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ABSTRACTS
Hypertension in children – Roles of family history

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Background & objectives: This study was done to compare the blood pressure (BP) profiles in children of hypertensive and normotensive parents and to detect the prevalence of hypertension in these children.

Methods: A total of 50 children of hypertensive parents and 150 children of normotensive parents were included as cases and controls, respectively. BP of these children and parents was recorded and the BMI of these children was calculated.

Results: Prevalence of hypertension in children was 18.5 per cent. Of the hypertensive children, 40.5 per cent were of hypertensive parents, and remaining 59.5 per cent of normotensive parents. Statistically, this was not significant. However, hypertension in children was significantly associated with obesity (BMI>2.26 g/cm²).

Interpretation & conclusions: Family history of hypertension in parents does not seem to play any role in the prevalence of hypertension in children, which is contrary to the earlier studies. However, obesity was a significant contributor in the prevalence of hypertension in the children, in our study.

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Pulmonary function tests in rural women exposed to biomass fumes

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Background & objectives: To study pulmonary function of women exposed to smoke of organic fuels and find out any derangement of the lung function and to suggest measures to prevent it.

Methods: Women residing in a small village (Agashivnagar, Karad, Maharashtra) free from all sorts of industrial air pollution, were selected as the study sample (n=101). These women were exposed to biomass fumes during cooking. A group of women (n=64) of similar age but using LPG or other fuels for cooking from the same area were selected as control group (not exposed to biomass fumes). Pulmonary function test (PFT) parameters (FVC, FEV₁, PEFR and MVV) were studied in both the groups by using a spirometer [computerized Spirometer-"MEDSPIROR" (RMS Chandigarh, India)].

Results: The findings of PFT showed that FVC, FEV₁, PEFR and MVV all were reduced in the subject group compared to the control group and the difference was statistically significant (P<0.05).

Interpretation & conclusions: Similar to earlier studies done in India and abroad we also found an impairment of the lung function in women exposed to biomass fumes compared to those not exposed to such fumes. Some measures should be taken to prevent such exposure to the fumes by proper ventilation, such as using a chimney to vent out the fumes, or by using fuels that do not produce such fumes.

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Effect of an interventional educational programme on the knowledge, attitudes & practice among type-I diabetics in a tertiary care hospital

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**Background & objectives:** To evaluate the effect of an interventional educational programme on the compliance to insulin regimen, glycaemic control and, knowledge, attitude and practice (KAP) regarding diabetes mellitus among type-I diabetics.

**Methods:** Type-I diabetics (n=67) attending JIPMER diabetic OPD were recruited for the study. KAP questionnaire was administered and blood samples were taken to determine blood sugar, HbA1c, insulin and C-peptide level. They were educated about the disease, drug and its storage using flip charts and pamphlets for the next 6 months, after which the KAP questionnaire was re-administered and blood parameters were measured again.

**Results:** The compliance to the insulin regimen, as reflected by the plasma insulin level, increased from 81 to 84 per cent after the intervention. Post-prandial blood glucose levels (mean ± S.D) decreased significantly from 270.07 ± 103.22 mg/dl to 235.64 ± 67.92 mg/dl (*P*<0.005). The KAP scores (mean ± S.D) improved significantly from 30.07 ± 4.71 to 40.07 ± 3.32 (*P*<0.001). The number of patients storing the vials in mud pots instead of at room temperature rose from 17 to 53 per cent after the programme. There was no significant decrease in the fasting blood glucose or the glycosylated haemoglobin levels.

**Interpretation & conclusions:** The diabetes education programme led to an improvement in the patient’s knowledge and attitude. More such programmes are necessary to have better clinical outcomes of the treatment.

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Rapid drug susceptibility testing (DST) of *Mycobacterium tuberculosis* by a resazurin based method

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**Background & objectives:** There has been an increase in the number of tuberculosis cases worldwide. Multi-drug resistant tuberculosis (MDR-TB) has become a major public health problem. Early diagnosis of MDR-TB is essential for starting an effective treatment regimen and reducing its transmission in the population. This study was carried out to evaluate a calorimetric method using Resazurin for rapid detection of drug resistant organisms and to compare the results with the proportion method.

