



ABSTRACTS

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EDITORIAL

The Christian Medical College, Vellore has its grounding in research from the work started by Dr. Ida Sophia Scudder, its founder. Over the past century, CMC has contributed significantly not only to the provision of health care to the poor and needy but also in generating and advancing knowledge to improve the provision of curative and preventive services to the people we serve directly and to the nation.

Research is the key to excellence in academic medicine, but the conduct of research is frequently misunderstood as requiring both skills and resources not available to the practicing clinician. Defining research as a systemic investigation in order to contribute to generalizable knowledge makes it clear that research can be conducted in any environment and with minimal resources. For example, the process of careful clinical audit is one of the most valuable forms of research, and is capable of contributing both to practice and to policy.

However, the increasing demand for clinical services has led to several problems with faculty unable to find the time and resources to devote to the conduct of any form of research. Compared to several medical colleges in India, CMC faculty engage in more and better quality research, but are we doing the best we can? In general, all groups who prepared for the International Consultation process in January 2009 felt that CMC's performance was sub-optimal and there was significant room for improvement, if infrastructure and systems could be altered to promote research. There was considerable enthusiasm regarding possible participation in research, with junior faculty in departments with heavy clinical commitments, stating that given time, direction and opportunity, they would like to both identify research questions and pursue studies likely to change their practice. In a survey, 90% said that they would like to know more about the research activities in the institution and 83% said that they would like to participate in research.

In order to move forward, we need to identify our vision for CMC as a research institution in 2020. Having defined this vision, we need to work backwards to list specific goals at the institutional, departmental and individual levels. Once goals are defined, working in partnership with the institutional administration, we can develop specific strategies for achieving these goals.

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

BASIC SCIENCE / DIAGNOSTICS

Abraham AM, Babu M, Kavitha S, Jesudason MV, Sridharan G.

A molecular method for typing Herpes simplex virus isolates as an alternative to immunofluorescence methods

Indian J Med Microbiol. 2009 Jan-Mar;27(1):22-6

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BACKGROUND: Typing of Herpes simplex virus (HSV) isolates is required to identify the virus isolated in culture. The methods available for this include antigen detection by immunofluorescence (IF) assays and polymerase chain reaction (PCR). This study was undertaken to standardize a molecular method for typing of HSV and compare it with a commercial IF reagent for typing. **OBJECTIVES:** To compare a molecular method for typing HSV isolates with a monoclonal antibody (MAb) based IF test. **STUDY DESIGN:** This cross-sectional study utilized four reference strains and 42 HSV isolates obtained from patients between September 1998 and September 2004. These were subjected to testing using an MAb-based IF test and a PCR that detects the polymerase (pol) gene of HSV isolates. **RESULTS:** The observed agreement of the MAb IF assay with the pol PCR was 95.7%. Fifty four point eight percent (23/42) of isolates tested by IF typing were found to be HSV-1, 40.5% (17/42) were HSV-2, and two (4.8%) were untypable using the MAb IF assay. The two untypable isolates were found to be HSV-2 using the pol PCR. In addition, the cost per PCR test for typing is estimated to be around Rs 1,300 (USD 30), whereas the cost per MAb IF test is about Rs 1,500 (USD 35) including all overheads (reagents, instruments, personnel time, and consumables). **CONCLUSION:** The pol PCR is a cheaper and more easily reproducible method for typing HSV isolates as compared to the IF test. It could replace the IF-based method for routine typing of HSV isolates as availability of PCR machines (thermal cyclers) is now more widespread than fluorescence microscopes in a country like India.



Abraham P, Rabi S, Kulothungan P

Aminoguanidine, selective nitric oxide synthase inhibitor, ameliorates cyclophosphamide-induced hemorrhagic cystitis by inhibiting protein nitration and PARS activation

Urology. 2009 Jun;73(6):1402-6. Epub 2009 Feb 28

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OBJECTIVES: To elucidate the mechanism by which aminoguanidine (AG) protects against cyclophosphamide (CP)-induced hemorrhagic cystitis. **METHODS:** Hemorrhagic cystitis 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. **RESULTS:** Pretreatment with AG ameliorated CP-induced bladder damage. Pretreatment with AG prevented CP-induced elevation in nitrate levels, nitration of protein tyrosine, poly (adenosine diphosphate ribose) polymerase (PARP) activation, and restored the activity of superoxide dismutase, the peroxynitrite-sensitive enzyme. The results of the present study have confirmed that AG is effective in preventing CP-induced cystitis and have also demonstrated that the protective effect is from its ability to inhibit nitric oxide-induced protein nitration and poly (adenosine diphosphate ribose) polymerase activation. **CONCLUSIONS:** AG can prevent CP-induced urotoxicity and lead to better tolerance of the drug. Thus, a more efficient and comfortable therapy can be achieved for patients in need of CP treatment. AG appears to be a promising drug for the prevention of the urotoxicity of CP.



Abraham P, Rabi S.

Nitrosative stress, protein tyrosine nitration, PARP activation and NAD depletion in the kidneys of rats after single dose of cyclophosphamide

Clin Exp Nephrol. 2009 Aug;13(4):281-7. Epub 2009 Mar 7.

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OBJECTIVES: Cyclophosphamide (CP) and its structural analogue ifosfamide are highly effective cytostatic drugs. While both cyclophosphamide and ifosfamide have severe urotoxic side effects, only ifosfamide is thought to be nephrotoxic. The nephrotoxicity of CP is generally overlooked because of normal plasma creatinine levels. Therefore, little information is available regarding the pathogenic mechanism of renal damage by CP. In the present study, we investigated the role of nitrosative stress in CP-induced renal damage. **METHODS:** The experimental rats received a single i.p. of 150 mg/kg body weight CP in saline and were killed 6 h or 16 h later. The control rats received saline. The kidneys were used for histological and biochemical analysis. Nitrotyrosine and poly (ADP-ribose) polymerase (PARP) were localized immunohistochemically as indicators of protein nitration and DNA damage, respectively. Nitrite, NAD and superoxide dismutase (SOD) activity were assayed in the kidney homogenates. **RESULTS:** The nitrite level in the kidneys of CP-treated rats was elevated twofold. The kidneys of CP-treated rats stained strongly for nitrotyrosine as well as for PARP. Significant decrease in oxidized NAD levels was also observed in the kidneys of CP-treated rats. The activity of the peroxynitrite sensitive enzyme SOD was significantly reduced in the kidneys of CP-treated rats. **CONCLUSION:** The results of the present study reveal that nitrosative stress may play an important role in CP-induced renal damage. It is suggested that protein nitration, PARP activation and NAD +/- depletion may play a critical role in the pathogenesis of cyclophosphamide induced renal damage.



Abraham P, Rabi S, Selvakumar D.

Protective effect of aminoguanidine against oxidative stress and bladder injury in cyclophosphamide-induced hemorrhagic cystitis in rat.

Cell Biochem Funct. 2009 Jan;27(1):56-62.

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Cyclophosphamide (CP) is an antineoplastic agent that is used for the treatment of many neoplastic diseases. Hemorrhagic cystitis (HC) is a major dose limiting side effect of CP. Recent studies show that aminoguanidine, an inhibitor of inducible nitric oxide synthase is a potent antioxidant and prevents changes caused by oxidative stress such as depletion of antioxidant activity and tissue injury. The purpose of the study is to investigate the effect of aminoguanidine on parameters of oxidative stress, antioxidant enzymes and bladder injury caused by CP. Adult male rats were randomly divided into four groups. Control rats were administered saline; the AG control group received 200 mg/kg body wt of aminoguanidine; The CP group received a single injection of CP at the dose of 150 mg/kg body wt intraperitoneally. The CP + AG group received aminoguanidine (200 mg/kg body wt) intraperitoneally 1 h before the administration of CP. The rats were sacrificed 16 h after CP/saline administration. The bladder was used for light microscopic studies and biochemical studies. The markers of oxidative damage including protein carbonyl content, protein thiol, malondialdehyde and conjugated dienes were assayed in the homogenates along with the activities of the antioxidant enzymes, superoxide dismutase, glutathione peroxidase, catalase, and glutathione reductase and glutathione S transferase. In the bladders of CP treated rats edema of lamina propria with epithelial and sub-epithelial hemorrhage was seen. All the parameters of oxidative stress that were studied were significantly elevated in the bladders of CP treated rats. The activities of the antioxidant enzymes were significantly lowered in the bladders of CP treated rats. Aminoguanidine pretreatment prevented CP-induced oxidative stress, decrease in the activities of anti-oxidant enzymes and reduced bladder damage. The results of the present study suggest the antioxidant role for aminoguanidine in CP-induced bladder damage.

Ajjampur SS, Sankaran P, Kannan A, Sathyakumar K, Sarkar R, Gladstone BP, Kang G.
Giardia duodenalis assemblages associated with diarrhea in children in South India identified by PCR-RFLP
Am J Trop Med Hyg. 2009 Jan;80(1):16-9.
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Giardial diarrhea in a birth cohort of 452 children in an urban slum in South India was characterized. Of the 155 episodes that occurred in 99 children, 73% were acute diarrhea. Children with better educated mothers and a toilet at home had lower odds of acquiring giardial diarrhea, whereas low socioeconomic status and drinking municipal water were associated with greater risk. Children with co-infections tended to have a slightly longer duration of diarrhea ($P = 0.061$) and showed significantly more wasting after an episode than children with diarrhea resulting from *Giardia* alone ($P = 0.032$). Among the 99 cases, 50 diarrheal and 51 asymptomatic *Giardia* positive samples were genotyped by polymerase chain reaction restriction fragment length polymorphism (PCR-RFLP) at the triose phosphate isomerase gene. Assemblage B was predominant both in giardial diarrhea (80%) and asymptomatic giardiasis (94%). Children with Assemblage A subgroup-II alone or dual infections with both assemblage A and B had diarrhea more frequently ($P = 0.07$).



Bányai K, Bogdán A, Szücs G, Arista S, De Grazia S, Kang G, Banerjee I, Iturriza-Gómara M, Buonavoglia C, Martella V
Assignment of the group A rotavirus NSP4 gene into genotypes using a hemi-nested multiplex PCR assay: a rapid and reproducible assay for strain surveillance studies
J Med Microbiol. 2009 Mar;58(Pt 3):303-11
Department of Gastrointestinal Sciences, Christian Medical College and Hospital, Vellore, India

The rotavirus non-structural protein NSP4 has been implicated in a number of biological functions during the rotavirus cellular cycle and pathogenesis, and has been addressed as a target for vaccine development. The NSP4 gene has been classified into six genotypes (A–F). A semi-nested triplex PCR was developed for genotyping the major human NSP4 genotypes (A–C), which are common in human rotavirus strains but are also shared among most mammalian rotavirus strains. A total of 192 previously characterized human strains representing numerous G and P type specificities (such as G1P[8], G1P[4], G2P[4], G3P[3], G3P[8], G3P[9], G4P[6], G4P[8], G6P[4], G6P[9], G6P[14], G8P[10], G8P[14], G9P[8], G9P[11], G10P[11], G12P[6] and G12P[8]) were tested for NSP4 specificity by the collaborating laboratories. An additional 35 animal strains, including the reference laboratory strains SA11 (simian, G3P[2]), NCDV (bovine, G6P[1]), K9 and CU-1 (canine, G3P[3]), together with 31 field isolates (canine, G3P[3]; feline, G3P[9]; porcine, G2P[23], G3P[6], G4P[6], G5P[6], G5P[7], G5P[26], G5P[27], G9P[6] and G9P[7]) were also successfully NSP4-typed. Four human G3P[9] strains and one feline G3P[9] strain were found to possess an NSP4 A genotype, instead of NSP4 C, suggesting a reassortment event between heterologous strains. Routine NSP4 genotyping may help to determine the genomic constellation of rotaviruses of man and livestock, and identify interspecies transmission of heterologous strains.



Chacko G, Chacko AG, Lombardero M, Mani S, Seshadri MS, Kovacs K, Scheithauer BW.
Clinicopathologic correlates of giant pituitary adenomas
J Clin Neurosci. 2009 May;16(5):660-5. Epub 2009 Mar 12
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Giant adenomas comprise a clinical/therapeutic subset of pituitary adenomas that pose a surgical challenge. The study population consisted of 28 patients who had giant pituitary adenomas, which are defined as tumors with a diameter greater than 5cm. Clinically, five tumors (18%) were endocrinologically functional and 23



(82%) were not. During surgery, one tumor was radically excised, four were subtotally excised, 12 were partially excised, and 11 were biopsied. All of the tumors showed typical histological features of pituitary adenoma. Of the 23 clinically non-functional adenomas, 18 were gonadotrophic tumors, four were null cell adenomas and one was a silent corticotroph adenoma. The MIB-1 labeling indices ranged from 0.1% to 2.0%. The mean topoisomerase labeling index was 0.75%. Microvessel density ranged from 0.42% to 5.55%, and there was moderately intense immunostaining for vascular endothelial growth factor. The present study found giant adenomas to be invasive but slow growing, histologically benign and often gonadotrophic in subtype.



Chandy S, Boorugu H, Chrispal A, Thomas K, Abraham P, Sridharan G.

Hantavirus infection: A case report from India

Indian J Med Microbiol. 2009 Jul-Sep;27(3):267-70.

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The clinical presentation of hantavirus infections in India is unclear. We report here a case of hantavirus infection in a 46 year old quarry worker presenting with fever, abdominal pain, jaundice, thrombocytopenia and renal dysfunction. Seroconversion and rising anti-hantavirus IgG titers were taken as evidence of hantavirus infection. Clinicians should consider hantavirus infections in the differential diagnosis of acute febrile illness along with scrub typhus, leptospirosis and dengue.



Chandy S, Yoshimatsu K, Boorugu HK, Chrispal A, Thomas K, Peedicayil A, Abraham P, Arikawa J, Sridharan G.

Acute febrile illness caused by hantavirus: serological and molecular evidence from India

Trans R Soc Trop Med Hyg. 2009 Apr;103(4):407-12. Epub 2009 Feb 23

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Study of hantavirus infections in India is in its early stages. As early symptoms of hantavirus disease can be non-specific and the diagnosis confirmed only by laboratory testing, use of appropriate diagnostic tools is important. To improve the diagnosis of hantavirus infections in India, commercial ELISA systems followed by indirect immunofluorescence assays were used to detect anti-hantavirus IgM and IgG in samples from patients with acute febrile illness. Of 347 patients tested, 5.2% showed serological evidence of hantavirus infection. Sequences obtained from patients showing molecular evidence of hantavirus infection were related to Hantaan virus. In the absence of mu-capture ELISA, we recommend the use of combination testing systems in areas non-endemic for hantavirus infections. In India there is an increased risk of rodent-borne infections and the differential diagnosis of undifferentiated febrile illness should include hantavirus infection.



Daley P, Michael JS, S K, Latha A, Mathai D, John KR, Pai M.

A pilot study of short-duration sputum pretreatment procedures for optimizing smear microscopy for tuberculosis

PLoS One. 2009 May 20;4(5):e5626

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

BACKGROUND: Direct sputum smear microscopy for tuberculosis (TB) lacks sensitivity for the detection of acid fast bacilli. Sputum pretreatment procedures may enhance sensitivity. We did a pilot study to compare the



diagnostic accuracy and incremental yield of two short-duration (<1 hour) sputum pretreatment procedures to optimize direct smears among patients with suspected TB at a referral hospital in India. **METHODOLOGY/FINDINGS:** Blinded laboratory comparison of bleach and universal sediment processing (USP) pretreated centrifuged auramine smears to direct Ziehl-Neelsen (ZN) and direct auramine smears and to solid (Lowenstein-Jensen (LJ)) and liquid (BACTEC 460) culture. 178 pulmonary and extrapulmonary TB suspects were prospectively recruited during a one year period. Thirty six (20.2%) were positive by either solid or liquid culture. Direct ZN smear detected 22 of 36 cases and direct auramine smears detected 26 of 36 cases. Bleach and USP centrifugation detected 24 cases each, providing no incremental yield beyond direct smears. When compared to combined culture, pretreated smears were not more sensitive than direct smears (66.6% vs 61.1 (ZN) or 72.2 (auramine)), and were not more specific (92.3% vs 93.0 (ZN) or 97.2 (auramine). **CONCLUSIONS/SIGNIFICANCE:** Short duration sputum pretreatment with bleach and USP centrifugation did not increase yield as compared to direct sputum smears. Further work is needed to confirm this in a larger study and also determine if longer duration pre-treatment might be effective in optimizing smear microscopy for TB.



Daniel HD, Fletcher JG, Chandy GM, Abraham P.

Quantitation of hepatitis B virus DNA in plasma using a sensitive cost-effective “in-house” real-time PCR assay

Indian J Med Microbiol. 2009 Apr-Jun;27(2):111-5

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

BACKGROUND: Sensitive nucleic acid testing for the detection and accurate quantitation of hepatitis B virus (HBV) is necessary to reduce transmission through blood and blood products and for monitoring patients on antiviral therapy. The aim of this study is to standardize an “in-house” real-time HBV polymerase chain reaction (PCR) for accurate quantitation and screening of HBV. **MATERIALS AND METHODS:** The “in-house” real-time assay was compared with a commercial assay using 30 chronically infected individuals and 70 blood donors who are negative for hepatitis B surface antigen, hepatitis C virus (HCV) antibody and human immunodeficiency virus (HIV) antibody. Further, 30 HBV-genotyped samples were tested to evaluate the “in-house” assay’s capacity to detect genotypes prevalent among individuals attending this tertiary care hospital. **RESULTS:** The lower limit of detection of this “in-house” HBV real-time PCR was assessed against the WHO international standard and found to be 50 IU/mL. The interassay and intra-assay coefficient of variation (CV) of this “in-house” assay ranged from 1.4% to 9.4% and 0.0% to 2.3%, respectively. Virus loads as estimated with this “in-house” HBV real-time assay correlated well with the commercial artus HBV RG PCR assay ($r = 0.95$, $P < 0.0001$). **CONCLUSION:** This assay can be used for the detection and accurate quantitation of HBV viral loads in plasma samples. This assay can be employed for the screening of blood donations and can potentially be adapted to a multiplex format for simultaneous detection of HBV, HIV and HCV to reduce the cost of testing in blood banks.



