, Danda D, Peter JV, Horo S, Joseph G.

Ocular manifestation of Takayasu arteritis: a cross-sectional study.

Retina. 2011 Jun;31(6):1170-8.

Schell Eye Hospital, Christian Medical College & Hospital,
Vellore, India.

PURPOSE: To detail the spectrum of eye manifestations in Takayasu arteritis and factors predisposing to its development. **METHODS::** In this cross-sectional study, 61 patients with proven Takayasu arteritis who were identified during a 16-month period were evaluated for disease- and treatment-related eye manifestations. A fundus fluorescein angiography examination was performed where indicated and with the patients consent. **RESULTS::** The mean (+/-standard deviation) duration of illness before ophthalmic evaluation was 55 +/- 69 months. Decreased vision was the most common ocular symptom (30%). Thirty-five patients underwent fundus fluorescein angiography examination. Takayasu retinopathy was seen in 9 (15%), ocular ischemic syndrome in 4 (7%), and hypertensive retinopathy in 10 (16%) patients. The most common treatment-related ocular complication was steroid-induced cataract (23%). Other manifestations included iris neovascularization (n = 3), anterior ischemic optic neuropathy (n = 2), steroid-induced glaucoma (n = 1), neovascular glaucoma (n = 1), and uveitis (n = 1). Those manifesting Takayasu retinopathy and ocular ischemic syndrome had significantly ($P < 0.05$) lower blood pressure in both upper limbs compared with patients not manifesting ischemic retinopathy. A significant ($P < 0.03$) proportion of patients with Takayasu retinopathy and ocular ischemic syndrome had a nonrecordable right upper limb blood pressure. **CONCLUSION::** Disease- and treatment-related ocular complications are not infrequent in Takayasu arteritis. Arteritis involving the aortic arch and its branches favors the development of ischemic ocular complications.

..... PMID: **21317836**

Pulimood AB, Amarapurkar DN, Ghoshal U, Phillip M, Pai CG, Reddy DN, Nagi B, Ramakrishna BS.
Differentiation of Crohn's disease from intestinal tuberculosis in India in 2010. World J Gastroenterol. 2011 Jan 28;17(4):433-43.
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Differentiating intestinal tuberculosis from Crohn's disease (CD) is an important clinical challenge of considerable therapeutic significance. The problem is of greatest magnitude in countries where tuberculosis

continues to be highly prevalent, and where the incidence of CD is increasing. The final clinical diagnosis is based on a combination of the clinical history with endoscopic studies, culture and polymerase chain reaction for *Mycobacterium tuberculosis*, biopsy pathology, radiological investigations and response to therapy. In a subset of patients, surgery is required and intraoperative findings with pathological study of the resected bowel provide a definitive diagnosis. Awareness of the parameters useful in distinguishing these two disorders in each of the different diagnostic modalities is crucial to accurate decision making. Newer techniques, such as capsule endoscopy, small bowel enteroscopy and immunological assays for *Mycobacterium tuberculosis*, have a role to play in the differentiation of intestinal tuberculosis and CD. This review presents currently available evidence regarding the usefulness and limitations of all these different modalities available for the evaluation of these two disorders.

..... PMID: **21274372**

Rajshekhar V, Velayutham P, Joseph M, Babu KS.
Factors predicting the feasibility of monitoring lower-limb muscle motor evoked potentials in patients undergoing excision of spinal cord tumors
J Neurosurg Spine; 2011, 14 (6): 748-53
Department of Neurological Sciences, Christian Medical College, Vellore, India.

OBJECT: This prospective study on intraoperative muscle motor evoked potentials (MMEPs) from lower-limb muscles in patients undergoing surgery for spinal cord tumors was performed to: 1) determine preoperative clinical features that could predict successful recording of lower-limb MMEPs; 2) determine the muscle in the lower limb from which MMEPs could be most consistently obtained; 3) assess the need to monitor more than 1 muscle per limb; and 4) determine the effect of a successful baseline MMEP recording on early postoperative motor outcome. **METHODS:** Of 115 consecutive patients undergoing surgery for spinal cord tumors, 110 were included in this study (44 intramedullary and 66 intradural extramedullary tumors). Muscle MEPs were generated using transcranial electrical stimulation under controlled anesthesia and were recorded from