**Methods:** A total of 20 clinical isolates of *Mycobacterium tuberculosis* were included in the study. The proportion method and REMA plate method for the drug sensitivity were done as per standard recommendations. REMA is based on the reduction os Resazurin (coloured indicator) added to the Middlebrook agar after *M. tuberculosis* has been exposed *in vitro* to different antibiotics. Resistance is indicated by a colour change (blue to pink) which is directly proportional to the number of viable *Mycobacterium* in the medium.

**Results:** The results of REMA were concordant with that of the proportion method (PM) but time taken for REMA was only one week when compared to one month by PM. It is also a cost-effective and user-friendly method.

**Interpretation & conclusion:** Though results are encouraging, more work needs to be done for testing the reliability of this method.

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Paraoxonase genotypes in relation to coronary artery diseases

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Background & objectives: Mortality in India from coronary artery disease (CAD) has doubled in the last 20 years, and it may become the world’s CAD capital by 2020. Activity of serum paraoxonase, an HDL-associated enzyme, is believed to be an independent risk factor for CAD. It is involved in prevention of LDL oxidation, degradation of pro-inflammatory oxidized LDL and organophosphate detoxification. We examined the effects of a C/T polymorphism at position -108 of PON1, the chief paraoxonase gene. AIM-To correlates PON1 genotype (CC, CT, TT) with lipid profile and risk of CAD.

Methods: The study involved 51 angiographically-proven CAD patients and 55 normal controls. Genotyping was done though PCR-RFLP. Serum lipid levels were quantified, and sandwich ELISA was used to measure oxidized LDL. Paraoxonase activities were measured spectrophotometrically with paraoxon as substrate.

Results: The allele distribution was seen to be in Hardy-Weinberg equilibrium, and significant risk association was seen for low-expressing genotypes (CT and TT, odds ratios 3.448 and 3.852). Serum paraoxonase activity was significantly higher in controls than patients ($P<0.001$), and followed a CC>CT>TT pattern ($P<0.001$). HDL levels also were greater in controls ($P<0.001$). Oxidized LDL had no strong correlations, but ratio of oxidized to normal LDL was lower in controls ($P=0.005$) and varied inversely with HDL levels ($P<0.011$).

Interpretation & conclusion: High-expressing PON1 genotype (CC) protects against development of CAD. The oxidised: normal LDL ratio may also be an important marker for CAD risk. Further studies are warranted.

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Incidence of Hashimoto’s thyroiditis at a hospital over a period of five years & its correlation to the clinical presentation & hormone status

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Background & objectives: To assess the incidence of Hashimoto’s thyroiditis at PSG IMS and R, Coimbatore, over a period of 5 years (2000-2005) and its correlation with age, sex, clinical features and hormonal status of the patient.

Methods: The cases diagnosed as Hashimoto’s thyroiditis were retrieved from the records of both histopathology and cytology divisions of Pathology Department. The clinical history and other data such as age, sex, and hormonal status were retrieved from the Medical Records Department (MRD).

Results: It was found that the incidence of Hashimoto’s thyroiditis was 8.4 per cent. The most common age group of presentation was 31-40 yr (32.63%) followed by 21-30 yr (23.16%). Patients presented with multinodular pattern more commonly (43 out of 95 cases, 45.26%) and only 32.6 per cent (31 out of 95 cases) had diffuse enlargement.

Interpretation & conclusion: From the study we infer that at our institute, the incidence of Hashimoto’s thyroiditis was 8.4 per cent and it was seen in younger age group and with multinodular enlargement against middle age and older age group and diffuse enlargement quoted in the literature. Most of the patients seek treatment at a later stage of the disease.

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Evaluation of oxidative stress & nitric oxide levels in pancreatitis

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Background & objectives: The role of nitric oxide and oxidative stress has been shown in the pathological process of pancreatitis. But the effect over distal organ during inflammation and in multiorgan failure is limited. Hence, we have taken up this study to evaluate on oxidative stress and nitric oxide as a prognostic marker in pancreatitis.

Methods: Patients admitted in P.S.G. Hospitals and diagnosed having pancreatitis were included for the study. Control group consisted of healthy volunteers. Blood samples obtained from these patients were analyzed for serum TBARS, serum SOD and plasma nitric oxide apart from the routine analysis of amylase, blood glucose, and LFT.