Dutta AK, Chacko A, Avinash B.

Suboptimal Performance of IgG Anti-tissue Transglutaminase in the Diagnosis of Celiac Disease in a Tropical Country.

Dig Dis Sci. 2009 Mar 31. [Epub ahead of print]

Department of Gastrointestinal Sciences, Christian Medical College, Vellore, 632 004, Tamil Nadu, India.

Serological tests using human IgA-anti-tTG have been reported to have high sensitivity and specificity in diagnosis of celiac disease. There is a paucity of data on the use of human IgG-anti-tTG in diagnosis of celiac disease. Ninety-two patients with clinical suspicion of celiac disease who underwent duodenal mucosal biopsy and celiac serology using human IgG-anti-tTG were included in this retrospective study. Diagnostic accuracy

human recombinant IgG-anti-tTG serological test for celiac disease was evaluated. Indications for celiac serological testing were diarrhea (92.3%), hypoalbuminemia (39.1%), and anemia (35.9%). Eighteen patients were diagnosed with having celiac disease and 14 (77.8%) of them were IgG-anti-tTG positive. Of the remaining 74 patients, eight (10.8%) were false-positive for IgG-anti-tTG. Sensitivity, specificity, PPV, NPV, and diagnostic accuracy of IgG-anti-tTG in celiac disease were 77.8, 89.1, 63.6, 94.2, and 87%, respectively. Human IgG-anti-tTG alone does not perform well as a diagnostic tool for celiac disease. The utility of anti-endomysial antibodies in a similar clinical setting needs to be evaluated.



Jothikumar N, Kang G and V.R. Hill

Broadly reactive TaqMan® assay for real-time RT-PCR detection of rotavirus in clinical and environmental samples.

Journal of Virological Methods 2009, 155(2): 126-131

Department of Gastrointestinal Sciences, Christian Medical College, Vellore, India

Rotaviruses are enteric pathogens responsible for a significant burden of disease, especially in children, through person-to-person transmission and exposure to contaminated food and water. In the present study, a TaqMan® probe-based real-time reverse transcriptase (RT) polymerase chain reaction (PCR) assay was developed and validated for sensitive and specific detection and quantification of rotavirus for the routine screening of clinical and environmental samples. The assay primers and probes were designed to target the non-structural protein region 3 (NSP3) of rotavirus. The rotavirus real-time RT-PCR assay was found to be specific to rotavirus, but broadly reactive to rotavirus genogroups 1–4, 9, 10 and 12. Specificity testing did not identify any cross-reactivity of the assay with a panel of 36 non-rotavirus enteric virus specimens. The sensitivity of the assay was determined using quantified rotavirus stocks and a plasmid DNA stock. Estimated detection limits in reagent-grade water were five genome equivalent copies (GEC) per reaction and two to four rotavirus particles per reaction. The sensitivity of the assay for detecting rotaviruses in environmental water samples was found to be six virus particles per reaction. The rotavirus real-time RT-PCR assay was effective in detecting rotavirus in all 79 stool specimens obtained from a hospital in India. The results of this study demonstrate that the real-time RT-PCR assay for rotavirus.



Kandathil AJ, Joseph AP, Kannangai R, Srinivasan N, Abraham OC, Pulimood SA, Sridharan G.

Structural basis of drug resistance by genetic variants of HIV type 1 clade c protease from India

AIDS Res Hum Retroviruses. 2009 May;25(5):511-9

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

Using computer modeling of three-dimensional structures and structural information available on the crystal structures of HIV-1 protease, we investigated the structural effects of mutations, in treatment-naive and treatment-exposed individuals from India and postulated mechanisms of resistance in clade C variants. A large number of models (14) have been generated by computational mutation of the available crystal structures of drug bound proteases. Localized energy minimization was carried out in and around the sites of mutation in order to optimize the geometry of interactions present. Most of the mutations result in structural differences at the flap that favors the semiopen state of the enzyme. Some of the mutations were also found to confer resistance by affecting the geometry of the active site. The E35D mutation affects the flap structure in clade B strains and E35N and E35K mutation, seen in our modeled strains, have a more profound effect. Common polymorphisms at positions 36 and 63 in clade C also affected flap structure. Apart from a few other residues Gln-58, Asn-83, Asn-88, and Gln-92 and their interactions are important for the transition from the closed to the open state. Development of protease inhibitors by structure-based design requires investigation of mechanisms operative for clade C to improve the efficacy of therapy.

Kandathil AJ, Kannangai R, Abraham OC, Pulimood SA, Jensen MA, Sridharan G.
HIV-1 with predicted CXCR4 genotype identified in clade C from India
Mol Diagn Ther. 2009;13(1): 19-24
Department of Clinical Virology, Christian Medical College, Vellore, India.

BACKGROUND AND OBJECTIVE: HIV-1 uses co-receptors CCR5 and CXCR4 in addition to CD4 for viral entry into cells. CCR5 is used in the early stages of HIV-1 infection, but viruses that utilize CXCR4 for viral entry emerge in the later stages. This is not common among clade C strains, with previous data from India showing the absence of the emergence of CXCR4-using strains. Sequence analysis has demonstrated that the V3 loop plays a very important role in determining the syncytium-inducing (SI) phenotype. The V3 region of the SI variants were observed to have positively charged amino acids at positions 11 and/or 25 and also a overall higher charge. This study looked at co-receptor usage among HIV-1 strains in India from individuals who were antiretroviral therapy (ART) naive and those not responding to ART. **METHODS:** Amplification and sequencing of the HIV-1 env gp120 V3 region was done on 40 ART-naive individuals, who were selected for the study based on their CD4 counts, and eight patients who had not responded to ART. The sequences were submitted to Geno2Pheno and Web PSSM. The pol gene sequences of these strains were submitted to the REGA HIV-1 subtyping tool. **RESULTS:** Forty-seven strains were identified as clade C and one strain as clade A1. Geno2Pheno identified three CXCR4-using strains, and the Web PSSM clade C matrix identified two. **CONCLUSION:** We report, for the first time, CXCR4-using strains among HIV-1 clade C strains circulating in India.



Kandathil AJ, Kannangai R, Abraham OC, Pulimood SA, Jensen MA, Sridharan G.
A comparison of interpretation by three different HIV type 1 genotypic drug resistance algorithms using sequences from non-clade B HIV type 1 strains
AIDS Res Hum Retroviruses. 2009 Mar;25(3):315-8
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The advent of affordable ART has benefited HIV-infected individuals. Prospective studies have shown that the availability of drug resistance reports for infected individuals has allowed more effective regimens to be prescribed as compared to a control group whose physicians had no access to drug resistance reports. There is a paucity of information on the performance of genotypic algorithms on non-clade B HIV-1 strains, especially clade C. In this study the results obtained on submission of HIV-1 RT and PR sequences of non-clade B strains to the Stanford University HIV drug resistance database (SHDB) were compared to the results obtained from Geno2Pheno (G2P) and DR_Seqan (DS). For the study, we took samples from 93 treatment-naive individuals and 21 samples from 19 infected individuals showing detectable viral load while on ART. There were discrepancies in the clade identification results obtained from the SHDB and G2P databases. This feature was not available in DS. The mean observed concordance between SHDB and G2P was 85.6% while between SHDB and DS it was 37%. When the level of concordance was determined based on exposure to ART, the G2P was found to have a better level of concordance (76.8%) to SHDB as compared to SHDB versus DS (36%). We do not have phenotypic data for the strains included in this study and hence we are not in a position to assign a particular algorithm as being superior. These results also show a possible need for a subtype-specific algorithm for interpretation of HIV-1 genotypic drug resistance.



Kolli VK, Abraham P, Isaac B, Selvakumar D.
Neutrophil infiltration and oxidative stress may play a critical role in methotrexate-induced renal damage
Chemotherapy. 2009;55(2):83-90. Epub 2009 Jan 15
Department of Biochemistry, Christian Medical College, Vellore, India.

BACKGROUND: Nephrotoxicity is one of the adverse side effects of methotrexate (MTX) chemotherapy. The mechanism of renotoxicity of MTX is not fully understood. It is essential to understand the mechanism of nephrotoxicity of MTX in order to diminish the side effects and hence maximize the benefits of chemotherapy. **OBJECTIVES:** The aim of the study was to verify whether oxidative stress and neutrophil infiltration play a role in MTX-induced renal damage using a rat model. **METHODS:** Adult male rats were administered MTX at the dose of 7 mg/kg body weight intraperitoneally for 3 consecutive days and sacrificed 12 or 24 h after the last dose. Vehicle-treated rats served as controls. The kidneys were removed and used for light microscopic and biochemical studies. Myeloperoxidase activity, a marker of neutrophil infiltration was measured in kidney homogenates along with the markers of oxidative damage including protein carbonyl content, protein thiol and malondialdehyde. The activities of the antioxidant enzymes, namely glutathione peroxidase, glutathione S-transferase, superoxide dismutase and catalase, were also assayed. **RESULTS:** MTX treatment induced damage to the glomeruli and tubules. Plasma creatinine levels in the MTX-treated rats were significantly elevated compared with controls. A significant increase in myeloperoxidase activity ($p < 0.05$) was observed in the kidneys of MTX-treated rats. Protein carbonyl content and malondialdehyde, sensitive and reliable markers of oxidative damage to proteins and lipids, respectively, were significantly elevated ($p < 0.01$) in the kidneys of MTX-treated rats compared with controls. The activities of the antioxidant enzymes, namely, superoxide dismutase and glutathione peroxidase, were significantly elevated ($p < 0.01$ and $p < 0.05$, respectively) in kidneys of rats following MTX treatment. **CONCLUSION:** The results of the present study provide evidence for the role of neutrophil infiltration and oxidative stress in MTX-induced renal damage. Administration of inhibitors of myeloperoxidase or scavenging hypochlorous acid, the product of myeloperoxidase, by supplementation with antioxidants as an adjuvant therapy may be promising in alleviating the renal side effect of MTX.



Nandakumar NS, Pugazhendhi S, Madhu Mohan K, Jayakanthan K, Ramakrishna BS.
Effect of *Vibrio cholerae* on chemokine gene expression in HT29 cells and its modulation by *Lactobacillus* GG

Scand J Immunol. 2009 Mar;69(3):181-7

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

Epithelial cells participate in the innate immune response to pathogenic bacteria by elaborating chemokines. This study examined the effect of *Vibrio cholerae* and *Lactobacillus rhamnosus* GG on inflammatory chemokine gene expression in the HT29 human intestinal epithelial cell line. HT29 cells were exposed to *V. cholerae* 0139, *Lactobacillus* or both for 2 h and cultured further thereafter for 4 h. RNA was extracted from the cells and expression of genes for chemokines and related molecules was quantitated by real time PCR using a pathway-focused PCR array. TLR4 was silenced using shRNA and output of interleukin-8 (IL-8) into the media quantitated with and without *V. cholerae* exposure. NF κ B and p38 MAP kinase activation were determined by immunoblotting for IkappaB α and phosphorylated p38. *Vibrio cholerae* significantly upregulated gene expression for the neutrophil chemoattractant CXCL chemokines, IL-8, CXCL and CXCL in HT29 cells, while downregulating the expression of macrophage-attracting C-C chemokines. TLR4 silencing did not reduce IL-8 output from HT29 cells in response to *V. cholerae*. IkappaB α degradation was noted in the HT29 cells soon after exposure to *V. cholerae* and this recovered over time after removal of bacteria. p38 MAP kinase activation was not noted. *Vibrio cholerae* upregulated the expression of neutrophil attractant chemokines, most prominently IL-8, in HT29 cells, but downregulated macrophage-attracting chemokines. Probiotic lactobacilli modulated the IL-8, but not the other chemokine gene changes, in response to *V. cholerae*.



Natarajan SK, Amirtharaj GJ, Ramachandran A, Pulimood AB, Balasubramanian KA.
Retinoid metabolism in the small intestine during development of liver cirrhosis

J Gastroenterol Hepatol. 2009 May;24(5):821-9. Epub 2009 Feb 15

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College, Vellore, India.

Abstract Background and Aims: Retinoids are important mediators of cellular differentiation and proliferation in various epithelia of the body including the small intestine. Though alterations in intestinal epithelial cell proliferation have been noted in liver cirrhosis, mechanisms involved in the process are not well understood. This study examined the levels of various retinoids and retinoid-metabolizing enzymes in the small intestine during development of liver cirrhosis. **Methods:** Four groups of animals were used (control, phenobarbitone control, thioacetamide and carbon tetrachloride treatment). Twice-weekly intragastric or i.p. administration of carbon tetrachloride or thioacetamide, respectively, produced liver cirrhosis after 3 months, which was confirmed through histology and serum markers. Retinoid levels were measured by high-performance liquid chromatography. **Results:** A decrease in the levels of retinal, retinoic acid and retinol was evident in the intestine by 3 months, when cirrhosis was evident histologically, and these remained low until 6 months. A decrease in the activities of retinaldehyde oxidase, retinaldehyde reductase and retinol dehydrogenase was also seen in intestine from cirrhotic rats. **Conclusion:** These results suggest that altered retinoid metabolism in the intestine of cirrhotic rats might have an influence on changes in intestinal epithelial cell differentiation, seen in liver cirrhosis.



O'Connor RM, Burns PB, Ha-Ngoc T, Scarpato K, Khan W, Kang G, Ward H
Polymorphic Mucin Antigens CpMuc4 and CpMuc5 Are Integral to Cryptosporidium parvum Infection In Vitro

Eukaryot Cell. 2009 Apr;8(4):461-9. Epub 2009 Jan 23

Division of Geographic Medicine and Infectious Diseases, Tufts Medical Center, Boston, Massachusetts,1 International Center for Diarrheal Disease Research, Dhaka, Bangladesh,2 Department of Gastrointestinal Sciences, Christian Medical College, Vellore, India

Cryptosporidium, a waterborne enteric parasite, is a frequent cause of diarrheal disease outbreaks worldwide. Thus far, the few antigens shown to be important for attachment to and invasion of the host cell by Cryptosporidium are all mucin-like glycoproteins. In order to investigate other antigens that could be important for Cryptosporidium host-parasite interactions, the Cryptosporidium genome databases were mined for other mucin-like genes. A single locus of seven small mucin sequences was identified on chromosome 2 (CpMuc1 to -7). Reverse transcriptase PCR analysis demonstrated that all seven CpMucs were expressed throughout intracellular development. CpMuc4 and CpMuc5 were selected for further investigation because of the significant sequence divergence between Cryptosporidium parvum and C. hominis alleles. Rabbit anti-CpMuc5 and -CpMuc4 antibodies identified several polypeptides in C. parvum lysates, suggestive of proteolytic processing of the mucins. All polypeptides were larger than the predicted molecular weight, which is suggestive of post-translational processing, most likely O-glycosylation. In immunofluorescence assays, both anti-CpMuc4 and -CpMuc5 antibodies reacted with the apical region of sporozoites and revealed surface-exposed epitopes. The antigens were not shed during excystation but did partition into the aqueous phase of Triton X-114 extractions. Consistent with a role in attachment and invasion, CpMuc4 and CpMuc5 could be detected binding to fixed Caco-2A cells, and anti-CpMuc4 peptide antibodies inhibited Cryptosporidium infection in vitro. Sequencing of CpMuc4 and CpMuc5 from C. hominis clinical isolates identified several polymorphic alleles. The data suggest that these antigens are integral for Cryptosporidium infection in vitro and may be potential vaccine candidates.



Peedicayil A, Sathish N, Gnanamony M, John S, Viswanathan FR, Naseema PS, Abraham P.
Can recurrence of cervical cancer be predicted by human papillomavirus DNA in nodes or plasma?
J Low Genit Tract Dis. 2009 Apr;13(2):102-6.



OBJECTIVE: To determine if human papillomavirus (HPV) DNA in pelvic lymph nodes or plasma of women with early-stage cervical cancer is a marker for recurrence. **MATERIALS AND METHODS:** Twenty-eight women undergoing radical hysterectomy for cervical cancer stage IB had HPV DNA testing in cervical tissue, plasma, and the largest lymph nodes. Human papillomavirus genotyping was done by restriction fragment length polymorphism/line blot assay. Human papillomavirus quantitation was performed with specific primers for types 16 and 18. Women were followed up to determine recurrence of disease. **RESULTS:** Human papillomavirus DNA was detected in cervical tumor tissue from all the women. Twenty-two women had genotype 16, 5 women had HPV18, and 1 had type 31. Human papillomavirus viral load in cervical biopsies significantly correlated with the viral loads in the lymph nodes ($r = 0.97$; $p = 0$). Nine women had nodal metastasis, but only 3 of them had HPV DNA in lymph nodes. Recurrence was seen in 4 women, of whom 3 had tumor in the lymph nodes at initial surgery and none had HPV. **CONCLUSIONS:** Human papillomavirus DNA can be detected in lymph nodes even when they are not obviously involved by tumor metastasis. This study did not show plasma or lymph node HPV DNA to be a prognostic marker.



Ramani S, Iturriza-Gomara M, Jana AK, Kuruvilla KA, Gray JJ, Brown DW, Kang G.