the tibialis anterior, quadriceps, soleus, and external anal sphincter muscles bilaterally. The effect of age (≤ 20 or > 20 years old), location of the tumor (intramedullary or extramedullary), segmental location of the tumor (cervical, thoracic, or lumbar), duration of symptoms (≤ 12 or > 12 months), preoperative functional grade (Nurick Grades 0-3 or 4-5), and muscle power (Medical Research Council Grades 0/5-3/5 or 4/5-5/5) on the success rate of obtaining MMEPs was studied using multiple regression analysis. The effect of the ability to monitor MMEPs on motor outcome at discharge from the hospital was also analyzed. RESULTS: The overall success rate for obtaining baseline lower-limb MMEPs was 68.2% (75 of 110 patients). Eighty-nine percent of patients with Nurick Grades 0-3 had successful MMEP recordings. Muscle MEPs could not be obtained in any patient in whom muscle power was 2/5 or less, but were obtained from 91.4% of patients with muscle power of 4/5 or more. Analysis showed that only preoperative Nurick grade ($p \leq 0.0001$) and muscle power ($p < 0.0001$) were significant predictors of the likelihood of obtaining MMEPs. Responses were most consistently obtained from the tibialis anterior muscle (68%), but in the other 32% MMEPs could not be recorded from the tibialis anterior but could be recorded from another muscle. The ability to monitor MMEPs was associated with better motor outcome at discharge from the hospital ($p = 0.052$). CONCLUSIONS: The likelihood of obtaining lower-limb MMEPs is significantly greater in patients with better functional grades and higher motor power. Muscle MEPs are most consistently obtained from the tibialis anterior muscle but other muscles should also be monitored to optimize the chances of obtaining MMEP responses from the lower limbs.

PMID: 21438657

Ramamurthy M, Alexander M, Aaron S, Kannangai R, Ravi V, Sridharan G, Abraham AM.

Comparison of a conventional polymerase chain reaction with real-time polymerase chain reaction for the detection of neurotropic viruses in cerebrospinal fluid samples

Indian J Med Microbiol; 2011, 29 (2): 102-9

Department of Clinical Virology, Christian Medical College, Vellore 632 004, India.

PURPOSE: To compare a conventional polymerase chain reaction (PCR) and real-time PCR for the detection of neurotropic DNA viruses. MATERIALS AND METHODS: A total of 147 cerebrospinal fluid (CSF) samples was collected from patients attending a tertiary care hospital in South India for a period from 2005 to 2008. All these samples were tested using a conventional multiplex/uniplex PCR and a real-time multiplex/uniplex PCR. This technique was used to detect a large number of herpes viruses responsible for central nervous system infections, including HSV-1, HSV-2, VZV, CMV and EBV and the polyoma virus JCV. RESULTS: Overall, in the entire set of samples, the real-time PCR yielded 88 (59.9%) positives and conventional PCR had six (4.1%) positives. CONCLUSION: Our results suggest that the real-time PCR assay was more sensitive compared with the conventional PCR. The advantage of real-time PCR is that it can be performed much faster than conventional PCR. Real-time PCR is less time-consuming, less labour-intensive and also reduces the chance of contamination as there is no post-amplification procedure. In the entire study population, the major viruses detected using real-time PCR were EBV (34%), HSV-2 (10.8%) and VZV (6.8%).

PMID: 21654102

Raveendran R, Prabu HN, Ninan S, Darmalingam S.

Fast-track management of pneumothorax in laparoscopic surgery

Indian J Anaesth; 2011, 55 (1): 91-2

Department of Anaesthesiology, Christian Medical College and Hospital, Vellore, Tamil Nadu, India.

PMID: 21431075

Revanappa KK, Rajshekhar, V.

Comparison of Nurick grading system and modified Japanese Orthopaedic Association scoring system in evaluation of patients with cervical spondylotic myelopathy.

Eur Spine J; 2011

Department of Neurological Sciences, Christian Medical College, Vellore, 632004, Tamil Nadu, India.