Results: The study indicates a significantly high level of serum TBARS and nitric oxide level in pancreatitis compared to control group. Among the pancreatitis patients, alcohol related group showed a very high serum TBARS and plasma nitric oxide. A significant high level of SOD was seen drug induced type and in idiopathic pancreatitis, whereas serum SOD level was found to be significantly low in alcoholic and CBD stone related pancreatitis.

Interpretation & conclusions: Patients who develop multi organ failure among alcoholic pancreatitis showed high serum TBARS and plasma nitric oxide levels and a low serum SOD level indicating that all these parameters can be used as a tool to assess the prognosis in pancreatitis. Also there is severe depletion of antioxidant like SOD in these cases; hence, the use of therapeutic antioxidants like superoxide mimetics to reduce the damage in these patients may further be evaluated.

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Comparative evaluation of single dose oral pantoprazole & erythromycin on gastric pH & volume

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Background & objectives: Pulmonary aspiration of gastric contents is one of the most feared complications of anaesthesia. Over the year a variety of measures have been taken to guard against regurgitation and aspiration, including preoperative fasting, use of prokinetic agents, antacids, H₂ receptor antagonists and proton pump inhibitors. Recently, erythromycin, in sub-therapeutic doses, has been shown to alter gastric volume and acidity. This study was planned to compare the efficacy of single oral dose of erythromycin with pantoprazole on preoperative gastric volume and pH in patients undergoing elective surgery under general anaesthesia.

Methods: Eighty ASA I-II patients of either sex scheduled for elective surgery under general anaesthesia (GA) were grouped randomly according to block randomization into 2 groups of 40 patients each. At least one h prior to induction of anaesthesia, 40 mg oral pantoprazole was given to group I and 250 mg oral erythromycin to group II. After induction of anaesthesia, gastric content volume and pH were measured.

Results: Gastric content volume was 11.85 ± 11.45 ml in group I and 14.76 ± 8.81 ml in group II. This difference was statistically not significant. Gastric content pH was 4.93 ± 2.03 in group I and 3.48 ± 1.85 in group II. This difference in gastric content pH was statistically significant.

Interpretation & conclusions: Both pantoprazole and sub-therapeutic dosage of erythromycin equally reduced gastric content volume but the increase in pH by pantoprazole was significantly more than by erythromycin.

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Application of a semi quantitative scale for the determination of psychiatric illnesses in 1 & 2 degree relatives of schizophrenia patients

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Background & objectives: The objectives of the study were to formulate and validate a “semi–quantitative scale”, and calculate the prevalence of psychiatric illnesses in 1st and 2nd degree relatives of schizophrenia patients as compared to normal (non-psychiatric) controls.

Methods: A pilot phase was carried out to formulate a “semi-structured scale with a scoring system” for assessing five psychiatric illnesses [psychosis, bipolar, depression, obsessive compulsive disorder (OCD), substance abuse] in relatives on the basis of information given by the caregiver. To validate the scale, 100 patients were blindly diagnosed by the scale and the diagnosis was tallied to the psychiatrist’s diagnosis. Prevalence of these 5 morbidities was then evaluated in families of 100 schizophrenics by applying the scale to their caregivers. This was compared to the prevalence in control group (families of 100 individuals with no psychiatric illness).

Results: The “scale” showed a high sensitivity of up to 90 per cent. The prevalence of psychiatric morbidities in schizophrenic families (9.56%) was significantly higher ($P<0.05$) than those of controls (3.63%). Prevalence for individual disorders also showed significant differences [psychosis, boarder line personality disorder (BPD) and suicidality were more common in cases, while depression was not].

Interpretation & conclusion: The scale thus devised may be an efficient tool for evaluation of psychiatric illnesses in families, which are significantly greater in families of schizophrenics as compared to normal controls.

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Evaluation of psychological health of medical students – A cross sectional study

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Background & objectives: Health of medical students is of primary concern as they are future doctors; however studies pertaining to college environment and stress are sparse in literature. This study was carried out in two types of institutions: a uniform services institution and a civil medical college, to compare the mental health of medical students from two different college environments.

Method: A total of 240 students (120 from each college) were randomly selected from the attendance roster for the survey. Students of 1st, Vth and IXth terms were selected for mental health evaluation. Standardized questionnaires were given to evaluate anxiety, depression and general mental health. Data so generated were analysed with statistical evaluation SPSS software.