Whole genome characterization of reassortant G10P[11] strain (N155) from a neonate with symptomatic rotavirus infection: identification of genes of human and animal rotavirus origin

J Clin Virol. 2009 Jul;45(3):237-44. Epub 2009 Jun 7

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

BACKGROUND: Rotavirus G10P[11] strains have long been associated with asymptomatic neonatal infections in some parts of India. We have previously reported G10P[11] strains associated with both asymptomatic infections and severe gastrointestinal disease in neonates from Vellore in southern India, with >90% partial nucleotide and amino acid identity to the VP4, VP6, VP7 and NSP4 genes of the exclusively asymptomatic G10P[11] strain I321. **OBJECTIVES:** In this study, the whole genome of a G10P[11] isolate (N155) from a neonate with severe gastrointestinal disease was characterized to determine whether there were significant differences in its genetic makeup in comparison to G10P[11] strain I321 and to establish the origin of the G10P[11] strains in Vellore. **STUDY DESIGN:** PCR amplification and complete genome sequencing was carried out for all 11 gene segments of symptomatic G10P[11] rotavirus isolate N155. Nucleotide and amino acid sequence similarity with I321, other human and bovine strains for each gene segment were determined. The origin of each gene was determined based on the degree of identity to bovine or human rotavirus strains. **RESULTS:** N155 was found to be a reassortant between human and bovine rotaviruses. With the exception of NSP2, gene sequences of strain N155 showed >90% identity to published sequences of I321. Gene segments encoding NSP1, 2 and 3 were of human rotavirus origin for both strains; however, phylogenetic analysis of NSP2 sequences indicated that the human parental strain that led to the origin of these bovine-human reassortant strains was different. There were no significant differences between NSP2 sequences of strains from symptomatic and asymptomatic neonates in the same setting. **CONCLUSIONS:** The study shows that the difference in clinical presentations in neonates may not be due to the limited variability in the genome sequence of G10P[11] strains and that G10P[11] strains in different parts of India could have evolved through reassortment of different parental strains.



Rehman TA, Mammen T, Thaj J, Cherian RS.

Is pneumorrhachis a poor prognostic sign in acute gangrenous abdominal emergencies?

Emerg Radiol. 2009 Mar;16(2):151-4.



Pneumorrhachis (air in the spinal canal) is an uncommon radiological finding. Its detection in gangrenous abdominal emergencies is rarer with uncertain prognostic significance. We illustrate the computed tomography features and assess the patient outcomes in two cases of pneumorrhachis identified in gangrenous pathologies of the abdomen (emphysematous pyelonephritis and bowel gangrene). Patient outcome was poor in the current and previously reported cases. Pneumorrhachis could be an additional imaging sign of poor prognosis in acute gangrenous abdominal emergencies.



Sivalingam N, Basivireddy J, Pulimood AB, Balasubramanian KA, Jacob M.
Activation of phospholipase A2 is involved in indomethacin-induced damage in Caco-2 cells
Toxicol In Vitro. 2009 Aug;23(5):887-96. Epub 2009 May 24
Department of Biochemistry, Christian Medical College, Vellore, Tamil Nadu, India.

Nonsteroidal anti-inflammatory drugs (NSAIDs), widely used in clinical practice, cause adverse effects in the gastrointestinal tract. These effects have been attributed to mechanisms such as drug-induced cyclooxygenase inhibition, oxidative stress, mitochondrial dysfunction and changes in cell membrane lipids. Our previous study showed that indomethacin (an NSAID commonly used in toxicity studies) caused activation of cytosolic phospholipase A(2) (cPLA(2)) in the rat small intestine. We hypothesized that activation of cPLA(2) is an important event in the pathogenesis of indomethacin-induced damage in enterocytes. To test this, we incubated enterocyte-like Caco-2 cells with indomethacin, with and without pretreatment with methyl arachidonyl fluorophosphonate (MAFP), an inhibitor of cPLA(2). Cells treated with indomethacin showed decreased viability and evidence of oxidative stress and morphological cell damage. Phospholipids were degraded in these cells, with increases in the levels of lysophospholipids and arachidonic acid. There was no evidence of apoptosis in the cells in response to the drug. Pretreatment of the cells with MAFP attenuated the drug-induced effects seen. This shows that activation of phospholipase A(2) appears to be an important event in the pathogenesis of indomethacin-induced damage in Caco-2 cells. To our knowledge, this is the first report that implicates the involvement of this enzyme in NSAID-induced enteropathy.



Sowmyanarayanan TV, Natarajan SK, Ramachandran A, Sarkar R, Moses PD, Simon A, Agarwal I, Christopher S, Kang G.
Nitric oxide production in acute gastroenteritis in Indian children
Trans R Soc Trop Med Hyg. 2009 Aug;103(8):849-51. Epub 2009 Jun 23.
Department of Gastrointestinal Sciences, Christian Medical College, Vellore 632004, Tamil Nadu, India.

This study compared nitric oxide (NO) levels in 110 children with, and 110 children without, infectious gastroenteritis. Post-infection intestinal function was assessed in a subset. At least one pathogen was identified in 47.2% of cases. The most common diarrhoeal pathogens were rotavirus (22.7%) and norovirus genogroup II (11.8%). The levels of NO measured by median urinary nitrite:creatinine ratio were significantly higher in children with diarrhoea [23.6; interquartile range (IQR) 12.3-46.7] than without diarrhoea (7.8; IQR 4.1-13.2), $P < 0.001$. The ratio was not significantly different between diarrhoeal cases with and without pathogens ($P = 0.148$). Six of twelve children tested had intestinal dysfunction.



Varghese J, Faith M, Jacob M.

Zinc prevents indomethacin-induced renal damage in rats by ameliorating oxidative stress and mitochondrial dysfunction.

Eur J Pharmacol. 2009 Jul 1;614(1-3):114-21. Epub 2009 May 13

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The clinical utility of non-steroidal anti-inflammatory drugs (NSAIDs) is limited by their gastrointestinal and renal toxicities. Indomethacin (an NSAID commonly used in toxicity studies) has been shown to induce significant oxidative stress and mitochondrial dysfunction in the rat kidney. The current study was designed to assess the potential of zinc, a known antioxidant, to protect the kidney against these drug-induced effects. Male Wistar rats were pre-treated with zinc sulphate (50 mg/kg) and dosed with indomethacin (20 mg/kg) by oral gavage. Rats were sacrificed 24 h after the dose of indomethacin. Parameters of oxidative stress, mitochondrial function and lipid content of the mitochondrial membranes were measured in the kidneys of these animals. It was found that zinc significantly attenuated indomethacin-induced oxidative stress, mitochondrial dysfunction and changes in the lipids in mitochondrial membranes in the kidney. The content of metallothionein, a cysteine-rich zinc-binding protein, was also determined in the tissue. There was no significant induction of metallothionein in the kidney in zinc-treated animals. Estimation of serum creatinine showed that zinc seemed to hasten functional recovery of the kidney following indomethacin administration. We conclude that pretreatment with zinc is effective in protecting against indomethacin-induced changes in the rat kidney. This protective effect does not appear to be mediated by metallothionein.



Warier A, Gunawathi S, Venkatesh S, John KR, Bose A.

T-Cell Assay as a Diagnostic Tool for Tuberculosis

Indian Pediatr. 2009 Apr 1. pii: S097475590700601-2. [Epub ahead of print]

Department of Child Health, Low Cost Effective Care Unit and Department of Community Health, Christian Medical College, Vellore, India. Correspondence to: Dr Anuradha Bose, Department of Community Health, Christian Medical College, Vellore 632 002, Tamilnadu, India. abose@cmcvellore.ac.in.

This study aimed to estimate the specificity and sensitivity of a whole blood IFN- γ assay (ELISPOT) test for diagnosis in childhood tuberculosis. 96 patients, less than 18 years of age, diagnosed and commenced on anti-tubercular therapy were enrolled and tested. 47 age and sex matched controls were also tested. 23 tests were deemed invalid and analysis done on the remainder. The sensitivity was 53.3% in confirmed cases and less in other groups. The specificity was high at 97.9%. This test can be a useful aid in the diagnosis of tuberculosis.



ABSTRACTS NOT AVAILABLE

Banda K, Kang G, Varki A.

Sialidase sensitivity of rotaviruses revisited

Nat Chem Biol. 2009 Feb;5(2):71-2.

Comment on: Nat Chem Biol. 2009 Feb;5(2):91-3.

Keshava S, Gibikote S, Mohanta A, Doria AS.

Refinement of a sonographic protocol for assessment of haemophilic arthropathy

Haemophilia. 2009 Sep;15(5):1168-71. Epub 2009 Jun 1

Comment on Haemophilia. 2007 May;13(3):293-304.

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



Prakash JA, Reller ME, Barat N, Dumler JS.

Assessment of a quantitative multiplex 5' nuclease real-time PCR for spotted fever and typhus group rickettsioses and *Orientia tsutsugamushi*

Clin Microbiol Infect. 2009 Apr 23. [Epub ahead of print]

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

EPIDEMIOLOGY/PUBLIC HEALTH

George K, Prasad J, Singh D, Minz S, Albert DS, Muliyl J, Joseph KS, Jayaraman J, Kramer MS.

Perinatal outcomes in a South Asian setting with high rates of low birth weight

BMC Pregnancy Childbirth. 2009 Feb 9;9:5.

Department of Community Health, Christian Medical College, Vellore, India. kuryan@cmcvellore.ac.in

BACKGROUND: It is unclear whether the high rates of low birth weight in South Asia are due to poor fetal growth or short pregnancy duration. Also, it is not known whether the traditional focus on preventing low birth weight has been successful. We addressed these and related issues by studying births in Kaniyambadi, South India, with births from Nova Scotia, Canada serving as a reference. **METHODS:** Population-based data for 1986 to 2005 were obtained from the birth database of the Community Health and Development program in Kaniyambadi and from the Nova Scotia Atlee Perinatal Database. Menstrual dates were used to obtain comparable information on gestational age. Small-for-gestational age (SGA) live births were identified using both a recent Canadian and an older Indian fetal growth standard. **RESULTS:** The low birth weight and preterm birth rates were 17.0% versus 5.5% and 12.3% versus 6.9% in Kaniyambadi and Nova Scotia, respectively. SGA rates were 46.9% in Kaniyambadi and 7.5% in Nova Scotia when the Canadian fetal growth standard was used to define SGA and 6.7% in Kaniyambadi and < 1% in Nova Scotia when the Indian standard was used. In Kaniyambadi, low birth weight, preterm birth and perinatal mortality rates did not decrease between 1990 and 2005. SGA rates in Kaniyambadi declined significantly when SGA was based on the Indian standard but not when it was based on the Canadian standard. Maternal mortality rates fell by 85% (95% confidence interval 57% to 95%) in Kaniyambadi between 1986-90 and 2001-05. Perinatal mortality rates were 11.7 and 2.6 per 1,000 total births and cesarean delivery rates were 6.0% and 20.9% among live births \geq 2,500 g in Kaniyambadi and Nova Scotia, respectively. **CONCLUSION:** High rates of fetal growth restriction and relatively high rates of preterm birth are responsible for the high rates of low birth weight in South Asia. Increased emphasis is required on health services that address the morbidity and mortality in all birth weight categories.



Gopal S, Sarkar R, Banda K, Govindarajan J, Harijan BB, Jeyakumar MB, Mitta P, Sadanala ME, Selwyn T, Suresh CR, Thomas VA, Devadason P, Kumar R, Selvapandian D, Kang G, Balraj V.

Study of water supply & sanitation practices in India using geographic information systems: some design & other considerations in a village setting

Indian J Med Res. 2009 Mar;129(3):233-41

Department of Community Health, Christian Medical College, Vellore, India.

BACKGROUND & OBJECTIVE: Availability of clean water and adequate sanitation facilities are of prime importance for limiting diarrhoeal diseases. We examined the water and sanitation facilities of a village in southern India using geographic information system (GIS) tools. **METHODS:** Places of residence, water storage and distribution, sewage and places where people in the village defaecated were mapped and drinking water sources were tested for microbial contamination in Nelvoy village, Vellore district, Tamil Nadu. **RESULTS:** Water in the village was found to be microbiologically unfit for consumption. Analysis using direct observations supplemented by GIS maps revealed poor planning, poor engineering design and lack of policing of the water distribution system causing possible contamination of drinking water from sewage at multiple sites.



INTERPRETATION & CONCLUSION: Until appropriate engineering designs for water supply and sewage disposal to suit individual village needs are made available, point-of-use water disinfection methods could serve as an interim solution.



Mohan VR, Muliyl J.

Mortality patterns and the effect of socioeconomic factors on mortality in rural Tamil Nadu, south India: a community-based cohort study

Trans R Soc Trop Med Hyg. 2009 Aug;103(8):801-6. Epub 2009 May 22

Department of Community Health, Christian Medical College, Vellore 632 002, Tamil Nadu, India.

The importance of mortality data for assessing the health status of any population and for planning disease control and health promotional interventions is well established. A population-based cohort study was conducted in Kaniyambadi Block, a rural block in North Arcot District in Tamil Nadu, India, with a population of approximately 120 000 people living in 88 villages. The mortality rates, patterns and effect of socioeconomic factors on mortality were studied. The overall incidence of mortality in the study cohort was 7.3/1000 person-years, with higher rates of mortality among men than women. People with low socioeconomic status (SES) had almost two-fold higher mortality rates across all age groups compared with people with high SES. Deaths due to injuries and other external causes contributed 23.0% of all deaths, among which the low socioeconomic group had 56% excess cause-specific mortality compared with the high socioeconomic group. Standardised mortality ratios indicated that the low socioeconomic group had 25% excess mortality compared with the overall standard mortality. This study clearly shows that the low SES group had a significantly higher incidence of mortality due to all causes and among all age groups.



CLINICAL: OBSERVATIONAL

Abraham V, Mathew A, Cherian V, Chandran S, Mathew G.

Aberrant subclavian artery: anatomical curiosity or clinical entity

Int J Surg. 2009 Apr;7(2):106-9. Epub 2009 Feb 6

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Dysphagia lusoria, caused by aberrant subclavian artery, is an uncommon cause of dysphagia. When present it is mostly asymptomatic. Barium esophagogram may indicate the presence of this anomaly. Diagnosis needs to be confirmed by CT/MRI prior to any intervention. No treatment is required for asymptomatic patients. If causing significant symptoms, operative management offers definitive treatment. The choice of treatment depends on local expertise, equipment and experience of the surgical team. However, for those who are unfit or refuse operative intervention, there is a role for symptomatic and supportive treatment. Our cases demonstrate three different manifestations of this single entity.



Agarwal S, Lee AD, Raju RS, Stephen E.

Venous thromboembolism: A problem in the Indian/Asian population?

Indian J Urol. 2009 Jan;25(1):11-6

Department of General Surgery Unit II and Vascular Surgery, Christian Medical College, Vellore-632 004, Tamil Nadu, India.

Venous thromboembolism (VTE) is a common and potentially life threatening condition. It continues to be under diagnosed and undertreated. Awareness among Indians regarding this potentially life-threatening disease is low. Contrary to earlier belief, the incidence of VTE in Asia and India is comparable to that in Western countries. The risk of VTE is especially high in hospitalized patients, in a majority of whom it is clinically silent. It is one of the commonest causes of unplanned readmission and preventable death. In the United States, it is responsible for more deaths than accidents. Thromboprophylaxis is highly effective in reducing the incidence of VTE without any increase in clinically significant bleeding. It is worth emphasizing that prevention of VTE is much easier and cheaper than its treatment.



Ambett R, Rupa V, Rajshekhar V.

Analysis of causes for late presentation of Indian patients with vestibular schwannoma

J Laryngol Otol. 2009 May;123(5):502-8.

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

OBJECTIVE: To determine the causes of delay in diagnosis and treatment of Indian patients with vestibular schwannomas. **METHODS:** In a prospective study from 2003 to 2005, 50 patients with a confirmed diagnosis of vestibular schwannoma were interviewed to determine the causes for (1) the delay between the patient noting the initial symptom and the definitive diagnosis, and (2) the reasons for delayed diagnosis. **RESULTS:** In 90 per cent of patients, the initial symptom was either hearing loss (62 per cent), vertigo (24 per cent) or tinnitus (4 per cent). However, most patients had been diagnosed and had presented for surgery only after neurological symptoms had become apparent. The delay between the initial medical consultation and the final diagnosis ranged from one month to 204 months (mean +/- standard deviation, 32.2 +/- 38.9 months). After the patient had noted symptoms, the diagnosis of vestibular schwannoma was delayed due to doctor-related causes in 80 per cent of cases, and due to patient-related causes in 20 per cent. Delay following diagnosis was minimal. **CONCLUSIONS:** Delay in the diagnosis of vestibular schwannoma in Indian patients is due to both doctor- and patient-related factors.



Ananthakrishna R, Goel R, Padhan P, Mathew J, Danda D.

Relapsing polychondritis--case series from South India

Clin Rheumatol. 2009 Jun;28 Suppl 1:S7-10.

Department of Medicine, Christian Medical College and Hospital, Vellore, 632004, India.

Relapsing polychondritis (RP) is a rare recurring inflammatory disorder with variable clinical course. It has been described mainly in Caucasian population. Reports from other ethnic groups are few. We report seven cases of relapsing polychondritis in south Indian population. In between 1995 and 2008, seven patients fulfilling the McAdam-Damiani-Levine criteria for diagnosis of relapsing polychondritis were identified. Records pertaining to these patients were studied and clinical presentation, course, and treatment offered were analyzed retrospectively. The female-to-male ratio in our series was 2.5:1. The age of onset of symptoms ranged from 28 to 54



years, with a mean of 40.2 years. An average of 20 months, ranging from 3 months to 6 years, elapsed before the patient presented to us seeking a diagnosis. Various structural involvement in our series were as follows: pinna in four (57%), nasal cartilage in five (71%), joints in three (43%), eyes in three (43%), laryngotracheal tree in three (43%), inner ear in one (14.3%), skin in one (14.3%), and heart in one (14.3%). Associated autoimmune diseases were present in four (57%) patients in the form of one of the following in each: vasculitis, autoimmune hemolytic anemia, hypothyroidism, and rheumatoid arthritis. All seven patients received prednisolone with three of them requiring additional immunosuppressants. There was no mortality amongst the four patients who had remained on follow-up at the time of this report. Although RP is an uncommon disorder, clinicians should be aware of the manifestations so as to initiate prompt treatment and prevent complications. Our series reports less frequent auricular cartilage and skin involvement and an exceptional case of basal cell carcinoma, although the other manifestations were similar to that seen in Caucasian and other Asian populations.