The purpose of this study was to determine the correlation between Nurick grade and modified Japanese Orthopaedic Association (mJOA) scores in the preoperative and postoperative follow-up evaluation

of patients with cervical spondylotic myelopathy (CSM). This retrospective study included 93 patients with CSM who underwent central corpectomy (CC) between 1998 and 2008. Preoperative and postoperative Nurick grade and total mJOA (tmJOA) and lower limb mJOA (llmJOA) score of each patient was documented and the correlation between the Nurick grades and the mJOA scores was studied. At presentation and follow-up, correlation between Nurick grade and llmJOA (Spearman's rho 0.901 and 0.886) was better than with tmJOA (0.846 and 0.862). The Nurick grade recovery rate (NGRR) correlated better with the llmJOARR than with tmJOARR (Spearman's rho 0.840 and 0.793, respectively). Overall, the correlation of preoperative and follow-up scores and recovery rates was better in patients with moderate myelopathy than in those with mild or severe myelopathy. At follow-up, 78/93 (83.9%) patients had improved in their Nurick grades, whereas 88/93 (94.6%) had improved in their tmJOA scores and 73/93 (78.5%) in their llmJOA scores. Although Nurick grade and llmJOA had good correlation preoperatively, at follow-up evaluation after surgery, there was disagreement in 11.8% (11/93) patients. One of the major reasons for the discrepancy between the Nurick scale and the llmJOA at follow-up evaluation was the ability of patients to regain employment without an improvement in the llmJOA score. As disease-specific scales, both Nurick scale and mJOA score should be utilized in the evaluation of patients with CSM.

PMID: 21424591

Sarkar H, Thakar S, Kumar SS, Moorthy RK, Rajshekhar V. A computed tomography-based localizer to determine the entry site of the ventricular end of a parietal ventriculoperitoneal shunt. Neurosurgery. 2011 Mar;68(1 Suppl):162-7; discussion 167. Department of Neurological Sciences, Christian Medical College, Vellore, India.

BACKGROUND: One of the major principles of shunt insertion into the brain involves choosing an entry site that avoids eloquent cortex. **OBJECTIVE:** We describe a novel tool to accurately locate the burr hole for insertion of the ventricular end of a catheter during parietal ventriculoperitoneal shunt surgery. **METHODS:** Computed tomography (CT)-based measurements in

2 dimensions were used to mark the entry point with the help of an indigenously designed Vellore burr hole localizer (VL). Patients underwent surgery with either the conventional method to localize the burr hole (Keen point; group A; n = 28) or the VL (group B; n = 28). An independent observer determined the accuracy of shunt placement on postoperative CT scans. The VL is designed with a fixed horizontal arm that can be aligned with the CT or magnetic resonance reference plane and a vertical arm with a flexible sliding horizontal arm that is attached to it with an adjustable screw. By manipulating the flexible arm along the contour of the skull and using the scale provided on both the vertical and horizontal arms, we can mark the burr hole site for placement of a parietal ventriculoperitoneal shunt. **RESULTS:** Overall accuracy in group A was 32.1%, whereas in group B, an accuracy of 82.1% could be achieved ($P < .01$). **CONCLUSION:** Placement of a burr hole guided by the VL increases the accuracy of the desired entry point of the ventricular catheter.

PMID: 21304331

Vedantam A, Revanappa KK, Rajshekhar V. Changes in the range of motion of the cervical spine and adjacent segments at >24 months after uninstrumented corpectomy for cervical spondylotic myelopathy. Acta Neurochir (Wien). 2011 May;153(5):995-1001. Epub 2011 Mar 6. Department of Neurological Sciences, Christian Medical College and Hospital, Vellore, 632004, Tamil Nadu, India.

BACKGROUND: Few clinical studies have described the changes in the range of motion (ROM) of the cervical spine and adjacent segments following central corpectomy. We aimed to quantify the changes in range of motion (ROM) of the cervical spine and the adjacent segments at >24 months following uninstrumented central corpectomy (CC) for cervical spondylotic myelopathy (CSM) and to determine the contribution of the adjacent segments to the compensation for loss of motion of the cervical spine following CC. **METHODS:** Preoperative and follow-up lateral cervical spine radiographs of 36 patients who underwent CC for CSM between 2001 and 2007 were compared for the ROM of the subaxial cervical spine, superior and inferior adjacent segment. Anterior