Results: Findings revealed significant differences between the two groups on BDL, HADS and GHQ. Non parametric test was carried out on BDL. Findings are discussed on the basis of available literature in respect to mental health of medical students.

Interpretation & conclusions: Mental health of medical students was better in service institute as compared to civil medical college. Findings are concerned with academic and college environment, stressing upon the fact that they have a major effect on the mental health of medical students. The stress level of the students varied according to the terms they belonged to.

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Epidemiology & clinical picture of hypokalemia (HK) in a tertiary care hospital in western Orissa

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Background & objectives: HK is the most common electrolyte abnormality encountered in hospitalized patients. The purpose of this work was to study the incidence, clinical picture, and laboratory parameters of HK in hospitalized patients in western Orissa.

Methods: The materials for this cross-sectional hospital-based study constituted 60 cases of HK admitted to medicine ward of V.S.S. Medical College, Sambalpur during 1st May to 30th June, 2006. Serum Na, K, Mg levels were measured. ECG recordings were done in patients suffering from hypokalemic periodic palsy. Cases with serum potassium level <3.5 mmol/l were designated as HK.

Results: Male preponderance over female (2.3:1) was seen in total cases of HK. In males, the incidence of HK was mostly found in the working age groups (36-45 yr). 63.33 per cent of patients of HK had periodic palsy. Vomiting (40%), heavy carbohydrate meal (poor people) (93.3%) and rest after physical exertion (48.3%) contributed significantly to development of HK. Commonest clinical presentations were muscle weakness (63.3%), vomiting (40%), diarrhoea (11.6%), and altered sensorium (26.6%). Of the 60 cases of HK, 11.66 per cent were mild, 30 per cent were moderate and 58.33 per cent were severe. Refractory cases of HK (40%) were found to be associated with hypomagnesaemia.

Interpretation & conclusions: Our study concludes HK and associated paralysis was most common morbidity found in hospitalized patient. Our cases seem to be relating to environmental and host factors rather than heredity (western journal). So, further study with larger series and more sophisticated investigations with genetic attribute are required to pinpoint the exact mechanism.

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Urinary sediment analysis – comparison between bright field microscopy & supra-vital staining

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Background & objectives: To assess the utility of supravital staining in comparison with bright field microscopy in urinary sediment analysis and to check the efficiency of supravital staining in cellular element differentiation.

Methods: A total of 200 urine samples, collected from the admitted patients for routine urine analysis were centrifuged at 1500 rpm for 15 min. The sediment was divided into 2 parts. One was used for bright field microscopy and other part was stained with supravital stain. The supravital stain was prepared by mixing 1 per cent crystal violet and 0.5 per cent saffranin. The urinary sediment and the stain were mixed in 6:1 proportion.

Results: Observations were divided in 3 groups namely bright field better, supra-vital better and equal detection depending on number of elements observed by each method. Pus cells were detected in 79 per cent of total samples where as RBCs were observed in 37.5 per cent of cases. Squamous cells, transitional epithelial cells and casts were observed in 47.5, 27.5 and 17.5 per cent respectively. Both the methods were equivocal in detection of pus cells and casts if stain precipitate was avoided. Supra-vital detected squamous cells (28.5%), transitional cells (18%) and RBCs (18%) better as compared to bright field which detected the same better in 13, 5.5 and 9.5 per cent respectively.

Interpretation & conclusions: Supra-vital staining has an edge over bright field in detecting and differentiating cellular elements and is also cost-effective. Hence it can be incorporated in routine urinary sediment analysis.

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Daily co-trimoxazole prophylaxis on the morbidity & mortality of HIV infected children in eastern India

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Background & objectives: Although JOINT / WHO / UNAIDS / UNICEF has advocated co-trimoxazole (CTMX) prophylaxis as a part of their guideline for early care and treatment of HIV infected children, not much has been done in our local settings regarding the efficacy of the prophylaxis. CTMX can improve survival independent of anti-retroviral drugs, hence making it important. This study was directed to evaluate the success or failure of this cost-effective prophylaxis strategy in a resource constrained locale.

Methods: Retrospective cohort study was conducted in the Apex clinic, MCH, Kolkata on 50 HIV positive children. Retrospective data on the incidence of frequent episodes (>2 episodes in any 2 consecutive months) RTI, diarrhoea, oral candidiasis, and skin lesions, incidence of TB, hospitalization and death before and after onset of daily CTMX prophylaxis (6-8 mg/kg body weight) was collected, both for 1yr, from clinic register.