Basu G, Surekha V, Ganesh A.

Disseminated cysticercosis

Trop Doct. 2009 Jan;39(1):48-9

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Cysticercosis is a common public health problem in the Tropics. However, disseminated cysticercosis is rare. We report a patient with chronic liver disease and seizures, in whom a simple plain radiographic examination helped in narrowing down the differential diagnosis to disseminated cysticercosis. The diagnosis was confirmed by serum cysticercal antibody enzyme-linked immunosorbent assay (ELISA) and computerized tomography of the brain.



Bhagat SK, Gopalakrishnan G, Kekre NS, Chacko NK, Kumar S, Manipadam MT, Samuel P.

Factors predicting inguinal node metastasis in squamous cell cancer of penis

World J Urol. 2009 Jun 2. [Epub ahead of print]

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

PURPOSE: To identify factors predicting the risk of inguinal metastasis in squamous cell carcinoma of the penis. The therapeutic advantages of early lymphadenectomy in squamous cell carcinoma of the penis must be counterbalanced against its post-operative morbidity. Loss to follow up is a major problem in developing countries. Generating a nomogram based on clinical lymph node status and histopathological findings in the primary tumor could facilitate clinical decision making in the management of penile cancer. **METHODS:** We prospectively studied 106 patients with penile squamous cell cancer treated from September 2001 to August 2007 at our institution. All patients were offered lymphadenectomy (LAD). A multivariate logistic regression model was used to develop a nomogram. We highlight the problems of loss to follow up in these patients. **RESULTS:** Of 53 who opted for LAD, 22 had nodal metastasis. The presence of high grade ($P = 0.004$), lymphovascular invasion (LVI) ($P = 0.01$) and palpable inguinal lymph nodes ($P = 0.05$) were the strongest predictors of metastasis. Of 51 who refused LAD, 22 were lost to follow up. Out of these, 16 were at high risk and 9 of them came back with inoperable fungating nodes. A nomogram predicting the risk of lymph node metastasis showed a bias corrected good concordance index (0.74) and good calibration. **CONCLUSIONS:** High grade and LVI in the tumor along with clinical stage of the inguinal nodes were the strongest predictors of metastasis. These features helped us to develop a nomogram to predict and to identify patients at risk of nodal metastasis.



Bhargava P, Matthew P.

Kikuchi's disease with systemic manifestations: a link to the Epstein-Barr virus

Singapore Med J. 2009 Mar;50(3):e110-1

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Kikuchi's disease is a rare benign disease that presents with fever and cervical lymphadenopathy. The importance of this disorder, lies in distinguishing it from more sinister disorders, such as lymphoma, in order to avoid unnecessary investigation and treatment. Systemic manifestations are rare in Kikuchi's disease but are not unknown. We present two cases of varying degrees of systemic involvement due to Kikuchi's disease. Both these patients, a 22-year-old woman and a 44-year-old woman, were also found to have evidence of recent Epstein-Barr virus (EBV) infection. The evidence of a causative role for EBV in Kikuchi's is also reviewed.



Biswas SS, Gupta R, Vanjare HA, Bose S, Patel JA, Selvarajan S, Aaron J, Nitya E, Iyer DS, Jacob NS, John KR, Jacob KS.

Depression in the elderly in Vellore, South India: the use of a two-question screen

Int Psychogeriatr. 2009 Apr;21(2):369-71. Epub 2009 Jan 13

Department of Community Health, Christian Medical College, Vellore, India.

BACKGROUND: Depression in the elderly is a common and disabling condition. The aim of the study was to evaluate the sensitivity and specificity of a two-question screen to identify depression and common mental disorders in the elderly. **METHOD:** Residents of a ward in the town of Vellore were identified by a door-to-door survey from which 204 subjects aged over 60 years were selected for the study by systematic random sampling. They were screened using the two-question screen. The Revised Clinical Interview Schedule (CIS-R) was employed to confirm the diagnosis. **RESULTS:** The prevalence of depression and common mental disorder, using the CIS-R standard, was found to be 31.5%. The two-question screen has a sensitivity of 93.8% and specificity of 48.2%. **CONCLUSIONS:** The high sensitivity of the two-question screen makes it a useful screening method which can be employed by health workers in the field.



Boopalan PR, Daniel AJ, Chittaranjan SB.

Managing skin necrosis and prosthesis subluxation after total knee arthroplasty

J Arthroplasty. 2009 Feb;24(2):322.e23-7. Epub 2008 Jun 13

Department of Orthopedics Unit III, Christian Medical College, Vellore, Tamil Nadu, India.

Skin necrosis and prosthetic subluxation are dreaded complications after total knee arthroplasty. It can result in deep infection with subsequent failure of prosthesis. The incidence of infection in patients with rheumatoid arthritis who undergo knee arthroplasty is high when compared to patients with primary osteoarthritis. The gastrocnemius muscle flap has been described for cover of proximal tibia and tendon loss because of malignancy and has been used as a bridge graft in trauma patients with patellar tendon loss. We describe a patient with total knee arthroplasty with anterior knee skin necrosis and prosthesis subluxation because of attenuation and loss of continuity of patellar tendon. This was managed by using gastrocnemius bridge grafting. Here, the gastrocnemius bridge graft was used as a soft tissue cover as well as a dynamic anterior stabilizer for the prosthesis.



Bose A, Sandal Sejbaek C, Suganthi P, Raghava V, Alex R, Muliyl J, Konradson F.
Self-harm and self-poisoning in southern India: choice of poisoning agents and treatment
Trop Med Int Health. 2009 Jul;14(7):761-5. Epub 2009 May 26
Department of Community Health, Christian Medical College, Vellore, India.

Summary Objective To record cases of suicide and attempted suicide among a population of 108 000 people living in a primarily rural area of southern India, with the aim of guiding policies and strategies to restrict access to poisonous compounds at community level. **Method** Community-based surveillance over a period of 2 years. **Results and conclusion** The overall suicide rate was 71.4 per 100 000 population; the highest burden was among men. Most people died through hanging (81, 54%) and self-poisoning (46, 31%). Of the 46 who died from self-poisoning, 78.3% had taken pesticides and 19.7% had eaten poisonous plants. Eighty per cent of the self-poisoning cases obtained the poisonous substance in or in close proximity to the home, highlighting the importance of safe storage in the domestic environment. Of the 110 fatal and non-fatal self-poisoning cases, 87 (57.5%) were taken for treatment; 50 (57.4%) went to government hospitals and 37 (42.5%) to private facilities. This indicates the importance of including the private sector in the efforts to improve case management. Furthermore, the fact that 31 (67%) of the self-poisoning patients, who eventually died, were alive after 4 h provides an incentive to focus on improved case management and access to health services.



Chacko B, Seshadri P, Sudarsanam TD.
Generalised dystonia: clinical diagnosis is possible
Hong Kong Med J. 2009 Jun;15(3):224-6
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Neurodegeneration with brain iron accumulation type 1 (previously known as Hallervorden-Spatz syndrome) is a rare neurodegenerative disorder characterised by its typical clinical and radiological features. We present a case of an adolescent girl with rapidly progressive dystonia in whom the diagnosis of the above disorder was made prior to radiological investigation. This report has been made to highlight the diagnostic relevance of a good history and clinical examination. This is particularly important in a developing country where diagnostic radiological investigations are expensive.



Chandrashekar, L. (2009)
Dermatoscopy of blue vitiligo
Clin Exp Dermatol. 2009 Jul;34(5):e125-6. Epub 2009 Apr 27
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Blue vitiligo is a distinct variant of vitiligo characterized by a blue-grey appearance of the skin, which corresponds histologically with absence of epidermal melanocytes and presence of numerous dermal melanophages. A 23-year-old woman of Indian origin with Fitzpatrick skin type V presented with a 1-month history of non-moesthetic depigmented macules over the right forearm, dorsa of the hands and right areola. The macule over the right forearm had a bluish tinge. A clinical diagnosis of vitiligo vulgaris with blue vitiligo was made. Dermatoscopy of the interface between the blue macule and the hypopigmented macule revealed a linear depigmented macule in the centre with multiple blue dots and absence of epidermal melanin on the side of the



blue macule, and reticular pigmentation with a few depigmented macules and scattered blue dots over the side of the hypopigmented macule. Blue vitiligo was described previously in a patient seropositive for human immunodeficiency virus, and believed to represent postinflammatory hyperpigmentation in areas bordering the vitiliginous patches as a result of psoralen ultraviolet A treatment. This case is unusual because of its rarity and the description of the associated dermatoscopic findings.



Cherian RS, Betty M, Manipadam MT, Cherian VM, Poonnoose PM, Oommen AT, Cherian RA.
The “dot-in-circle” sign -- a characteristic MRI finding in mycetoma foot: a report of three cases
Br J Radiol. 2009 Aug;82(980):662-5. Epub 2009 Feb 16

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Three patients referred for MRI of the foot were found to have imaging features characteristic of mycetoma. Two patients presented with recurrent soft tissue masses, which were operated on several times and not suspected to be of infective aetiology. The third patient had typical clinical features with a history of blackish granule discharge. In all three patients, MRI showed conglomerate areas of small round discrete T(2) weighted hyperintense lesions, representing granulation tissue surrounded by a low-signal-intensity rim representing intervening fibrous septa. Within many of these hyperintense lesions, there was a central low-signal-intensity dot, which gives rise to the “dot-in-circle” sign that has been very rarely described in the literature. This sign is an easily recognisable and unique appearance that is highly suggestive of mycetoma.



Choudhrie AV, Thomas AJ, Gopalakrishnan G.

Vesicovaginal fistula repair using tunneled gluteal cutaneous fat-pad flap

Int Urogynecol J Pelvic Floor Dysfunct. 2009 Jan;20(1):121-2

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Tissue interposition in vesicovaginal repair is associated with better cure rates especially in failed repairs. Commonly used tissues include the labial fat pad in transvaginal approach and vascularized omental, peritoneal flaps or ileal patch in transabdominal approach. We report a case of a failed vesicovaginal fistula buttressed with a gluteal cutaneous flap.



Chrispal A, Prabhakar T, Booruga HK.

A bizarre appearance of a common disease, tuberculous dactylitis, involving multiple digits in an adult
Trop Doct. 2009 Jan;39(1):51-2

Christian Medical College, Department of Medicine, Ida Scudder Road, Vellore, Tamil Nadu 632004, India. anugrahchrispal@gmail.com

Tuberculosis is a common illness in developing nations. Tuberculous dactylitis is an unusual manifestation of tuberculous osteomyelitis seen predominantly in children. A woman presented with painless, fusiform swelling of multiple digits of the hand. Synovial biopsy revealed granulomatous inflammation and the pus smear was positive for acid-fast bacilli. She underwent debridement of the involved digits and was initiated on antituberculous therapy. This is an unusual presentation of tuberculous dactylitis in an immunocompetent host which involved multiple digits in a single hand.



David VG, Korula A, Choudhrie L, Michael JS, Jacob S, Jacob CK, John GT.

Cryptococcal granulomatous interstitial nephritis and dissemination in a patient with untreated lupus nephritis.

Nephrol Dial Transplant. 2009 Jun 13. [Epub ahead of print]

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Infection is a significant cause of mortality and morbidity in systemic lupus erythematosus (SLE). There are many reports of cryptococcal infection in patients with SLE, on immunosuppression. However, untreated lupus with cryptococcal infection and dissemination is rare. CD4 lymphopaenia is not reported in such patients. We describe a patient with untreated SLE to be having cryptococcal granulomatous interstitial nephritis and dissemination with CD4 lymphopaenia.



George L, John GT, Jacob CK, Eapen P, Pulimood S, George R.

Skin lesions in renal transplant recipients: a single center analysis

Indian J Dermatol Venereol Leprol. 2009 May-Jun;75(3):255-61

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BACKGROUND: The chronic use of immunosuppressants in renal transplant recipients (RTRs) predisposes them to a variety of skin manifestations. Studies on skin lesions in RTRs from India have been limited. **Aim:** To study the prevalence and clinical spectrum of skin diseases in RTR in patients attending the Nephrology clinic of a tertiary care hospital in South India. **METHODS:** Between October 2002 and June 2003, 365 RTRs were evaluated for skin lesions, including 280 examined after renal transplant (group A) and 85 examined once before and then monthly after transplant for a period of 6 months (group B). **RESULTS:** A total of 1163 skin lesions were examined in 346 RTRs (94.7%) including lesions of aesthetic interest (LAI) [62.3%] followed by infections [27.3%]. All LAI were drug-related manifestations, making it the most common skin lesion, while fungal (58.7%) and viral (29.3%) infections constituted majority of lesions caused by infection. Lesions related to neoplasms were relatively uncommon (2.1%) and all lesions were benign. Miscellaneous lesions constituted 8.3% of skin lesions, which included vaccine-induced necrobiotic granulomas at the site of Hepatitis B vaccination and acquired perforating dermatoses. **CONCLUSION:** Skin lesions among RTRs from India consist predominantly of drug-related LAI and infections and are different from the West in view of the paucity of neoplastic lesions.



George M, Augustine AM, Mathew J, Cherian VT, Cherian VK.

Ancient schwannoma of the oesophagus presenting with stridor: case report

J Laryngol Otol. 2009 May 20:1-3. [Epub ahead of print]

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

Objective: We report a rare presentation of ancient schwannoma of the oesophagus, management of which required tracheal resection. **Case report:** A 40-year-old woman was referred to our hospital with a six-year history of progressively worsening stridor. She had undergone laser excision of a tracheal tumour thrice in the past. Fibre-optic bronchoscopy showed a tumour arising from the posterior wall of the trachea. Computed tomography scanning showed evidence of extension along the retrotracheal plane. The patient required tracheal resection and anastomosis due to significant involvement of the posterior tracheal wall. The mass was seen to be arising



from the oesophagus, and was able to be enucleated from the oesophageal wall. Histopathology was typical of an ancient schwannoma. Conclusion: This case emphasises the need to consider oesophageal schwannomas in the differential diagnosis of posterior tracheal tumours; it also highlights the need for careful pre-operative assessment in the management of these tumours in order to avoid complications.



Hephzibah J, Theodore B, Oommen R, David K, Moses V, Shah S, Panicker J.

Use of single-photon emission computed tomography/low-resolution computed tomography fusion imaging in detecting an unusually presenting osteoid osteoma of the lumbar vertebra

Am J Orthop. 2009 Mar;38(3):117-9

Department of Nuclear Medicine, Christian Medical College, Vellore, India.

In this article, we describe an unusual presentation of osteoid osteoma of the lumbar vertebra in a woman in her early 30s. Single-photon emission computed tomography/low-resolution computed tomography (SPECT/CT) fusion imaging was used to detect the osteoma, precisely localize the pathology site, and guide surgical excision of the lesion. In recent years, SPECT/CT fusion imaging has helped make interpretations of scintigraphic images significantly more accurate.



Jayanth ST, Kirupakaran H, Brahmadathan KN, Gnanaraj L, Kang G.

Needle stick injuries in a tertiary care hospital

Indian J Med Microbiol. 2009 Jan-Mar;27(1):44-7

Hospital Infection Control Committee, Christian Medical College, Vellore, Tamil Nadu-632 004, India.

BACKGROUND: Accidental needle stick injuries (NSIs) are an occupational hazard for healthcare workers (HCWs). A recent increase in NSIs in a tertiary care hospital led to a 1-year review of the pattern of injuries, with a view to determine risk factors for injury and potential interventions for prevention. **METHODS:** We reviewed 1-year (July 2006-June 2007) of ongoing surveillance of NSIs. **RESULTS:** The 296 HCWs reporting NSIs were 84 (28.4%) nurses, 27 (9.1%) nursing interns, 45 (21.6%) cleaning staff, 64 (21.6%) doctors, 47 (15.9%) medical interns and 24 (8.1%) technicians. Among the staff who had NSIs, 147 (49.7%) had a work experience of less than 1 year ($n = 230$, 77.7%). In 73 (24.6%) of the NSIs, the patient source was unknown. Recapping of needles caused 25 (8.5%) and other improper disposal of the sharps resulted in 55 (18.6%) of the NSIs. Immediate post-exposure prophylaxis for HCWs who reported injuries was provided. Subsequent 6-month follow-up for human immunodeficiency virus showed zero seroconversion. **CONCLUSION:** Improved education, prevention and reporting strategies and emphasis on appropriate disposal are needed to increase occupational safety for HCWs.



Jebasingh KF, Koshy TG, Paul TV, Paul MJ, Abraham D, Viswabandya A.

Pheochromocytoma and haemophilia: an unusual combination

Singapore Med J. 2009 Feb;50(2):e71-3

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We report pheochromocytoma and haemophilia occurring in a 19-year-old South Indian man. To the best of our knowledge, this case is the first of its kind to be reported in the medical literature. The patient had bilateral adrenal pheochromocytomas with an extradrenal pheochromocytoma on the left side, and was successfully operated on after optimal preoperative blood pressure control and factor VIII support.



John SS, Padhan P, Mathews JV, David S.

Acute anterior uveitis as the initial presentation of alkaptonuria

J Postgrad Med. 2009 Jan-Mar;55(1):35-7

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Alkaptonuria is a rare autosomal recessive metabolic disorder that may present with multi-system involvement such as ochronotic arthropathy, renal, urethral and prostatic calculi, cardiac valvular lesions and pigmentation of the skin, sclera, cartilage and other connective tissues. An association of the disease with uveitis has never been reported. We report the first case of alkaptonuria with ochronotic arthropathy presenting with recurrent acute anterior uveitis as the initial manifestation. The possible common link with the HLA-B27 gene is discussed.



Joseph G, Thomson VS.