osteophytes as seen on the radiographs were classified according to Nathan's grading system. **RESULTS:** The mean duration of follow-up was 48.5 months. At follow-up, the total cervical spine ROM decreased by 18.3 degrees \pm 2.2 degrees ($p < 0.001$), the superior adjacent segment ROM increased by 2.3 degrees \pm 0.9 degrees ($p = 0.01$) and the inferior adjacent segment ROM, measured in 20 cases, increased by 6.2 degrees \pm 1.7 degrees ($p = 0.01$). The superior adjacent segment showed a 70% increase, whereas the inferior adjacent segment showed a 110% increase in mobility. Nathan's grade at the superior or inferior adjacent segment increased in 12 cases. **CONCLUSIONS:** CC significantly reduces the motion of the cervical spine and increases the adjacent segment mobility at intermediate follow-up. The inferior adjacent segment shows greater compensation of motion as compared to the superior adjacent segment in our series. Adjacent segment degeneration as estimated by Nathan's grade was seen in one-third of the cases.

PMID: 21380851

CLINICAL TRIALS:

Sudarsanam TD, John J, Kang G, Mahendri V, Gerrior J, Franciosa M, Gopal S, John KR, Wanke CA, Muliyl J.

Pilot randomized trial of nutritional supplementation in patients with tuberculosis and HIV-tuberculosis coinfection receiving directly observed short-course chemotherapy for tuberculosis.

Trop Med Int Health. 2011 Jun;16(6):699-706.

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OBJECTIVE: To investigate the effects of nutritional supplementation on the outcome and nutritional status of south Indian patients with tuberculosis (TB) with and without human immunodeficiency virus (HIV) coinfection on anti-tuberculous therapy. **METHOD:** Randomized controlled trial on the effect of a locally prepared cereal-lentil mixture providing 930 kcal and a multivitamin micronutrient supplement during anti-tuberculous therapy in 81 newly diagnosed TB alone and 22 TB-HIV-coinfected patients, among whom 51 received and 52 did not receive the supplement. The primary outcome evaluated at completion of TB therapy was outcome of TB treatment, as classified by the

national programme. Secondary outcomes were body composition, compliance and condition on follow-up 1 year after cessation of TB therapy and supplementation. **RESULTS:** There was no significant difference in TB outcomes at the end of treatment, but HIV-TB coinfecting individuals had four times greater odds of poor outcome than those with TB alone. Among patients with TB, 1/35 (2.9%) supplemented and 5/42 (12%) of those not supplemented had poor outcomes, while among TB-HIV-coinfecting individuals, 4/13 (31%) supplemented and 3/7 (42.8%) non-supplemented patients had poor outcomes at the end of treatment, and the differences were more marked after 1 year of follow-up. Although there was some trend of benefit for both TB alone and TB-HIV coinfection, the results were not statistically significant at the end of TB treatment, possibly because of limited sample size. **CONCLUSION:** Nutritional supplements in patients are a potentially feasible, low-cost intervention, which could impact patients with TB and TB-HIV. The public health importance of these diseases in resource-limited settings suggests the need for large, multi-centre randomized control trials on nutritional supplementation.

PMID: 21418447

Thomas N, George KC, Sridhar S, Kumar M, Kuruvilla KA, Jana AK.

Whole body cooling in newborn infants with perinatal asphyxial encephalopathy in a low resource setting: a feasibility trial

Indian Pediatr; 2011, 48 (6): 445-51

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OBJECTIVE: To determine the feasibility and safety of whole body cooling in newborn infants with perinatal asphyxial encephalopathy in a low resource setting. **DESIGN:** Feasibility trial. **SETTING:** Tertiary care perinatal centre. **SUBJECTS:** Infants born at > 35 weeks gestation with perinatal asphyxia were included in the study. **INTERVENTIONS:** Infants were cooled to a rectal temperature of 33 ± 0.5 degrees C for 72 hours using cloth-covered ice-gel packs. Vital parameters were monitored continuously. **OUTCOME MEASURES:** The primary outcome was the achievement of target

temperature within 1 hour of initiation of treatment and maintaining the target temperature for 72 hours. Adverse events and possible complications of hypothermia were the secondary outcomes measured. RESULTS: Twenty infants were included in the study. The mean time taken to achieve target rectal temperature was 52+/-25 minutes. The mean rectal temperature during cooling was 32.9+/-0.11 masculineC. The target temperature could be maintained for 72 hours without difficulty in all babies. Adverse events observed during cooling were thrombocytopenia (25%), sinus bradycardia (25%), deranged bleeding parameters (20%), aposteatonecrosis (15%), hyperglycemia (15%), hypoglycemia (10%), hypoxemia (5%), life-threatening coagulopathy (5%) and death (5%). Shivering was noted in many of the babies, especially in the initial phase of cooling. CONCLUSION: Whole body cooling in term infants with perinatal asphyxia is achievable, safe and inexpensive in a low-resource setting.