Results: There was a reduction of frequent opportunistic illnesses like RTI in 28 per cent patients ($P<0.001$, CI=0.4186-0.128), diarrhoea in 24 per cent patients ($P<0.025$, CI=0.3661-0.0429), TB in 8 per cent patients ($P<0.005$, CI=0.0510-0.2672), after initiation of CTMX prophylaxis. There was no significant reduction in occurrence of oral candidiasis recurrent skin lesions, hospitalization and mortality rates.

Interpretation & conclusions: Daily CTMX prophylaxis caused significant improvement in morbidity of HIV infected children. It might not be a radical cure, but it definitely provides relief to the patients, as well as slows the process of deterioration of health in these vulnerable children. In our resource-limited settings, despite all the financial constraints, CTMX, coupled with maintenance of proper hygiene and nutrition, provides a means of improving morbidity in an otherwise helpless condition.

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Hepatotoxic effects of first-line anti-tubercular drugs

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Background & objectives: TB medications are taken for a long duration; hence they cause toxicity in the body leading to decreased patient compliance. The study was done to find out the presence and severity of hepatotoxicity of commonly used drugs in ATT.

Methods: Subjects under ATT were followed up for hepatotoxic signs and symptoms and LFTs were done fortnightly using commercially available kits.

Results: Of the 42 cases studied, 23.81 per cent developed ATT-induced adverse effects in the form of ATT-induced hepatitis and 2.38 per cent had GI adverse effects without any hepatic dysfunction. Majority of hepatitis cases (40%) were found in the age group 20-39 yr and more in female sex (43%). AST and ALT estimation are the most important liver enzymes that were raised up to 5 times the normal limit, mostly during 2nd-3rd wk of therapy and were helpful to diagnose ATT-induced hepatitis. The recovery rate and death rate were 90 and 10 per cent respectively.

Interpretation & conclusions: ATT-induced hepatitis is not an uncommon problem and is a significant barrier in completion of the therapy. Regular follow up must be made as a part of the therapy to ensure smooth completion of the treatment. Routine investigations must be done when indicated and in high risk individuals.

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Assessment of adherence of patients to antiretroviral therapy at ART clinic, LNJP Hospital, New Delhi

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Background & objectives: Adherence to ART in AIDS patients is essential not only for successful treatment but also for sustained viral control and preventing emergence of resistant strains. Therefore a cross-sectional study was conducted at the ART Clinic, LNJP Hospital, Maulana Azad Medical College, New Delhi, to assess adherence levels of patients and their reasons of non-compliance in context of ART.

Methods: A total of 100 patients on ART since last 6 months were interviewed using a pre-designed, pre-tested questionnaire and the data obtained were analyzed using SPSS software. The method used was ‘Patient Recall Method’ i.e., patient would recall and tell missing a dose at any given time in the past 4 wk.

Results: Majority of patients (94%) were adherent to the therapy. Unemployment, low income were factors associated with decreased adherence and the association was found to be statistically significant ($P<0.01$).

Interpretation & conclusions: Adherence is clearly related to the socio-economic status of the patient. Factors responsible for low adherence were unemployment, low levels of education, unmarried individuals (social support) while forgetting the dose being mostly (60%; $n=24$) the reason of non-compliance. Overall the study results showed high level of adherence (>95%) in a large proportion (94%) of patients. Improving the patients’ knowledge of their disease and importance of adhering to the treatment; providing ART services at primary health care level can be possible modalities to improve adherence.

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Incidence of Helicobacter pylori & associated changes in the gastric mucosa

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Background & objectives: The prevalence of $H.\ pylori$ infection is higher in the developing countries and it predisposes to various gastrointestinal diseases including gastric adenocarcinoma and gastric lymphoma. In this study an attempt was made to analyze the incidence of $H.\ pylori$ infection and the various mucosal changes in the gastric mucosa associated with it. This could help in assessing the severity and activity of $H.\ pylori$ infection in this part of the country.

Methods: All cases of $H.\ pylori$, reported in PSG Hospitals at Coimbatore during the period of 2001-2005 were retrieved. The histopathology slides of these patients were reviewed and mucosal changes were studied. Giemsa stain was used for better visualization of the bacteria.