Transjugular approach for transcatheter closure of mitral paraprosthetic leak

Catheter Cardiovasc Interv. 2009 Jun 9. [Epub ahead of print]

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

Transcatheter closure of mitral paraprosthetic leak (PPL) using femoral antegrade transseptal or retrograde approach is often unsuccessful when the involved part of the mitral annulus is difficult to access or when the left atrium is large. We report the successful use of jugular venous approach to perform transseptal antegrade PPL closure in a 49-year-old male with mitral PPL located in the anteromedial part of the annulus. This technique could serve as a useful alternative in patients in whom transcatheter closure of mitral PPL is technically difficult. (c) 2009 Wiley-Liss, Inc.



Joseph V, Reilly P.

Syndrome of the trephined

J Neurosurg. 2009 Apr 10. [Epub ahead of print]

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“Syndrome of the trephined” or “sinking skin flap syndrome” is an unusual syndrome in which neurological deterioration occurs following removal of a large skull bone flap. The neurological status of the patient can occasionally be strongly related to posture. A 77-year-old male patient with an acute subdural hematoma was treated using a hemicraniectomy and evacuation of the hematoma. On the 9th postoperative day there was deterioration in sensorium associated with a sunken scalp flap and worsening midline shift on CT. A significant improvement in sensorium and a filling up of the scalp flap occurred after maintaining the patient’s head in a dependent position. The patient subsequently made an excellent recovery following replacement of the bone flap. The pathophysiology of “syndrome of the trephined” or “sinking skin flap syndrome” is reviewed.



Korula A, Shah A, Philip MA, Kuruvila K, Pradhip J, Pai MC, Chacko RT.

Primary mediastinal synovial sarcoma with transdiaphragmatic extension presenting as a pericardial effusion

Singapore Med J. 2009 Jan;50(1):e26-8

Department of Pathology, Christian Medical College Hospital, Tamil Nadu, India. chinnukorula@rediffmail.com

Synovial sarcoma is a distinctive soft tissue neoplasm, most commonly seen in the extremities of young adults. Mediastinal synovial sarcoma is a well-documented entity; however, in many cases, the differentiation between this and other spindle cell tumours may be difficult, especially in monophasic tumours. Unlike most pleuropulmonary synovial sarcomas which are well circumscribed, mediastinal tumours are often infiltrative and resection may not be adequate, leading to a high rate of recurrence. We present a 49-year-old man with a primary pericardial synovial sarcoma, with transdiaphragmatic intra-abdominal extension, which clinically, radiologically and grossly mimicked a tuberculous pericarditis.



Koshy CG, Govil S, Shyamkumar NK, Devasia A.

Bladder varices--rare cause of painless hematuria in idiopathic retroperitoneal fibrosis

Urology. 2009 Jan;73(1):58-9.

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

A patient presented to the urology outpatient department with complaints of recurrent episodes of painless hematuria. A contrast-enhanced computed tomography scan of the abdomen revealed vesical varices that had developed secondary to obstruction of the inferior vena cava. Additional investigation revealed idiopathic retroperitoneal fibrosis. Steroid therapy was started and tapered during a 6-week period. No recurrence of the hematuria was noted on follow-up. We have described a unique presentation of hematuria due to vesical varices in a patient with idiopathic retroperitoneal fibrosis.



Krishnamoorthy S, Gopalakrishnan G, Kekre NS, Chacko N, Keshava S, John G.

Detection and treatment of transplant renal artery stenosis

Indian J Urol. 2009 Jan;25(1):56-61

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

PURPOSE: To assess the effects of transplant renal artery stenosis (TRAS) on blood pressure, renal function, and graft survival. To assess the usefulness of Doppler in predicting the clinical significance of TRAS and also to identify the predictive factors in Doppler that correlated with clinical features of TRAS. **MATERIALS AND METHODS:** A prospective study was done on consecutive renal allograft recipients at Christian Medical College, over a period of 66 months from January 2002. All recipients underwent Doppler ultrasound (DUS) evaluation on the fifth post-operative day. Subsequent evaluation was done if the patients had any clinical or biochemical suspicion of TRAS. Angiogram was done in case of a high index of suspicion of significant stenosis or before angioplasty and stenting. The clinical and radiological outcomes of the patients with symptomatic or asymptomatic TRAS were analyzed. **RESULTS:** Five hundred and forty three consecutive renal allograft recipients were analyzed, of whom, 43 were found to have TRAS. Nine recipients (21%) were detected to have TRAS on first evaluation. All had a high peak systolic velocities (PSV) recorded while 25 of them had other associated features. Patients with only high PSV required no further intervention and were followed up. They had a pre-transplant mean arterial pressure (MAP) of 107.83 mmHg (SD = 13.32), ranging from 90 to 133 mm Hg and a posttransplant MAP of 106.56 mmHg (SD =16.51), ranging from 83 to 150 mm Hg. Their mean nadir serum



creatinine was 1.16 mg% (SD = 0.24), at detection was 1.6 mg% (SD = 1.84) and at 6 months follow-up was 1.26 mg% (SD=0.52). Of the remaining 25 patients with other associated Doppler abnormalities, 11 required further intervention in the form of re-exploration in 2, angioplasty in 3 and stenting in 6 patients. One patient in the group of patients intervened, expired in the immediate post-operative period due to overwhelming urosepsis and consumption coagulopathy. The mean creatinine clearance (Cockcroft-Gault method) in this group of remaining 10 patients, before and after intervention was 44.75 ml/min (SD=17.85) and 68.96 ml/min (SD = 10.56), respectively, with a mean increase by 24.21 ml/min (P=0.000). The mean arterial pressure before and after intervention in this group were 132.80 mm Hg (SD = 13.22) and 102 mm Hg (SD = 10.55), with a decline in the MAP by 30.80 mmHg (P=0.017). The haemoglobin levels also increased from 11.72 (SD=2.13) to 12.48 gm% (SD = 1.75), with a mean increase by 0.76 gm% (P=0.05). **CONCLUSIONS:** Patients with isolated high PSV do not have a significant alteration of blood pressure or allograft function and required no intervention. Although high PSV with associated Doppler anomalies are more suggestive of significant TRAS, the decision regarding surgical intervention is largely based on clinical assessment.



Lee AD, Stephen E, Agarwal S, Premkumar P.

Venous thrombo-embolism in India

Eur J Vasc Endovasc Surg. 2009 Apr;37(4):482-5. Epub 2009 Feb 8

Vascular & General Surgery, Unit 2, Department of Surgery, Christian Medical College, Vellore, Tamilnadu, India.

INTRODUCTION: Venous thrombo-embolism (VTE) has traditionally been considered rare in Asia. Recent reports from Hong Kong and Singapore indicate an increasing incidence of VTE. **OBJECTIVES:** To determine the incidence of VTE among hospitalised patients and study the predisposing factors and hence to increase the awareness of the need for VTE prophylaxis. **METHODS:** This is a retrospective study carried out on all patients diagnosed with VTE between 1996 and 2005 at our hospital. In-patient records were used to collect data while out-patient records were used for follow-up outcomes. **RESULTS:** The incidence of VTE was 17.46 per 10,000 admissions. Malignancy (31%) was the most common predisposing factor, followed by postoperative status (30%). The incidence following surgery was five per 10,000 operations. General surgery patients had the highest incidence of deep vein thrombosis (DVT; 40.3%), while the incidence in orthopaedic patients was 20.1%. Low-molecular-weight heparin (LMWH) has been increasingly used therapeutically over the years. Pulmonary embolism was diagnosed in 14.9% of the study patients. Mortality in those with confirmed pulmonary embolism was 13.5%. **CONCLUSION:** VTE is no longer a rarity in India. General surgical operations are the most common causes of postoperative DVT. Pulmonary embolism continues to be 'suspected' more often than it is diagnosed.



Michael RC, Michael JS, Mathews MS, Rupa V.

Unusual presentation of entomophthoromycosis

Indian J Med Microbiol. 2009 Apr-Jun;27(2):156-8

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Rhinoentomophthoromycosis caused by *Conidiobolus* sp commonly presents as a chronic granulomatous lesion that affects the rhinofacial subcutaneous tissue. We present an 18-year-old girl who presented with progressive bilateral proptosis and loss of vision since 2 weeks. Biopsy and fungal cultures confirmed diagnosis of *Conidiobolus* sp infection of the paranasal sinuses bilaterally with orbital extension and blindness. The clinical picture was complicated by the presence of sputum-positive cavitatory pulmonary tuberculosis, which was diagnosed at the same time. To our knowledge, this is the first such case to be reported from India. We also discuss



the management of entomophthoromycosis. Despite many reports of success, there remains no consensus on the treatment of *Conidiobolus* infections of the nose and the paranasal sinuses with antifungal agents.



Mitra S, Karthik R, Balaji V, George IA, Kapil A, Abraham OC.

Quinolone-Resistant *Salmonella enterica* Serovar typhi presenting as Acute Fulminant Hepatitis

J Assoc Physicians India. 2009 Apr;57:338-9

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Typhoid remains a major public health problem in India and must be considered in the differential diagnosis of any acute febrile illness. Hepatic involvement in typhoid occurs though presentation as acute fulminant hepatitis is uncommon. Quinolones have been the mainstay of therapy for typhoid but there are increasing reports of quinolone resistance in *S. typhi*. We report a case of typhoid fever due to Ciprofloxacin resistant *S. typhi* presenting with acute fulminant hepatitis



Nair S, Jacob J, Aaron S, Thomas M, Joseph M, Alexander M.

Pulmonary distress following attempted suicidal hanging

Indian J Med Sci. 2009 Feb;63(2):53-7

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

OBJECTIVE : To assess the incidence of post-hanging pulmonary distress in cases of attempted suicidal hanging and predictors of outcome among these patients. **DESIGN :** Five-year retrospective analysis. **SETTING:** Tertiary care center in south India. **PATIENTS :** A total of 335 patients who attempted suicidal hanging, aged above 16 years, were admitted during this period. Thirty-eight of them with pulmonary distress established clinically and with radiological evidence of pulmonary injury post hanging met the inclusion criteria. **MEASUREMENTS :** Data from ICU records of 5 years, X-rays and laboratory investigations were reviewed. In patients identified to have post-hanging pulmonary distress, the neurological status, chest x-rays, arterial blood gas values and outcome data were collected and analyzed. **RESULTS :** Eleven percent ($n = 38$) of the 335 patients admitted following attempted suicidal hanging were diagnosed to have post-hanging pulmonary distress. The overall mortality among post-hanging patients was 5%, which increased to 34.2% ($n = 13$) in the presence of pulmonary distress ($P < \text{or} = 0.001$). Among the prognostic factors evaluated, a $\text{PaO}_2 / \text{FiO}_2$ (P/F) ratio of < 100 at admission predicted a poor outcome ($P < \text{or} = 0.001$). **CONCLUSION :** Post-hanging pulmonary distress is a relatively common complication of hanging and is associated with increased mortality. P/F ratio from arterial blood gas at admission was the only significant predictor of outcome in this group of patients.



Nambi GI, Jacob J, Gupta AK.

Monofocal maxillary fibrous dysplasia with orbital, nasal and oral obstruction,

J Plast Reconstr Aesthet Surg. 2009 Jun 17. [Epub ahead of print]

Department of Plastic and Reconstructive Surgery, Christian Medical College, Vellore - 632004, Tamil Nadu, India; Fellow in Reconstructive Microsurgery, Plastic & Reconstructive Services, Department of Surgical Oncology, TATA Memorial Hospital, Parel, Mumbai - 400012, India.



Fibrous dysplasia is a condition characterised by excessive proliferation of bone-forming mesenchymal cells. Although a variety of causative factors are described, the exact aetiology is yet to be fully known. The maxilla is the most commonly affected facial bone, with facial asymmetry being the usual complaint. Surgery is the treatment of choice with two available options, namely, conservative bone shaving and radical excision and reconstruction. We describe the case of a 25-year-old male who presented with a giant monofocal fibrous dysplasia of the left maxilla with facial asymmetry, including obstruction of the left orbit, nasal and left half of the oral cavities and was treated with conservative surgery.



Nath J, Wigley C, Keighley MR, Perakath B.

Rectal cancer in young adults: a series of 102 patients at a tertiary care centre in India

Colorectal Dis. 2009 Jun;11(5):475-9.

Department of Colorectal Surgery (Unit 5), Christian Medical College, Vellore, India.

OBJECTIVE: Rectal cancer in young patients is uncommon. There is little information on rectal cancer in young adults in India. The aim of this study was to determine the relative incidence of rectal cancer in young patients in India and identify any differences in histological grade and pathological stage between younger and older cohorts. **METHOD:** All adult patients presenting at a tertiary colorectal unit with primary rectal adenocarcinoma between September 2003 and August 2007 were included. Patients were divided into two groups: 40 years and younger, and older than 40 years. Details regarding patient demographics, preoperative assessment, management and tumour grade and stage were obtained from a prospectively maintained database. **RESULTS:** One hundred and two of 287 patients (35.5%) were 40 or younger at presentation. Younger patients were more likely to present with less favourable histological features (52.0% vs 20.5% ($P < 0.001$)) and low rectal tumours (63.0% vs 50.0%) ($P = 0.043$), but were equally likely to undergo curative surgery compared to the older group ($P = 0.629$). Younger patients undergoing surgery had a higher pathological T stage (T0-2 18.9%, T3 62.3%, T4 19.7% vs 34.5%, 56.0%, 9.5%) ($P = 0.027$) and more advanced pathological N stage (N0 31.1%, N1 41.0%, N2 27.9% vs 53.4%, 26.7%, 17.2%) ($P = 0.014$). **CONCLUSION:** The relative number of young patients with rectal cancer in this Indian series is higher than figures reported in western populations. The reasons for this are not clear. The histopathological features of rectal tumours in young patients in this study are consistent with similar studies in Western populations.



Oommen AT, Madhuri V, Paul TV.

Slipped upper femoral epiphysis in Hashimoto's thyroiditis in a 29-year-old man

J Bone Joint Surg Br. 2009 May;91(5):666-9

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Slipped upper femoral epiphysis (SUFE) with an open physis is rare in an adult and the condition may present without prior diagnosis of an underlying medical condition. We have treated a 29-year-old man with bilateral SUFE associated with autoimmune hypothyroidism. The management was delayed and complicated by co-existing autoimmune chronic active hepatitis. He underwent thyroxine therapy and bilateral pinning in situ with a single ASNIS screw. Closure of the physis occurred after five months on the right side. The left side required a further corrective intertrochanteric osteotomy, and it was only after 13 months that complete fusion of this physis was seen. The case highlights the need to consider endocrine and metabolic conditions in atypical presentation of SUFE.



Panda BR, Shankar R, Kuruvilla KT, Philip MA, Thankachen R, Shukla V, Korula RJ.
Combined mitral and aortic valve replacement for rheumatic heart disease: fifteen-year follow up and long-term results
J Heart Valve Dis. 2009 Mar;18(2):170-9
Department of Thoracic Surgery, Christian Medical College, Vellore, Tamil Nadu, India. biswa_cmcvellore@yahoo.co.in

BACKGROUND AND AIM OF THE STUDY: Rheumatic heart disease is the most common cause of multivalvular disease in developing countries. Unless aggressive and timely intervention in the form of valve replacement is pursued, the condition progresses rapidly to disability and death. Combined mitral-aortic valve replacement represents a major technical challenge, and carries high early and late mortality rates. **METHODS:** The course of 382 consecutive hospital survivors of combined mitral-aortic valve replacement, operated on between January 1992 and December 2006, was reviewed. The valve of choice for the mitral position was the Starr-Edwards (98%), while Medtronic-Hall and St. Jude Medical valves were favored for the aortic position (81%). **RESULTS:** The mean postoperative follow up was 64.8 +/- 53.9 months, with a total cumulative follow up of 1,792 patient-years (pt-yr); the follow up was 87% complete (n=332). Late death occurred in 29 patients (8.7%). Long-term survival at five, 10 and 15 years was 92%, 78% and 45%, respectively, with a mean survival of 153 months. The linearized rates of thromboembolism, anticoagulation-related hemorrhage and prosthetic valve endocarditis were 1.06, 2.41 and 0.334% per pt-yr, respectively. **CONCLUSION:** Among the rheumatic population, double valve replacement offers excellent symptomatic improvement and favorable late survival. Hemodynamic superiority and thromboresistance are the normal selection criteria for these prostheses, although the surgeon's experience, and the ease of insertion, availability and cost of the valve also play important roles. A strict adherence to optimal anticoagulation levels optimizes protection against thromboembolism and anticoagulation-related hemorrhage, and helps to provide the patient with a good quality life.



Puliyel MM, Pillai R, Korula S.
Intravenous magnesium sulphate infusion in the management of very severe tetanus in a child: a descriptive case report
J Trop Pediatr. 2009 Feb;55(1):58-9.
Department of Child Health, Christian Medical College Hospital, Vellore, India. mammen.puliyel@gmail.com

We report a 7-year-old boy with very severe tetanus treated with continuous infusion of magnesium sulphate for the control of spasms and severe autonomic dysfunction which was refractory to deep sedation and mechanical ventilation. The infusion was not associated with any adverse effects and he made an uneventful recovery. We recommend the use of intravenous magnesium sulphate infusion as an inexpensive and highly effective modality in severe tetanus.



Rajkumar AP, Thangadurai P, Senthilkumar P, Gayathri K, Prince M, Jacob KS.
Nature, prevalence and factors associated with depression among the elderly in a rural south Indian community
Int Psychogeriatr. 2009 Apr;21(2):372-8. Epub 2009 Feb 26
Department of Psychiatry, Christian Medical College, Vellore, India.