PMID: 21169643

EXPERIMENTAL RESEARCH:

Abraham P, Isaac B, Ramamoorthy H, Natarajan K.

Oral glutamine attenuates cyclophosphamide-induced oxidative stress in the bladder but does not prevent hemorrhagic cystitis in rats.

J Med Toxicol. 2011 Jun;7(2):118-24.

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Cyclophosphamide (CP) is widely used in the treatment of cancer and non-malignant disease states such as rheumatoid arthritis. Hemorrhagic cystitis is a major dose-limiting side effect of CP. The incidence of this side effect is related to the dosage and can be as high as 75%. Elimination of the side effects of CP can lead to better tolerance of the drug, and a more efficient therapy can be achieved for patients in need of CP treatment. Several studies have demonstrated that oxidative stress and neutrophil infiltration play important roles in CP-induced bladder damage. Glutamine is utilized under clinical conditions for preventing chemotherapeutic drug-induced side effects, based on its ability to attenuate oxidative

stress. The aim of the study is to verify whether glutamine prevents CP-induced oxidative stress and bladder damage using a rat model. Adult male rats were administered 150 mg/kg body weight of CP intraperitoneally. Glutamine pretreated rats were administered 1 g/kg body weight of glutamine orally 2 h before the administration of CP. Vehicle/glutamine-treated rats served as controls. All the rats were killed 16 h after the dose of CP/vehicle. The urinary bladders were removed and used for light microscopic and biochemical studies. The markers of oxidative stress including malondialdehyde content, protein carbonyl content, protein thiol, and myeloperoxidase activity, a marker of neutrophil infiltration, were measured in bladder homogenates. CP treatment induced hemorrhagic cystitis in the rats. Pretreatment with glutamine significantly reduced CP-induced lipid peroxidation ($p < 0.01$), protein oxidation ($p < 0.01$), and increase in myeloperoxidase activity ($p < 0.05$). However, it did not prevent CP-induced bladder damage. The results of the present study show that glutamine pretreatment does not attenuate CP-induced hemorrhagic cystitis, although it prevents CP-induced oxidative stress and neutrophil infiltration significantly. It is therefore necessary to clarify the utility of glutamine as a chemoprotective agent before it is recommended in the market as a nutrient supplement.

PMID: 20661687

Abraham P, Rabi, S.

Protective effect of aminoguanidine against cyclophosphamide-induced oxidative stress and renal damage in rats

Redox Rep; 2011, 16 (1): 8-14

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BACKGROUND: Cyclophosphamide (CP) is widely used in the treatment of tumors and B-cell malignant disease, such as lymphoma, myeloma, chronic lymphocytic leukemia, and Waldenstrom's macroglobulinemia. Renal damage is one of the dose-limiting side effects of CP. Oxidative stress is reported to play important roles in CP-induced renal damage. AIM: To find out whether aminoguanidine (AG) protects against CP-induced oxidative stress and renal

damage. **METHOD:** Renal damage was induced in the rats by administration of a single injection of CP at a dose of 150 mg/kg body weight intraperitoneally. For the AG pretreatment studies, the rats were injected intraperitoneally with AG at a dose of 200 mg/kg body weight 1 hour before administration of CP. The control rats received AG or saline alone. All the rats were killed 16 hours after the administration of CP or saline. The kidneys were used for histological examination by light microscopy and biochemical assays—malondialdehyde, protein carbonyl content, reduced glutathione (GSH), and the activities of antioxidant enzymes including glutathione peroxidase (GPx), glutathione S transferase (GSTase), catalase, glutathione reductase, and myeloperoxidase (MPO), a marker of neutrophil infiltration. **RESULTS:** Pretreatment with AG attenuated CP-induced renal damage histologically. Pretreatment with AG prevented CP-induced lipid peroxidation, protein oxidation, depletion of reduced GSH, and loss of activities of the antioxidant enzymes including GPx, catalase, and GSTase and also MPO activity. **CONCLUSION:** The results of the present study reveal that AG can prevent CP-induced renal damage by inhibiting oxidative stress. Thus, AG may be useful for prevention of the nephrotoxicity of CP.