Results: We found that 13 per cent of the total gastric biopsies were positive for $H.\ pylori$. Most of the patients were above 50 yr (62%). Morphological changes observed were presence of acute inflammatory infiltrate (16%), chronic inflammatory infiltrate (16%), mixed inflammatory infiltrate (18%), lymphoid aggregates (15%), glandular atrophy (6%) and intestinal metaplasia (3%). The commonest histopathological feature observed was active chonic gastritis (36%). Lymphoid follicles were present in 30 per cent of cases and of these one had MALT lymphoma.

Interpretation & conclusions: Incidence of $H.\ pylori$ infection in this part of country was low. But there was a steady rise in the number of cases each year. Incidence rate among children was found to be 12 per cent. There was a slight increase in the incidence among males. Presence of MALT lymphoma in one patient agrees well with the literature evidence that $H.\ pylori$ infection can predispose to lymphoma.

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A new mosquito control method through enzymatic inhibition of gut peptidase

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Background & objectives: Increasing casualty in mosquito borne diseases has necessitated development of effective mosquito control methods. Female mosquito is sanguivorous to acquire protein for egg production. Depriving them of their protein requirement would prevent progeny development and thereby proliferation. The transmission of parasite though gut epithelium requires the proteolytic digestive enzyme. Inhibition of which would starve them of absorbable protein in addition to blocking the parasite transmission though the vector. The objective of the research was to establish the inhibition of mosquito gut protease by an inhibitor, soybean trypsin inhibitor (STI).

Methods: Mosquitoes reared in special chambers were fed with blood mixed with STI. Blood from gut of mosquitoes were analyzed for total protein and albumin by dissecting them after equal intervals of time. Control experiments were carried out simultaneously to nullify effects due to variation among mosquitoes and other environmental effects. Five sets of such experiments with four mosquitoes in each were carried out. Data were analyzed using univariate analysis of variance.

Results: Rate of decrease in total protein in control experiment was significant \( (P=0.006) \) while that of test experiment was not. The rate of decrease in albumin was not significant in both test and control experiments. The results testified the effectiveness of use of STI in inhibiting protein digestion in mosquito.

Interpretation & conclusions: STI as a protease inhibitor can serve as a blocker of parasite transmission though vector and it can also be utilized as a new tool towards development of an effective method for mosquito eradication.

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Evaluation of the anti-hyperglycaemic effect of Berberis aristata in streptozotocin induced hyperglycaemia in rat


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Background & objectives: To evaluate the anti-hyperglycaemic effect of Berberis aristata (Daruharidra) in an experimental model of diabetes mellitus.

Methods: Diabetes was induced in male Wistar rats weighing between 250-270 g by a single intraperitoneal injection of streptozotocin (STZ) (55 mg/kg) after obtaining the Institutional Animal Ethics Committee permission. Rats with fasting blood sugar >200 mg/dl, 15 days after STZ injection were divided into 3 groups according to the treatment they received: (1) distilled water, (2) glibenclamide (0.13mg/200g) (3) decoction of Berberis (1.35ml/200g). Six animals served as normal control. Body weight and fasting blood sugar were evaluated before and after treatment.

Results: After administration of STZ, all rats showed a statistically significant decrease \( (P<0.05) \) in body weight and increase in blood sugar \( (337.56 \pm 81.84 \text{ mg/dl}; P<0.001) \) as compared to normal control \( (70.1 \pm 22.37 \text{ mg/dl}) \). Glibenclamide treatment decreased the blood sugar levels although statistically not significant. Berberis treated animals showed an increase in blood sugar as compared to disease rats \( (553.05 \pm 28.35 \text{ mg/dl}) \).

Interpretation & conclusions: Although Berberis is used in the therapy of diabetes by Ayurvedic physicians, its antihyperglycaemic effect was not observed in the given dose and duration employed in the present study. This study also indicates problems faced in herbal drug research.

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Specificity & sensitivity of rapid diagnostic test in the detection of falciparum malaria

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Background & objectives: To determine the specificity and sensitivity of rapid diagnostic test (immunochomatographic test) in the detection of Plasmodium falciparum malaria with thick and thin smear examination as gold standard.

Methods: The study population consisted of 40 patients with diagnosis of malaria based on thin and thick smear. The diagnostic accuracy of rapid diagnostic test was tested using the First sign kit. The test was based on detection of histidine rich protein antigen II specific for P. falciparum.