BACKGROUND: Depression in old age is an important public health problem causing considerable morbidity and disability worldwide. There is a dearth of community studies from India investigating geriatric depression and its associated risk factors. This study aimed to establish the nature, prevalence and factors associated with geriatric depression in a rural south Indian community. **METHODS:** We recruited 1000 participants aged over 65 years from Kaniyambadi block, Vellore, India. We assessed their socio-demographic profile, psychiatric morbidity, cognitive functioning, anthropometrics and disability status using the following structured assessment tools: Geriatric Mental State, Community Screening Instrument for Dementia, Modified CERAD 10 word list learning task, History and Aetiology Schedule Dementia Diagnosis and Subtype, WHO Disability Assessment Scale II, and Neuropsychiatric Inventory. We adopted a case control framework to study the factors associated with geriatric depression. **RESULTS:** Prevalence of geriatric depression (ICD-10) within the previous one month was 12.7% (95% CI 10.64-14.76%). Low income (OR 1.78; 95% CI 1.08-2.91), experiencing hunger (OR 2.58; 95% CI 1.56-4.26), history of cardiac illnesses (OR 4.75; 95% CI 1.96-11.52), transient ischemic attack (OR 2.43; 95% CI 1.17-5.05), past head injury (OR 2.70; 95% CI 1.36-5.36) and diabetes (OR 2.33; 95% CI 1.15-4.72) increased the risk for geriatric depression after adjusting for other determinants using conditional logistic regression. Having more confidants (OR 0.13; 95% CI 0.06-0.26) was the significant protective factor. Age, female gender, cognitive impairment and disability status were not significantly associated with geriatric depression. DSM-IV diagnosis of major depression was significantly correlated with experiencing hunger, diabetes, transient ischemic attack, past head injury, more disability and less nourishment; having more friends was protective. **CONCLUSIONS:** Geriatric depression is prevalent in rural south India. Poverty and physical ill health are risk factors for depression among elderly while good social support is protective.



Rehman TA, Gibikote S, Ilango N, Thaj J, Sarawagi R, Gupta A.

Bifid mandibular condyle with associated temporomandibular joint ankylosis: a computed tomography study of the patterns and morphological variations

Dentomaxillofac Radiol. 2009 May;38(4):239-44

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OBJECTIVES: Bifid mandibular condyle (BMC) with associated temporomandibular joint ankylosis (TMJA) is extremely rare with only four cases reported. We present the first case series of BMC with TMJA in an attempt to elucidate the morphological pattern in this rare condition. **METHODS:** Retrospective examination of CTs over a period of 6 years revealed 37 patients with TMJA, of whom 10 had BMC. Clinical and CT features of these were analysed. Patients were grouped according to sides of involvement and orientation of condyles. **RESULTS:** The male:female ratio was 1:1. Nine were post-traumatic and one post-infectious. The aetiology was sustained in childhood in all patients. Six patients had unilateral BMCs and four had bilateral. One patient had bilateral BMCs with bilateral TMJA. This was anteroposterior (AP) in orientation. Three patients had bilateral BMCs with unilateral TMJA, among which one was AP and two mediolateral (ML). Six patients had unilateral BMC with ipsilateral TMJA; all of the ML anterior condylar process was ankylosed in joints with AP BMC and TMJA. Lateral condylar process was ankylosed in post-traumatic ML BMC with TMJA, while the medial condylar process ankylosed in the post-infectious patient. In general, ankylosed heads were found to be larger, sclerotic and often mushroom shaped compared with non-ankylosed heads. **CONCLUSIONS:** This series attempts to elucidate patterns of ankylosis and CT morphology in BMC with associated TMJA. Also included are hitherto unreported cases such as bilateral AP BMC with TMJA and post-infectious BMC with TMJA.



Rose W, Puliye MM, Moses PD, Danda D.

Acute pancreatitis as the initial presentation in pediatric systemic lupus erythematosus

Indian J Pediatr. 2009 May 27. [Epub ahead of print]



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It is exceptionally rare for acute pancreatitis to be the presenting manifestation of childhood systemic lupus erythematosus. We report a 14-year-old girl who presented with a history of fever, generalized rash, arthralgia and abdominal pain. Her serum amylase was 1472U/L and lipase 3316 U/L suggestive of acute pancreatitis. Other investigations revealed pancytopenia, low complement, high 24-hour urinary protein and elevated ANA and dsDNA. She was treated with IV methylprednisone, followed by oral steroids.



Samson Sujit Kumar G, Rajshekhar V.

Deep sylvian meningioma: a case report and review of literature

Childs Nerv Syst. 2009 Jan;25(1):129-32.

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

CASE REPORT: A 6-year-old boy presented with seizures. Computed tomography and magnetic resonance imaging showed a large enhancing mass in the left temporo-parietal region. TREATMENT: He underwent left temporo-parietal craniotomy and total excision of the lesion. At surgery, there was no dural attachment, and the tumor was mainly in the posterior part of left sylvian fissure. The biopsy was reported as WHO grade I meningioma. OUTCOME: At 4-year follow-up, he was asymptomatic, and there was no tumor recurrence.



Simon EG, Joseph AJ, George B, Zachariah UG, Jeyamani R, Eapen CE, Chandy G, Ramakrishna BS, Kurian G, Chacko A.

Aetiology of paediatric portal hypertension - experience of a tertiary care centre in South India

Trop Doct. 2009 Jan;39(1):42-4

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The aetiological profile of paediatric portal hypertension in our hospital, a tertiary care centre in South India, showed that the commonest causes were extrahepatic portal venous obstruction (EHPVO) and cirrhosis. Wilson's disease was the most common cause of cirrhosis.



Singh JC, Tharyan P, Kekre NS, Singh G, Gopalakrishnan G.

Prevalence and risk factors for female sexual dysfunction in women attending a medical clinic in south India

J Postgrad Med. 2009 Apr-Jun;55(2):113-20

Department of Urology, Christian Medical College, Vellore, India. chandrasingh@cmcvellore.ac.in

BACKGROUND: Reports from India on the prevalence and determinants of female sexual dysfunction (FSD) are scant. AIMS: To determine the prevalence and risk factors for FSD. SETTINGS AND DESIGN: A cross-sectional survey in a medical outpatient clinic of a tertiary care hospital. MATERIALS AND METHODS: We administered a Tamil version of the Female Sexual Function Index (FSFI) to 149 married women. We evaluated putative risk factors for FSD. We elicited participant's attributions for their sexual difficulties. STATISTICAL



ANALYSIS: We estimated the prevalence of possible FSD and sexual difficulties from published FSFI total and domain cut-off scores. We used logistic regression to identify risk factors for possible FSD. **RESULTS:** FSFI total scores suggested FSD in two-thirds of the 149 women (73.2%; 95% confidence intervals [CI] 65.5% to 79.6%). FSFI domain scores suggested difficulties with desire in 77.2%; arousal in 91.3%; lubrication in 96.6%; orgasm in 86.6%, satisfaction in 81.2%, and pain in 64.4%. Age above 40 years (odds ratios [OR] 11.7; 95% CI 3.4 to 40.1) and fewer years of education (OR 1.2; 95% CI 1.0 to 1.3) were identified by logistic regression as contributory. Women attributed FSD to physical illness in participant or partner, relationship problems, and cultural taboos but none had sought professional help. **CONCLUSIONS:** Sexual problems suggestive of dysfunction, as suggested by FSFI total and domain scores, are highly prevalent in the clinic setting, particularly among women above 40 and those less educated, but confirmation using locally validated cut-off scores of the FSSI is needed.



Sivadasan A, Abraham OC, Rupali P, Pulimood SA, Rajan J, Rajkumar S, Zachariah A, Kannangai R, Kandathip AJ, Sridharan G, Mathai D.

High rates of regimen change due to drug toxicity among a cohort of South Indian adults with HIV infection initiated on generic, first-line antiretroviral treatment

J Assoc Physicians India. 2009 May;57:384-8

Department of Medicine, Christian Medical College, Vellore.

OBJECTIVES: To determine the rates, reasons and predictors of treatment change of the initial antiretroviral treatment (ART) regimen in HIV-infected south Indian adults. **METHODS:** In this prospective cohort study, ART-naïve adults initiated on generic, fixed dose combination ART as per the National AIDS Control Organization guidelines were followed up at an academic medical center. Treatment change was defined as any event which necessitated a change in or discontinuation of the initial ART regimen. **RESULTS:** Two hundred and thirty persons with HIV infection (males 74.8% and median age 37 years) were followed up for median duration of 48 weeks. The majority (98.7%) had acquired HIV infection through the heterosexual route. Most (70.4%) had advanced HIV infection (WHO clinical stage 3 or 4) and 78% had CD4+ T-lymphocyte counts below 200 cells/microL. The initial ART regimens used were: Lamivudine (3TC) with Stavudine (d4T) (in 76%) or Azidothymidine (AZT) and Nevirapine (NVP) (in 86%) or Efavirenz (EFV). The cumulative incidence of treatment change was 39.6% (91 patients). Drug toxicity (WHO grade 3 or 4) was the reason for treatment change among 62 (27%) (incidence rate 35.9/100 person-years). The most common toxicities were attributable to the thymidine analogue nucleoside reverse transcriptase inhibitors (NRTIs), d4T and AZT [lactic acidosis (8.7%), anemia (7%) and peripheral neuropathy (5.2%)]. The other toxicities were rash (3.9%) and hepatitis (1.3%) due to NVP. The mortality (4.6/100 person-years) and disease progression rates (4.1/100 person-years) were low. **CONCLUSIONS:** The ART regimens used in this study were effective in decreasing disease progression and death. However, they were associated with high rates of drug toxicities, particularly those attributable to thymidine analogue NRTI. As efforts are made to improve access to ART, treatment regimens chosen should not only be potent, but also safe.



Srinivasa Rao NV, Rajshekhar V.

Distal-type cervical spondylotic amyotrophy: incidence and outcome after central corpectomy

J Neurosurg Spine. 2009 Apr;10(4):374-9.

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

OBJECT: Distal-type cervical spondylotic amyotrophy (CSA) is a rare form of cervical spondylotic myelopathy (CSM). The authors documented the incidence, clinical presentation, radiological features, and outcome fol-



lowing central corpectomy (CC) in patients with this entity. **METHODS:** The authors performed a retrospective institutional database search of patients who underwent decompressive surgery for CSM between 1992 and 2006 to identify patients with distal-type CSA. Distal-type CSA was defined as weakness and wasting of hands and forearms without gait impairment (Nurick Grades 0 and 1) nor any sensory symptoms or signs in the lower limbs. **RESULTS:** The authors identified 7 male patients (1.1%) with distal-type CSA from among 653 patients who underwent either cervical laminectomy (135 patients) or CC (518 patients). There were sensory symptoms or signs in the upper limbs in all but 1 of the patients. Increased signal intensity in the cord was demonstrated on T2-weighted MR images in all patients. The compression was mainly at the C-6 vertebral level. At a mean follow-up of 46.5 months (range 12-98 months), 6 patients had improved by a mean patient perceived outcome score of 66.7% (range 20-100%). Patients' modified Japanese Orthopedic Association scores improved from a preoperative mean (\pm SD) of 16.1 \pm 0.7, to a follow-up mean of 17.4 \pm 0.5 ($p = 0.004$, paired t-test). One patient whose condition worsened 7 months after CC received a diagnosis of a coexistent motor neuron disease. **CONCLUSIONS:** Distal-type CSA is a rare form of CSM that should be differentiated from motor neuron disease on the basis of subtle sensory symptoms or signs in the upper limbs, and the presence of significant cord compression on the MR imaging. Patient outcome after central corpectomy is good and long lasting.



Stanley R, Kuruvilla A, Kumar S, Gayathri K, Mathews P, Abraham V, Rajkumar A, Jacob KS.
The Vellore screening instruments and strategies for the diagnosis of dementia in the community
Int Psychogeriatr. 2009 Jun;21(3):539-47. Epub 2009 Apr 16
Department of Psychiatry, Christian Medical College, Vellore, India.

BACKGROUND: Many screening instruments for the diagnosis of dementia are not education and culture fair. In addition, despite good sensitivity and specificity, they result in unacceptable levels of false positives when used in the community. This study aimed to develop appropriate instruments for populations with low literacy and to consider strategies to reduce the false positive rates in low prevalence settings. **METHODS:** Activities of daily living, which are not influenced by education and culture, were used to develop a patient screen and an informant version to identify people with dementia. The instruments were validated in the hospital and in the community setting against the standards of DSM-IV and the education-adjusted 10/66 Dementia Research Group diagnosis of dementia. **RESULTS:** The instruments were administered to 90 patients attending a hospital and 101 subjects living in the community in Vellore, South India. The psychometric properties and inter-rater reliability of these screening instruments were good. While the sensitivity and specificity of the patient screen and the informant version were good their false positive rates were high in the community setting. However, the false positive rates reduced when these instruments were used in combination. **CONCLUSION:** The patient screen and the informant version are short culture- and education-fair instruments. They reduce false positive rates, when used in combination in the community.



Suganthan JS, Rajkumar AP, Jagannath C, Pulimood SA, Jacob KS.
Delusional parasitosis over dermatological morbidity: diagnostic and therapeutic challenges
Trop Doct. 2009 Jan;39(1):49-50
Department of Psychiatry, Christian Medical College, Vellore - 632002, Tamilnadu, India.

Delusional parasitosis is a rare psycho-dermatological disorder that lacks standard management guidelines. We report a case of an elderly woman with long standing multiple dermatological illnesses who later developed delusional parasitosis. We highlight the pertinent diagnostic and therapeutic challenges. We support multidisciplinary collaborative care combining effective pharmacotherapy with efficient non-pharmacological measures.



Sureka J, Cherian RA, Alexander M, Thomas BP.

MRI of brachial plexopathies

Clin Radiol. 2009 Feb;64(2):208-18.

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Magnetic resonance imaging (MRI) has become the primary imaging technique in the evaluation of brachial plexus pathology, and plays an important role in the identification, localization, and characterization of the cause. Improvements in MRI technique have helped in detecting changes in the signal intensity of nerves, subtle enhancement, and in detecting perineural pathology, thereby refining the differential diagnosis. The present review of the visualization of brachial plexus abnormalities using MRI is based on a review of 26 cases. The causes include trauma and a spectrum of non-traumatic causes, such as acute idiopathic/viral plexitis, metastases, immune-mediated plexitis, and mass lesions compressing the brachial plexus.



Thomas N, Sankar SS, Braganza D, Jayakrishnan S.

Oculogyric crisis with exacerbation of psychosis: Possible mechanism and clinical implications

Neurosci Lett. 2009 Feb 13;451(1):50-1.

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Oculogyric crisis is a distressing acute/chronic side effect of neuroleptic medications. Chronic oculogyric crisis can be considered as a tardive hyperkinetic movement disorder and it may be associated with worsening of psychotic symptoms. Treatment strategies for chronic oculogyric crisis include; high potency antipsychotics and anticholinergics drugs for immediate relief and clozapine as a long-term treatment strategy. Here we are presenting case histories of four patients with oculogyric crisis and associated worsening of psychosis, its possible etiology and various treatment strategies.



Thomas SG, Moorthy RK, Rajshekhar V.

Brain abscess in a non-penetrating traumatic intracerebral hematoma: case report and review of literature

Neurol India. 2009 Jan-Feb;57(1):73-5

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

We report a 57-year-old man who presented one month after sustaining a traumatic right temporal intracerebral hematoma with history of headache, left hemiparesis and altered sensorium of two days duration. A diagnosis of right temporal resolving hematoma was made on computed tomography scan. However, his sensorium progressively deteriorated and he underwent craniotomy and partial excision of an abscess. He was treated with appropriate antibiotics for six weeks despite of which he did not improve and died nine months later. We conclude that there should be a high index of suspicion for brain abscess in patients with traumatic intracerebral hemorrhage if the clinical and radiological picture is different from the expected course of a resolving hematoma.



Viswanathan S, Moses PD, Varkki S, Russell PS, Brahmadathan KN.

Association Between Neuropsychiatric Morbidity and Streptococcal Infections in Children

Indian Pediatr. 2009 Apr 1. pii: S097475590700132-2. [Epub ahead of print]

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We conducted a case control study to study the association between neuropsychiatric morbidity and group A streptococcal infections in children. Twenty two cases of neuropsychiatric morbidity were compared with 64 controls. Fourteen (63.6 %) of the 22 cases were positive for ASO and/or ADNB while 21 of the 64 controls (32.8 %) were positive for either or both antibodies. (OR = 3.428; CI: 1.15- 10.18; P=0.026). We conclude that there is a statistically significant association between neuropsychiatric morbidity and streptococcal infection in children.



ABSTRACTS NOT AVAILABLE

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Department of Biostatistics, Christian Medical College, Vellore, India. antoni@cmcvellore.ac.in

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Antibiotic prophylaxis in vesicoureteral reflux: A paradigm shift

Indian J Urol. 2009 Jan;25(1):150-1

Department of Urology, Christian Medical College, Vellore, India E-mail: chandrasingh@cmcvellore.ac.in.

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J Plast Reconstr Aesthet Surg. 2009 Feb 12. [Epub ahead of print]

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Department of Surgery Unit 1, General and Head and Neck Surgery, Christian Medical College, Vellore, Tamil Nadu, India.

Joseph AJ, Simon EG, Chandran S, Chacko A.

Pancreatic juice crystals: is it an early marker of chronic pancreatitis?

Gastrointest Endosc. 2009 Mar;69(3):593-5.

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



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Department of Urology, Christian Medical College, Vellore - 632 004, Tamilnadu, India E-mail: editor@indianjurol.com.

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Department of Urology, Christian Medical College, Vellore, India

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Department of Urology, Christian Medical College, Tamil Nadu, India. ajthomas@fastmail.fm

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Can J Surg. 2009 Feb;52(1):E19-20
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CLINICAL : INTERVENTIONS

Gahukamble A, Nithyananth M, Venkatesh K, Amritanand R, Cherian VM.