PMID: 21605493

Boopalan PR, Arumugam S, Livingston A, Mohanty M, Chittaranjan S.

Pulsed electromagnetic field therapy results in healing of full thickness articular cartilage defect

Int Orthop; 2011, 35 (1): 143-8

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This study aimed to determine the efficacy of PEMF (pulsed electromagnetic field) treatment in experimental osteochondral defect healing in a rabbit model. The study was conducted on 12 New Zealand white rabbits. Six rabbits formed the study group and six rabbits the control group. The right knee joints of all 12 animals were exposed and a 3.5-mm diameter osteochondral defect was created in the trochlear groove. The defect was filled with calcium phosphate scaffold. Six animals from the study group were given PEMF of one hour duration once a day for six weeks with set parameters for frequency of 1 Hz, voltage 20

V, sine wave and current +/-30 mA. At six weeks the animals were sacrificed and histological evaluation was done using H&E, Safranin O, Masson's trichrome staining and immunohistochemistry for type 2 collagen. The quality of the repair tissue was graded and compared between groups with the Wakitani histological grading scale and a statistical analysis was done. The total histological score was significantly better in the study group ($p = 0.002$) with regeneration similar to adjacent normal hyaline cartilage. Immunohistochemistry for collagen type II was positive in the study group. PEMF stimulation of osteochondral defects with calcium phosphate scaffold is effective in hyaline cartilage formation. PEMF is a non-invasive and cost effective adjuvant treatment with salvage procedures such as abrasion chondroplasty and subchondral drilling.

PMID: 20340017

Sivalingam N, Pichandi S, Chapla A, Dinakaran A, Jacob M. Zinc protects against indomethacin-induced damage in the rat small intestine

Euro J Pharmacol; 2011, 654 (1): 106-16

Department of Biochemistry, Christian Medical College, Vellore, Tamil Nadu, India.

The clinical utility of nonsteroidal anti-inflammatory drugs (NSAIDs) is often limited by the adverse effects that they produce in the small intestine. Alterations in the composition and functions of the glycocalyx and brush border membranes of the rat small intestine have been shown to occur in response to indomethacin, an NSAID often used in the study of adverse effects of these drugs. The micronutrient, zinc, has been documented to have cytoprotective effects in the gastrointestinal tract. The aim of this study was to evaluate the potential of zinc to reduce indomethacin-induced small intestinal damage. We pre-treated rats with zinc sulphate (50 mg/kg body weight) 2h before administration of indomethacin (20 mg/kg body weight) and sacrificed the rats 1, 12 or 24h after indomethacin. The extent of small intestinal mucosal damage and the content of lipids and sugars in the mucosa were determined. Bacterial counts in the intestinal lumen and the mucosa were ascertained. Activities of matrix metalloproteinases (MMPs) and levels of metallothionein in the mucosa were also measured. Pre-treatment with zinc sulphate was found to reduce

the extent of indomethacin-induced mucosal damage. It also prevented drug-induced changes in the content of lipids and sugars in the mucosa. Drug-induced increases in activities of the MMPs and bacterial counts in the intestine were also attenuated by zinc. Metallothionein levels were significantly higher in animals pre-treated with zinc. We conclude that zinc was effective in protecting against indomethacin-induced small intestinal damage and suggest that it may do so by induction of metallothionein.

PMID: 21185825

REVIEWS:

Kamath MS, George, K.

Letrozole or clomiphene citrate as first line for anovulatory infertility: a debate

Reprod Biol Endocrinol; 2011, 9; 86.

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ABSTRACT: Clomiphene citrate has been traditionally used as the drug of choice in treating women with anovulatory infertility. In the last decade letrozole, an aromatase inhibitor has emerged as alternative ovulation induction agent. Literature confirms that letrozole has a definitive role in anovulatory women who have not responded to the clomiphene therapy. However its role as an alternative to clomiphene as first line therapy continues to be debated. Although it is probable that the overall benefits of letrozole surpass clomiphene citrate, currently available data does not confirm this view. There is need for large well-designed trials.