Results: All the 40 patients were tested positive for malaria by the rapid diagnostic test giving a high sensitivity to the test. Diagnosis was also easier and rapid by these tests.

Interpretation & conclusions: Rapid malaria antigen tests are easier to perform and are a rapid method for diagnosis of malaria leading to early detection and treatment of malaria and hence may prevent many of its fatal complications.

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Prevalence of refractive errors in school children

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Background & objectives: To study the visual status in school children between the ages 5 and 15 yr and to identify the prevalence of refractive errors in these children.

Methods: The study was conducted in two urban schools of Ludhiana city. A total of 1,043 students had completed eye examination. Students found to have a visual acuity equal to or less than 6/9 were brought to the eye department for necessary intervention and management.

Results: We found 13.99 per cent of students to have decreased vision. Myopia was found in 8.82 per cent whereas hypermetropia was diagnosed in 5.17 per cent children. Both myopia ($P=0.0243$) and hypermetropia were more prevalent in the age group 11-15 yr, and among female students ($P=0.0019$). Myopic astigmatism was found in 1.91 per cent. Amblyopia was diagnosed in 0.19 per cent children.

Interpretation & conclusions: Uncorrected refractive errors are a major cause of visual impairment among school children. The sooner they are detected, the easier it is to manage the condition. A multicentric survey on the causes of visual impairment in school children should be designed and implemented.

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Fatigue strength & wear debris of the artificial ceramic on ceramic hip joint under normal walking conditions

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The prevalence & risk factors of hospital acquired infections (HIA) among patients in surgery wards & ICU of a tertiary hospital

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The use of dermatoglyphics in children with acute lymphoblastic leukaemia

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Background & objectives: Considering the very high incidence of acute lymphoblastic leukaemia (ALL) and the knowledge that it can be cured if diagnosed early we set out to test the effectiveness of dermatoglyphics as an early cost-effective screening tool to detect ALL. To achieve this, we tried to identify any specific dermatoglyphics patterns in children with ALL and also to identify specific dermatoglyphic differences, if any, between T-cell and B-cell leukaemia.

Methods: This was a cross-sectional study of 30 children with ALL in age group of 0-16 yr, and 30 age-matched controls without leukaemia. Their fingerprints were taken and the various parameters were assessed and were compared with the controls.

Results: We found that the mean radial value in cases were significantly lower ($P=0.002$) and the mean whorl value ($P=0.026$) was higher when compared to the control group.

Interpretation & conclusions: The significant changes in the radial loop and whorl characteristics in children with leukaemia as compared with the controls suggest that dermatoglyphics alterations are a part of the problem and early identification of these changes may serve as an excellent clinical, non-invasive tool to identify high risk children in the community.

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Evaluation of serum ceruloplasmin, antioxidant activity & plasma fibrinogen levels in diabetes mellitus

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Background & objectives: This study was carried out to compare the serum levels of ceruloplasmin, antioxidant activity (AOA) and plasma fibrinogen (FBN) among controls and cases, and to find out the correlation of serum ceruloplasmin, AOA and FBN with glycaemia.

Methods: AOA was estimated by the method described by Koracevic et al. Serum ceruloplasmin was estimated by the method described by Sundderman and Nomoto. FBN and HbA1c were estimated by using commercially available kits.

Results: AOA, ceruloplasmin and FBN were estimated in 40 cases and 47 age-and-sex matched controls. AOA was significantly decreased ($P=0.002$) in cases (0.681 ± 0.253mmol/l) when compared to controls (0.923 ± 0.447mmol/l). Serum ceruloplasmin levels were significantly increased ($P<0.001$) in cases (983.2 ± 327.2mg/l) when compared to control (470.7 ± 268mg/l). FBN level was significantly increased ($P<0.001$) in cases (480.23 ± 124.0mg/dl) when compared to controls (313.94 ± 92.0mg/dl.). Further, we found significant correlation between HbA1c and FBN levels ($P<0.001$). Our study also indicated a weak correlation between HbA1c and AOA ($P=0.032$).

Interpretation & conclusions: In diabetes mellitus, AOA was decreased serum ceruloplasmin and FBN levels were increased. There was a correlation between FBN, oxidative stress and HbA1c. This indicates that diabetic patients are at a risk of developing cardiovascular disease.