Open intramedullary nailing in neglected femoral diaphyseal fractures

Injury. 2009 Feb;40(2):209-12. Epub 2008 Dec 13

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INTRODUCTION: Neglected femoral diaphyseal fractures are not uncommon in developing nations however there is a paucity of literature in this regard. Due to lack of effective traction, reduction or immobilisation these fractures are invariably associated with shortening and adjacent joint stiffness, presenting a challenging problem to the treating surgeon. The socioeconomic constraints in our society which result in patients seeking non-medical forms of treatment in the first place also warrant the need for an economically viable, simple effective form of treatment which can be carried out in a less advanced setup, gives reliable outcomes and allows early return to work. **METHODS:** Eleven patients with neglected or late presenting femoral diaphyseal fractures were considered for the study. All patients underwent open intramedullary nailing, bone grafting and manipulation of the knee under anaesthesia. Iliac crest graft was harvested when local callus did not suffice. All patients received a supervised regimen of physiotherapy. Patients were followed up clinically and with plain radiographs at 6 weeks and 3 months to assess union and at monthly intervals thereafter. **RESULTS:** The mean patient age was 28.8 years (15-48). The mean delay in presentation was 14 weeks (3-32 weeks). The mean shortening was 3.8 cm with four fractures showing signs of malunion. Five patients were given preoperative traction and bone resection was performed in only one patient. The mean hospital stay was 11 days (5-25 days). One patient was lost to follow up, of the remaining 10 patients all united at a mean of 11.9 weeks with 7 patients regaining full range of motion. The mean knee range of motion was 142.5 degrees. There were no wound related or neurological complications. One patient had a patellar tendon rupture which was repaired and another required dynamisation and bone marrow injection for delayed union. **CONCLUSION:** We conclude that the treatment of neglected femoral diaphyseal fractures with open intramedullary nailing and bone grafting followed by manipulation of the knee with preoperative traction in selected cases is a satisfactory method of treatment showing reliable bony union however knee mobilisation should be undertaken with caution.



George B, Mathews V, Viswabandya A, Srivastava A, Chandy M.

Fludarabine-based reduced intensity conditioning regimens for allogeneic hematopoietic stem cell transplantation in patients with aplastic anemia and fungal infections

Clin Transplant. 2009 Mar;23(2):228-32

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Eighteen patients (12 men and 6 women) with aplastic anemia and active fungal infections (10 proven/probable; 8 possible) underwent stem cell transplantation using fludarabine combined with cyclophosphamide or total body irradiation. Peripheral blood stem cells (PBSC) were the main graft source and a combination of cyclosporine with either methotrexate or methylprednisolone was used for graft versus host disease prophylaxis. Fourteen patients (77.8%) achieved neutrophil engraftment after a median time of 11 d, while four died of fungal sepsis. Resolution of fungal infection occurred in 60% of patients with proven/probable infections and in 100% with possible fungal infections. At a median follow up of 30 months, 11 patients (61.1%) were alive and well. Fludarabine-based conditioning regimens with PBSC transplantation can be used successfully in patients with aplastic anemia and fungal infections.



Joseph V, Kumar GS, Rajshekhar V.

Cerebrospinal fluid leak during cervical corpectomy for ossified posterior longitudinal ligament: incidence, management, and outcome

Spine (Phila Pa 1976). 2009 Mar 1;34(5):491-4

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

STUDY DESIGN: Retrospective. **OBJECTIVE:** To study the incidence of intraoperative cerebrospinal fluid (CSF) leak in patients with ossified posterior longitudinal ligament (OPLL) undergoing central cervical corpectomy (CC) and to describe a reliable technique for treating the leak after CC. **SUMMARY OF BACKGROUND DATA:** The rate of dural tear after CC is higher in patients with OPLL compared to other causes of cervical spinal stenosis. Various techniques have been described to deal with dural tears with CSF leak in OPLL. We assessed the efficacy of the repair technique used to deal with this complication in our patients with OPLL who had undergone CC. **METHODS:** A retrospective study was performed of all patients diagnosed with OPLL (n = 144) who had undergone CC between July 1992 and June 2007 (15 years). The dural defect was repaired with an onlay graft of crushed muscle/fascia and a layer of gelatin sponge. Bed rest and a lumbar subarachnoid drain were used for 5 days after surgery. **RESULTS:** Intraoperative CSF leak was noted in 9 patients (6.3%). The dural defects ranged in size from a few mm to about 15 mm (10-75 mm). All patients had a successful repair with no patient requiring reoperation for the CSF leak. **CONCLUSION:** Intraoperative CSF leak was encountered in 6.3% of patients undergoing CC for OPLL. A successful repair was achieved using fascial graft, gelatin sponge, lumbar CSF drainage, and bed rest.



Kannaiyan L, Chacko J, George A, Sen S.

Colon replacement of vagina to restore menstrual function in 11 adolescent girls with vaginal or cervicovaginal agenesis

Pediatr Surg Int. 2009 Aug;25(8):675-81. Epub 2009 Jun 20

Christian Medical College and Hospital, Vellore, India.

AIM: Cervicovaginal or vaginal agenesis with functioning endometrial tissue is rare. We report the construction of a colon conduit which is anastomosed to posterior uterine wall or upper vaginal pouch to allow menstruation. **MATERIALS AND METHODS:** We report seven girls with cervicovaginal agenesis and four with lower vaginal agenesis (aged 12-20 years) who presented with painful cryptomenorrhea. All the girls wanted to conserve their uterus and menstruate normally. A colon conduit was constructed for the egress of menstrual blood. The colon conduit was anastomosed to the posterior uterine wall in the seven girls with cervicovaginal agenesis and to the distended upper vaginal pouch in the four girls with vaginal agenesis. Utero-colonic neovaginal anastomosis was performed only after excising a circular portion of the posterior myometrium to prevent stenosis. **RESULTS:** The colon conduit functioned effectively, providing an egress for regular painless menstruation. One patient had stenosis of the perineal neovaginal orifice for which dilations were done. One girl has married and reports satisfactory intercourse. The mean follow up is 2.2 years. **CONCLUSIONS:** This group of patients forms a separate subgroup needing a conduit not only for sexual function but also for menstruation. However, if treated by the method described herein, they should be cautioned against pregnancy if they have cervicovaginal agenesis and against vaginal delivery if they have vaginal agenesis.



Kannaiyan L, Karl S, Mathai J, Chacko J, Sen S.

Congenital ureteric stenosis: a study of 17 children

Pediatr Surg Int. 2009 Jun;25(6):513-7. Epub 2009 May 13

Christian Medical College and Hospital, Vellore, India.



AIM: To review cases of congenital ureteric stenosis treated in the period between 1999 and 2007. We propose to analyze the type of presentation, management and results. **MATERIAL AND METHODS:** We report 17 children aged 20 days to 8 years with obstructive uropathy due to congenital stenosis of the ureter at one or more levels. This condition could be mistaken for the more common pelviureteric junction obstruction (PUJO) or primary megaureter, but it is a distinct and more serious anomaly. 13 of the 17 children had one or more associated anomalies, the most significant of which was a contralateral multicystic dysplastic kidney. Other associated anomalies included PUJO, megacalyx, vesicoureteric reflux, urogenital sinus, duplicate vagina, anorectal malformation and agenesis of the bladder. 16 children were symptomatic at presentation, with uremia (serum creatinine >1 mg/dl) in 5, while 1 was diagnosed antenatally. The correct preoperative diagnosis was made in only three children. Reconstruction included ureteroureteral anastomosis, ureteric reimplantation or ureteral substitution. **RESULTS:** There is follow up for 15 of the 17 patients. Length of follow up ranges from 1 to 7 years (average 2.7 years). There was satisfactory urinary drainage established in all 17 cases and uremia has resolved 3 of the 5 children. The children with solitary functioning kidney are at risk of uremia in later life. **CONCLUSION:** Congenital ureteric stenosis is a rare condition, but distinct anomaly with possible grave consequence and has been distinguished from other causes of congenital ureteric obstruction.



Keshava SN, Moses V, Surendrababu NR.

Cannula-Assisted and Transabdominal Ultrasound-Guided Hepatic Venous Recanalization in Budd Chiari Syndrome: A Novel Technique to Avoid Percutaneous Transabdominal Access

Cardiovasc Intervent Radiol. 2009 Jun 6. [Epub ahead of print]

Department of Radiology, Christian Medical College, Scudder Road, Vellore, TN, 632004, India, apar-na_shyam@cmcvellore.ac.in.

We describe a technique for facilitating recanalization of hepatic veins via the transjugular approach in patients with Budd Chiari syndrome, where a transjugular liver biopsy cannula provides support to the catheter-glide-wire combination and transabdominal ultrasound helps in positioning the tip of the cannula at the hepatic venous ostium.



Koshy CG, Eapen CE, Lakshminarayan R.

Transvenous Embolization to Treat Uncontrolled Hemobilia and Peritoneal Bleeding After Transjugular Liver Biopsy

Cardiovasc Intervent Radiol. 2009 May 30. [Epub ahead of print]

Department of Radiology, Christian Medical College, Vellore, Tamil Nadu, 632004, India, gkchiramel@gmail.com.

Hemobilia is one of the complications that can occur after a transjugular liver biopsy. Various treatment options have been described for the management of this condition, including transarterial embolization and open surgery. We describe a patient who developed uncontrolled hemobilia after a transjugular liver biopsy that required a transvenous approach for embolization and treatment purposes.



Kumar GS, Rajshekhar V.

Acute graft extrusion following central corpectomy in patients with cervical spondylotic myelopathy and ossified posterior longitudinal ligament



J Clin Neurosci. 2009 Mar;16(3):373-7. Epub 2009 Jan 12

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

We studied the influence of surgeon experience, number of levels operated and level of the lower mortise on acute graft extrusion in patients undergoing uninstrumented one-level to three-level central corpectomy (CC) for cervical spondylotic myelopathy (CSM) or ossified posterior longitudinal ligament (OPLL). Between 1992 and 2005, 410 consecutive patients underwent one-level to three-level CC with autologous iliac (in one-level and two-level corpectomy) or fibular (in three-level corpectomy) graft. The surgeon's experience was divided into four eras (I-IV; three eras of 100 consecutive patients each and the fourth with the last 110 patients). Eight patients (1.95%) experienced acute graft migration and seven required re-exploration. The graft extrusion rate in the first era was significantly higher than in the other three eras (6%, 1%, 1%, 0%; $p=0.01$) implying a significant learning curve. The extrusion rates for one-level, two-level and three-level CC were not significantly different (3%, 1.6%, 0% respectively; $p=0.3$). The extrusion rate for grafts ending in the C7 body (3/230, 1.6%) was not significantly different from the data for grafts ending in other bodies (5/180, 2.8%) ($p=0.23$). There is a low incidence of acute graft migration in patients undergoing uninstrumented CC with autologous bone grafts with a significant learning curve in avoiding graft extrusion.



Mangalraj AM, Muthukumar K, Aleyamma T, Kamath MS, George K.

Blastocyst stage transfer vs cleavage stage embryo transfer

J Hum Reprod Sci. 2009 Jan;2(1):23-6

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OBJECTIVE: To evaluate the efficacy of blastocyst transfer in comparison with cleavage stage embryo in a similar cohort of women. **DESIGN:** Retrospective analysis. **SETTING:** University teaching hospital. **MATERIALS AND METHODS:** Women aged 35 or less undergoing in vitro fertilization/intracytoplasmic sperm injection between January 2005 and December 2006 were included in the study. When four or more grade 1 embryos were observed on day 3, extended culture till day 5 was undertaken. This policy was compared with a cohort of women who had at least three grade 1 embryos on day 3 and who had undergone a cleavage stage embryo transfer during the time period of January 2002-December 2004. Primary outcome evaluated was implantation rate and clinical pregnancy rate. **RESULTS:** Group 1 consisted of 50 women who underwent extended culture and blastocyst transfer. Group 2 comprised of 85 women who had cleavage transfer. The implantation rate for embryos transferred in group 1 was significantly higher than that for embryos transferred on day 3 (40.16% vs 11.43%). The clinical pregnancy rate was also significantly better with blastocyst transfer as compared with cleavage stage transfer (62% vs 29.76%). Significantly fewer embryos were required for transfer at the blastocyst stage compared with day 3 transfer (2.54 vs 3.45). **CONCLUSION:** In selected cases, blastocyst transfer with fewer embryos can be performed with high implantation and clinical pregnancy rates. This policy could lead to a reduction in the incidence of higher-order pregnancies.



Mathews V, George B, Lakshmi KM, Viswabandya A, John JM, Sitaram U, Daniel D, Chandy M, Srivastava A.

Impact of pretransplant splenectomy on patients with beta-thalassemia major undergoing a matched-related allogeneic stem cell transplantation

Pediatr Transplant. 2009 Mar;13(2):171-6. Epub 2008 May 14

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Impact of pretransplant splenectomy in patients with beta-thalassemia major undergoing an allogeneic SCT has never been addressed. Twenty-seven class III patients (29 transplants) had a pretransplant splenectomy. The outcome of these 29 transplants was compared with 76 transplants in class III who did not have a splenectomy. Patients in the splenectomy group were older (11.7 +/- 5.0 vs. 8.5 +/- 3.5 yr; $p = 0.003$) and had a larger liver size (5.7 +/- 1.8 vs. 4.4 +/- 1.6 cm; $p = 0.000$). Splenectomized patients had a significantly faster time to ANC >500/mm(3) (15.4 +/- 5.9 vs. 17.5 +/- 4 days; $p = 0.002$) and platelet >20 000/mm(3) (22.5 +/- 6.7 vs. 32.5 +/- 13.6 days; $p = 0.000$). The splenectomized group had a significantly reduced requirement of blood transfusion in the first 100 days post-transplant (5.5 +/- 5.1 vs. 7.2 +/- 5.4 units; $p = 0.017$). There were significantly more deaths related to peri-transplant infections in the post-splenectomy group (24% vs. 5.3%; $p = 0.0001$). The graft rejections were comparable between the two groups (20.7% vs. 14.5%; $p = 0.55$). The incidence of acute and chronic GVHD, late infections, and deaths from RRT was not significantly different between the two groups. The five-yr EFS (31.0 +/- 8.6 vs. 60.8 +/- 5.98; $p = 0.003$) and OS (39.7 +/- 9.3 vs. 71.8 +/- 5.5; $p = 0.002$) was significantly worse in the splenectomized group. In conclusion, pretransplant splenectomy among patients with beta-thalassemia major was associated with faster engraftment, reduced transfusion support, a higher incidence of peri-transplant infection related deaths, and a reduced EFS and OS.



Mohan TS, Tharyan P, Alexander J, Raveendran NS.

Effects of stimulus intensity on the efficacy and safety of twice-weekly, bilateral electroconvulsive therapy (ECT) combined with antipsychotics in acute mania: a randomised controlled trial

Bipolar Disord. 2009 Mar;11(2):126-34.

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OBJECTIVES: To examine differences in speed of improvement and remission in people with mania undergoing bilateral, brief-pulse, twice-weekly electroconvulsive therapy (ECT) at stimulus intensities administered just above and 2.5 times their individually titrated seizure threshold. **METHODS:** Consecutive, eligible subjects with mania, prescribed ECT, were randomised to receive treatments at stimulus doses either just above or 2.5 times their individually titrated seizure thresholds. Main outcomes were the speed of improvement and remission as measured by the Young Mania Rating Scale (YMRS) and the Clinical Global Impressions-Improvement scale (CGI-I) and cognitive side effects assessed by the Mini-Mental State Exam, the Wechsler Memory Scale, and a scale for autobiographical memory. **RESULTS:** A total of 24/26 subjects (92.3%) given threshold ECT and 22/24 subjects (91.7%) given suprathreshold ECT were significantly improved [CGI = 2; odds ratio (OR) = 1.1, 95% confidence interval (CI): 0.1-8.4; $p = 1.0$] at the end of ECT. A total of 88% of the sample had remitted [YMRS < 10; threshold 23/26 (88.5%) versus suprathreshold 21/24 (87.5%)], with no significant differences between interventions (OR = 1.1, 95% CI: 0.2- 6.0; $p = 1.0$). The interventions did not differ significantly in the time or number of ECT treatments required for improvement or remission. Both interventions were equally safe. **CONCLUSIONS:** Bilateral, twice-weekly ECT delivered at stimulus intensities just above individually titrated seizure threshold was as effective and safe as ECT administered at stimulus intensities 2.5 times seizure threshold in rapidly resolving the symptoms of acute mania.



Moorthy RK, Rajshekhar V.

Changes in cervical spine curvature in pediatric patients following occipitocervical fusion

Childs Nerv Syst. 2009 Aug;25(8):961-7. Epub 2009 Feb 19

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OBJECTIVE: The study aims to assess changes in cervical spine curvature following occipitocervical fusion (OCF) in the pediatric population. **METHODS:** In a retrospective study, the angle of sagittal curvature and whole cervical spine alignment were determined in the preoperative, immediate postoperative, and follow-up radiographs in 14 patients (<20 years of age) who underwent OCF for developmental atlantoaxial instability between 1995 and 2006. At follow-up, the mean angle of sagittal curvature showed a statistically significant increase from 22+/-10.1 degrees immediately following surgery to 35.9+/-18 degrees at follow-up ($p = 0.001$). Six patients had exaggerated lordosis (defined as >10 degrees increase in the angle of sagittal curvature). The sagittal curvature angle did not show any worsening in seven patients following removal of the implant. **CONCLUSIONS:** OCF in the pediatric population can result in an increase in the lordotic curvature of the cervical spine that might stabilize following removal of the metal implant within a year of surgery.



Moses V, Mahendri NV, John G, Peter JV, Ganesh A.