PMID: 21693034

Livingstone RS, Dinakaran PM.

Radiation safety concerns and diagnostic reference levels for computed tomography scanners in Tamil Nadu
J Med Phys; 2011, 36 (1): 40-5.

Department of Radiology, Christian Medical College, Vellore, India.

Radiation safety in computed tomography (CT) scanners is of concern due its widespread use in the field of radiological imaging. This study intends to

evaluate radiation doses imparted to patients undergoing thorax, abdomen and pelvic CT examinations and formulate regional diagnostic reference levels (DRL) in Tamil Nadu, South India. In-siteCT dose measurement was performed in 127 CT scanners in Tamil Nadu for a period of 2 years as a part of the Atomic Energy Regulatory Board (AERB)-funded project. Out of the 127 CT scanners, 13 were conventional; 53 single-slice helical scanners (SSHS); 44 multislice CT (MSCT) scanners; and 17 refurbished scanners. CT dose index (CTDI) was measured using a 32-cm polymethyl methacrylate (PMMA)-body phantom in each CT scanner. Dose length product (DLP) for different anatomical regions was generated using CTDI values. The regional DRLs for thorax, abdomen and pelvis examinations were 557, 521 and 294 mGy cm, respectively. The mean effective dose was estimated using the DLP values and was found to be 8.04, 6.69 and 4.79 mSv for thorax, abdomen and pelvic CT examinations, respectively. The establishment of DRLs in this study is the first step towards optimization of CT doses in the Indian context.

PMID: 21430858

MISCELLANEOUS:

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Chandy GM.

Ashok Chacko —President, Indian Society of Gastroenterology 2010-2011

Indian J Gastroenterol; 2011, 30 (1): 1-2

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PMID: 21409521

Parmar SK, Rathinam BA.

Introduction of vertical integration and case-based learning in anatomy for undergraduate physical therapy and occupational therapy students

Anat Sci Educ; 2011, 4 (3): 170-3

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The purpose of the present pilot study was to evaluate the benefits of innovative teaching methodologies introduced to final year occupational and physical

therapy students in Christian Medical College in India. Students' satisfactions along the long-term retention of knowledge and clinical application of the respiratory anatomy have been assessed. The final year undergraduate physical therapy and occupational therapy students had respiratory anatomy teaching over two sessions. The teaching involved case-based learning and integrated anatomy lectures (vertical integration) with the Anatomy department. Pretest and immediate and follow-up post-tests were conducted to assess the effectiveness of the innovative methods. A feedback questionnaire was marked to grade case-based learning. The method of integrated and case-based teaching was appreciated and found to be useful in imparting knowledge to the students. Students retained the gained knowledge adequately and the same was inferred by statistically significant improvement in both post-test scores. Vertical integration of anatomy in the final year reinforces their existing knowledge of anatomy. Case-based learning may facilitate the development of effective and clinically sound therapists.

PMID: 21560253

Vyas R, Zachariah A, Swamidasan I, Doris P, Harris I.
Integration of academic learning and service development through guided projects for rural practitioners in India.

Med Teach. 2011;33(7):e401-7.

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BACKGROUND: Christian Medical College Vellore (CMC) aspired through its Fellowship in Secondary Hospital Medicine (FSHM), a 1-year distance-learning program, to integrate academic learning and service development through guided projects for junior doctors working in small rural hospitals. **AIM:** The purpose of this article is to report the evaluation of the effectiveness of the project work in the FSHM program. **METHOD:** Mixed method evaluation was done using focus group discussion with students, written surveys for students and faculty, and telephone interviews with students and medical superintendents. Evidence for validity was gathered for the written survey. Criteria for trustworthiness were applied for the qualitative data analysis. **RESULTS:** The major strengths of the project work identified were that students became aware of

local health problems and how to deal with them, learned to work as a team, and had a sense of doing something useful. Recommendations for improvement were to have more interactions between guides and students. The benefits of projects to the hospital were providing improved clinical care, improved health systems, cost effective care management and benefits to the community. **CONCLUSIONS:** Service learning through guided project work should be incorporated into distance-learning educational programs for junior doctors working in rural hospitals.

PMID: 21696275