Early hypocaloric enteral nutritional supplementation in acute organophosphate poisoning--a prospective randomized trial

Clin Toxicol (Phila). 2009 May;47(5):419-24

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INTRODUCTION: Early institution of enteral feeds may be associated with improved outcomes in the critically ill. This study evaluated the effect of hypocaloric enteral nutritional supplementation in acute organophosphate(OP)-poisoned patients requiring invasive mechanical ventilation. **SETTINGS AND DESIGN:** Prospective randomized controlled trial conducted in the medical intensive care unit (ICU) of a tertiary care university teaching hospital. **PATIENTS AND METHODS:** During a 13-month period, 87 OP-poisoned patients were admitted. Twenty-seven patients who were not ventilated were excluded. Thirty patients were randomized to the control arm and 29 to the intervention arm. The intervention arm received hypocaloric nasogastric feeds within 48 h of intubation whilst the control arm received intravenous fluids. Primary outcome was infectious complications. Secondary outcomes included hospital mortality, duration of ventilation, ICU stay, and hospital stay. **RESULTS:** An infectious complication occurred in 14 patients (48%) in the intervention group and 15 patients (50%) in the control group ($p = 0.898$). Three patients in each group died ($p = 0.965$). Duration of ventilation ($p = 0.19$) and ICU stay ($p = 0.41$) were similar. Duration of hospital stay was shorter in the control group ($p = 0.05$). Gastric stasis occurred in two patients (6.9%) receiving enteral feeds. Feeding related complications were less frequent than in other published trials. **CONCLUSIONS:** In OP-poisoned patients, early hypocaloric enteral feeding was not associated with improvements in clinical endpoints, albeit longer hospital stay was observed in the enterally fed group. Feeding related complications were infrequent. Further studies would help define the status of early enteral feeding in this subset of patients.



Narang A, Bose A, Pandit AN, Dutta P, Kang G, Bhattacharya SK, Datta SK, Suryakiran PV, Delem A, Han HH, Bock HL.

Immunogenicity, reactogenicity and safety of human rotavirus vaccine (RIX4414) in Indian infants

Hum Vaccin. 2009 Jun;5(6):414-9. Epub 2009 Jun 15

Christian Medical College and Hospital, Vellore, India.

Aim: This study was undertaken to assess the immunogenicity, reactogenicity and safety of two doses of an oral live-attenuated human rotavirus vaccine, strain RIX4414 (Rotarix™) in an Indian setting. **Patients and Methods:** Healthy infants (N=363), approximately 8 weeks of age were enrolled to receive two doses of RIX4414 vaccine (n=182) or placebo (n=181) separated by one month. To assess the immune response, blood samples were



taken before vaccination and one month post-dose 2 of RIX4414/placebo. Solicited symptoms were collected for 8-days post each dose and safety data was collected throughout the study. Results: The seroconversion rate observed one month post-dose 2 in the RIX4414 group 58.3% [95% CI: 48.7; 67.4] was significantly higher when compared to the placebo group 6.3%; [95% CI: 2.5; 12.5]. The reactogenicity and safety profile was similar for both groups. Conclusions: Two doses of RIX4414 (Rotarix™) were immunogenic, had a good safety profile and were well-tolerated when administered to healthy Indian infants.



Narsing Rao L, Jacob JJ, Paul TV, Rajarathinam S, Thomas N, Seshadri MS

Effects of pioglitazone on menstrual frequency, hyperandrogenism and insulin resistance in adolescents and young adults with polycystic ovary syndrome

J Pediatr Adolesc Gynecol. 2009 Apr;22(2):91-5

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

STUDY OBJECTIVE: To study the clinical, metabolic and adverse effects of pioglitazone over a period of 6 months in obese adolescent and young adults with polycystic ovary syndrome. **DESIGN:** This was an open labeled study. Each patient served as her own control. **SETTING:** Outpatient department of a university affiliated teaching hospital. **PARTICIPANTS:** Unmarried women (age 15-25 yrs) with chronic anovulatory cycles and obesity, and with clinical evidence of hyperandrogenism. **INTERVENTIONS:** Pioglitazone at a dose of 30 mg once daily for a period of 6 months along with dietary advice and exercise. **MAIN OUTCOME MEASURES:** Resumption of normal menstrual cycles, clinical improvement in hyperandrogenism and changes in insulin resistance measured by fasting glucose insulin ratios. **RESULTS:** Twenty-two women were enrolled. At the end of the study period 91% of the subjects had regularization of menstrual cycles. There was no change in the modified Ferriman-Gallwey hirsutism scores. Decline in fasting insulin levels at the end of the study was 45.6% from baseline along with significant increase in the fasting glucose/insulin ratio from baseline. **CONCLUSION:** Administration of pioglitazone for 6 months along with advice about diet and physical activity in obese adolescents and young adult women with polycystic ovary syndrome results in significant improvements in menstrual frequency. There is a significant improvement in insulin resistance using the G/I ratio ($<7.5 \text{ mg/10}^{-4} \text{ U}$) as the biochemical marker.



Prasad E, Viswanathan PN, Rangad VF, Pavamani S, Ram TS.

Maximum tolerated dose and early response - results of a phase I trial of Paclitaxel and Cisplatin with radiation therapy in carcinoma of the cervix(1)

Clin Oncol (R Coll Radiol). 2009 Aug;21(6):488-93. Epub 2009 Apr 21.

Department of Radiation Oncology, Christian Medical College, Vellore, Tamilnadu, India.

AIMS: Cisplatin-based chemotherapy with radiotherapy is currently the standard treatment for locally advanced carcinoma of the cervix. Recent studies have shown a better response with the addition of newer chemotherapeutic agents. The aim of this phase I study was to establish the maximum tolerated dose (MTD) of paclitaxel in combination with cisplatin as a radiosensitiser along with radiation therapy in the treatment of carcinoma of the cervix and to analyse the toxicity profile of the combination regimen. **MATERIALS AND METHODS:** In total, 21 newly diagnosed patients with squamous cell carcinoma of the cervix, International Federation of Gynecology and Obstetrics stage IB to IIIB were included in this trial. All patients received external beam radiation therapy to the pelvis (50Gy in 25 fractions) delivered by conventional four-field box technique followed by low dose rate brachytherapy. Concurrent chemotherapy was administered with weekly cisplatin (30mg/m²) and an escalating dose of weekly paclitaxel starting at 10mg/m² up to 50mg/m² (according to the modified



Fibonacci series). **RESULTS:** The MTD of weekly paclitaxel was found to be 40mg/m². The dose-limiting toxicity that occurred in our patients at a dose of 50mg/m² weekly paclitaxel was grade 3 proctitis and vaginitis. **CONCLUSION:** In this phase I trial of concurrent radiation and combination chemotherapy with weekly paclitaxel and cisplatin (30mg/m²/week), the MTD of paclitaxel was found to be 40mg/m². This combination was feasible, with an acceptable toxicity profile.



Rajasekar R, Mathews V, Lakshmi KM, George B, Viswabandya A, Chandy M, Srivastava A.
Cellular immune reconstitution and its impact on clinical outcome in children with beta thalassemia major undergoing a matched related myeloablative allogeneic bone marrow transplant
Biol Blood Marrow Transplant. 2009 May;15(5):597-609
Department of Haematology, Christian Medical College, Vellore, India.

We have prospectively analyzed cellular immune reconstitution (IR) in 63 consecutive pediatric patients with beta thalassemia major who underwent an HLA matched related allogeneic bone marrow transplant (BMT). Samples from bone marrow graft and posttransplant peripheral blood samples from recipients at specified time points were assessed for IR of cellular subsets. The median age of the cohort was 7 years, and there were 37 (59%) males. A CD34 cell dose above the median value of $7.3 \times 10^6/\text{kg}$ had a lower incidence of bacterial ($P = .003$) and fungal ($P = .003$) infections in the posttransplant period, and was not associated with an increased risk of graft-versus-host disease (GVHD). Among cases that did develop grade II-IV GVHD the absolute CD8 (116 versus 52 cells/microL, $P = .012$), CD8 naive (74 versus 9 cells/microL, $P = .005$), and CD8 memory counts (44 versus 21 cells/microL, $P = .010$) were significantly higher on day 15. Fifteen patients (24%) rejected their graft (7 primary and 8 secondary). The day 28 natural killer (NK) cell count was significantly associated with secondary graft rejection, event-free survival (EFS), and overall survival (OS) ($P = .044$, .013, and .034, respectively). On a multivariate analysis, patients with a day 28 NK cell count below the median value of 142/microL had a significantly higher rejection rate (hazard ratio [HR] = 11.1, $P = .038$) and a lower EFS (HR = 16.3, $P = .034$). (59%) males. A CD34 cell dose above the median value of $7.3 \times 10^6/\text{kg}$ had a lower incidence of bacterial ($P = .003$) and fungal ($P = .003$) infections in the posttransplant period, and was not associated with an increased risk of graft-versus-host disease (GVHD). Among cases that did develop grade II-IV GVHD the absolute CD8 (116 versus 52 cells/microL, $P = .012$), CD8 naive (74 versus 9 cells/microL, $P = .005$), and CD8 memory counts (44 versus 21 cells/microL, $P = .010$) were significantly higher on day 15. Fifteen patients (24%) rejected their graft (7 primary and 8 secondary). The day 28 natural killer (NK) cell count was significantly associated with secondary graft rejection, event-free survival (EFS), and overall survival (OS) ($P = .044$, .013, and .034, respectively). On a multivariate analysis, patients with a day 28 NK cell count below the median value of 142/microL had a significantly higher rejection rate (hazard ratio [HR] = 11.1, $P = .038$) and a lower EFS (HR = 16.3, $P = .034$).



Regi A, Alexander N, Jose R, Lionel J, Varghese L, Peedicayil A.
Amnioinfusion for relief of recurrent severe and moderate variable decelerations in labor
J Reprod Med. 2009 May;54(5):295-302
Department of Obstetrics and Gynecology, Christian Medical College Hospital, Vellore, India. annieregi@cmcvellore.ac.in

OBJECTIVE: To determine whether intrapartum amnioinfusion (AI) relieves recurrent moderate and severe variable decelerations in laboring women with clear or grade I meconium-stained amniotic fluid and reduces cesarean section rate for fetal distress. **STUDY DESIGN:** A randomized controlled trial was conducted in labor



unit of Christian Medical College Hospital, Vellore, India, between October 2003 and September 2004. Women were randomized to receive AI (group I) and not to receive it (group II). RESULTS: A total of 150 women (75 in each group) were included in the study. There was significant relief of variable decelerations in group I and no difference in overall cesarean section rate but significant reduction in cesarean section rate for fetal distress in group I, and significant reduction in cesarean section rate for fetal distress in nulliparous women of group I. Neonatal acidemia was also significantly reduced in the nulliparous women receiving AI. The duration of maternal postpartum hospital stay was significantly reduced in group I. There were no adverse maternal or neonatal outcomes. CONCLUSION: AI was a beneficial therapeutic intervention in women patients showing fetal distress in first stage of labor, and it reduced cesarean section for fetal distress and neonatal acidemia.



Thomas S, Vijaykumar C, Naik R, Moses PD, Antonisamy B.

Comparative effectiveness of tepid sponging and antipyretic drug versus only antipyretic drug in the management of fever among children: a randomized controlled trial

Indian Pediatr. 2009 Feb;46(2):133-6.

Department of Child Health Nursing, Child Health Department and Department of Biostatistics, Christian Medical College, Vellore, India.

OBJECTIVE: To compare the effectiveness of tepid sponging and antipyretic drug versus only antipyretic drug among febrile children. DESIGN: Randomized controlled trial. SETTING: Tertiary care hospital. PARTICIPANTS: 150 children 6 mo - 12 yr age with axillary temperature 101F. INTERVENTION: Tepid sponging and antipyretic drug (Paracetamol) (n=73) or only antipyretic drug (Paracetamol) (n=77). MAIN OUTCOME MEASURES: Reduction of body temperature and level of comfort. RESULTS: The reduction of body temperature in the tepid sponging and antipyretic drug group was significantly faster than only antipyretic group; however, by the end of 2 hours both groups had reached the same degree of temperature. The children in tepid sponging and antipyretic drug had significantly higher discomfort than only antipyretic group, but the discomfort was mostly mild. CONCLUSION: Apart from the initial rapid temperature reduction, addition of tepid sponging to antipyretic administration does not offer any advantage in ultimate reduction of temperature; moreover it may result in additional discomfort.



MISCELLANEOUS

Fletcher GJ, Christopher S, Gnanamony M.

Why does size matter for viruses--a new paradigm on viral size

Med Hypotheses. 2009 Aug;73(2):133-7. Epub 2009 Apr 17.

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Size and shape are the two immutable laws that govern all life forms including viruses. In this study we postulate and evaluate the hypothesis that there exists a strong association between viral geometry and features of viral disease outbreaks. Data on viral disease outbreaks were retrieved from WHO and CDC public domains for a period of twelve years to assess the relationship between viral size and epidemiological factors such as number of outbreaks, case fatality rate, proportion of emerging infectious diseases and transmission routes. We observed a significant correlation between viral size and frequency of disease outbreaks ($\rho = -0.82$, $p = 0.004$), case fatality rate ($\rho = 0.48$, $p = 0.03$) and genome size ($r = 0.79$, $p < 0.001$). Viral sizes were significantly different



among diverse transmission routes ($p < 0.001$). The proportion of emerging infectious diseases were significantly different between viruses with size $< 10(5)$ and $\geq 10(5)$ nm (3) (21% vs 64%, $p = 0.046$). In conclusion, this preliminary evidence shows that viral size plays a substantial role in the epidemiology of viral diseases. Our data suggests that small size viruses are associated with more number of outbreaks than large size viruses. Large size viruses are associated with high case fatality rate and can be potential emerging pathogens. Viral size may be crucial for niche selection and specified transmission routes in the susceptible host. Hence, viral geometry should not be neglected in epidemiology and modeling of viral diseases, and planning vaccine strategies.



Holla SJ, Ramachandran K, Isaac B, Koshy S.

Anatomy education in a changing medical curriculum in India: Medical student feedback on duration and emphasis of gross anatomy teaching

Anat Sci Educ. 2009 Jul;2(4):179-83

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

Authors report here a survey of medical student feedback on the effectiveness of two different anatomy curricula at Christian Medical College, Vellore, India. Undergraduate medical students seeking the Bachelor in Medicine and Bachelor in Surgery (M.B.B.S.) degrees were divided into two groups by the duration of their respective anatomy curriculum. Group 1 students had completed a longer, 18-month curriculum whereas Group 2 counterparts followed a shorter, 12-month curriculum. Students' responses to a questionnaire were studied. Analysis of feedback from Groups 1 and 2 contrasted the effectiveness of the two anatomy curricula. The coverage of gross anatomy was rated adequate or more than adequate by 98% of Group 1 and 91% of Group 2. A desire for greater emphasis on gross anatomy teaching was expressed by 24% of Group 1 and 50% of Group 2 ($P = 0.000$). Two-thirds of all students felt that the one-year program was not adequate, and 90% of Group 1 and 74% of Group 2 felt that clinically oriented anatomy teaching required more emphasis. Dissection was helpful or very helpful for 94% of Group 1 and 88% of Group 2. This study suggests that a better understanding of gross anatomy was gained from a course of longer duration (18 months with 915 contact hr vs. 12 months with 671 contact hr). Students who completed the longer anatomy course had greater appreciation of the need for clinically oriented anatomy teaching and dissection. Anat Sci Ed, 2009. (c) 2009 American Association of Anatomists.



Jacob R.

Pro: anesthesia for children in the developing world should be delivered by medical anesthetists

Paediatr Anaesth. 2009 Jan;19(1):35-8

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Outcomes from pediatric surgery when carried out by trained pediatric anesthetists are excellent. This is not the case when the anesthesia provider is poorly trained. The presence of pediatric anesthetists is not only the norm but considered mandatory for children below the age of 2-3 years in developed countries. There are many reasons why trained anesthetists are not readily available in developing countries - migration to greener pastures, inadequate training facilities, poor remuneration and support services being some of them. These problems should be addressed but safety of the children should not be compromised. One should not condone poor standards to deprive children of safe anesthesia and the caregiver of much needed self-respect.



Thomas TH, Devakumar D, Purnima S, Ravindran BP.

The adaptation of megavoltage cone beam CT for use in standard radiotherapy treatment planning

Phys Med Biol. 2009 Apr 7;54(7):2067-77. Epub 2009 Mar 13

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

Potential areas where megavoltage computed tomography (MVCT) could be used are second- and third-phase treatment planning in 3D conformal radiotherapy and IMRT, adaptive radiation therapy, single fraction palliative treatment and for the treatment of patients with metal prostheses. A feasibility study was done on using MV cone beam CT (CBCT) images generated by proprietary 3D reconstruction software based on the FDK algorithm for megavoltage treatment planning. The reconstructed images were converted to a DICOM file set. The pixel values of megavoltage cone beam computed tomography (MV CBCT) were rescaled to those of kV CT for use with a treatment planning system. A calibration phantom was designed and developed for verification of geometric accuracy and CT number calibration. The distance measured between two marker points on the CBCT image and the physical dimension on the phantom were in good agreement. Point dose verification for a 10 cm x 10 cm beam at a gantry angle of 0 degrees and SAD of 100 cm were performed for a 6 MV beam for both kV and MV CBCT images. The point doses were found to vary between +/-6.1% of the dose calculated from the kV CT image. The isodose curves for 6 MV for both kV CT and MV CBCT images were within 2% and 3 mm distance-to-agreement. A plan with three beams was performed on MV CBCT, simulating a treatment plan for cancer of the pituitary. The distribution obtained was compared with those corresponding to that obtained using the kV CT. This study has shown that treatment planning with MV cone beam CT images is feasible.



ABSTRACTS NOT AVAILABLE

Gopalakrishnan G.

Urological education in India: A status report

Indian J Urol. 2009 Apr;25(2):251-3

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Rajinikanth J, Paul MJ, Abraham DT, Ben Selvan CK, Nair A.

Surgical audit of inadvertent parathyroidectomy during total thyroidectomy: incidence, risk factors, and outcome

Medscape J Med. 2009;11(1):29. Epub 2009 Jan 28.

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Roshan J, Lokhandwala Y.

The road not taken

Pacing Clin Electrophysiol. 2009 Jun;32(6):788-90

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Singh JC, Dahm P.

Evidence-based urology in practice: what are levels of evidence?

BJU Int. 2009 Apr;103(7):860-1. Epub 2009 Feb 23.

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



Thomas N.

Reversibility of neuronal damage in diabetes: The search for a newer therapeutic paradigm

Indian J Med Sci. 2009 Apr;63(4):129-30

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