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Study of peak expiratory flow rate (PEFR) in the assessment of lung function in traffic policemen & tannery workers in Erode (Tamil Nadu)

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Background and objectives: Pollution and its effect on the people is a global threat. As industries and automobile have been known to be the major contributions of pollution, we decided to study the lung function of traffic policemen and tannery workers.

Methods: The study was conducted among tannery workers and traffic policemen in and around Erode among males age between 25 and 35 yr. The sample population was divided into 3 groups: Group I - control group, Group II – tannery workers, Group III – traffic policemen. The controls were taken from the native population. The sample size was 15 in each group. The parameters studied were PEFR, chest expansion, breath holding time (BHT).

Results: There was an insignificant decrease in PEFR in both tannery workers and traffic policemen. BHT was significantly decreased in the tannery group but increased in the traffic policemen. Chest expansion increased significantly in the tannery group and insignificantly increased in the traffic policemen.

Interpretation & conclusions: This study shows that chronic exposure to air pollution affects the lung function.

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Prevalence of nutritional deficiencies among a Lodha community of Paschim Medinipur district, West Bengal

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Background & objectives: The aim of our study was to determine the prevalence of protein energy malnutrition, nutritional anaemia, and specific nutritional deficiencies for iodine and vitamin A.

Methods: 338 Lodhas (male =186, female=152) of all age of Gohaldihi village (selected randomly) in Salboni of West Midnapore were studied. Anthropometric measurements and Hb% (Cyanmethaemoglobin method) estimations were done. Specific nutritional deficiencies were assessed clinically. NCHS and WHO standards were followed for calculations.

Results: In under five children, the prevalence of malnutrition was detected as under weight (wt. for age) 61.36 per cent (M=58.33%, F=65%), wasting (wt. for ht.) 40.91 per cent (M=41.67%, F=40%), and stunting (Ht. for age) 36.36 per cent (M=37.5%, F=35%). In the 5-18 yr age group prevalence of thinness was 32.35 per cent (Based on BMI). Among adults (above 18 yr) prevalence of malnutrition was 54.95 per cent (based on BMI). The prevalence of anaemia was 50 per cent in children (under 5), 60.53 and 51.61 per cent among the rest of the females and males respectively. The overall prevalence of goitre and vitamin A deficiency were 7.1 and 5.33 per cent respectively.

Interpretation & conclusions: Comparing with similar studies among tribals done in other States, we found that the percentage of malnutrition among the Lodhas was higher. Hence further interventions should be done so as to diminish the overall percentage of malnutrition among the Lodhas.

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Evaluation of respiratory morbidity in petrol pump workers in Mumbai

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Background & objectives: To find out respiratory morbidity in petrol pump workers in Mumbai. This study was aimed at finding out if the petrol pump workers are having any altered pulmonary functions and if found, then their relation with the occupational exposure at workplace by surveying petrol pump workers from Dadar and Parel areas in Mumbai.

Methods: In this prospective study, we surveyed 4 petrol pumps in Dadar and Parel areas in Mumbai. A total of 33 petrol pump workers along with 32 controls (taken from surrounding areas to rule out confounding factors) were studied. Keeping in mind the inclusion and exclusion criteria of the study, after taking written informed consent each one was asked questions according to the EPRC Performa about their lifestyle, working conditions, hours of work, smoking history, any health problems having occurred in the past. A general physical examination was carried out. After recording height and weight spirometry was done to find out the values of FVC, FEV1, PEF, MEF (75-25). Values of breath CO were measured using breathanalyser.

Results: The data were analyzed using the SPSS (Statistical package for social study Version 10) analysis. We found that in the petrol pump workers 72.7 per cent, in controls 81.3 per cent people were normal. 15.2 per cent of petrol pump workers had mild restriction while 3 per cent had mild obstruction on PFT. In controls, 12.5 and 9.4 per cent were found having mild restriction and obstruction respectively. The values of breath CO were found to fall within normal limits.

Interpretation & conclusions: Workers were found to sustain some respiratory morbidity in the form of bronchitis, upper respiratory tract infections, allergic rhinitis, etc. But on comparison with the control group, it was seen that there was no significant association between petrol pump workers pulmonary function status and their workplace exposure to pollutant gases.

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Ocular changes in multi-transfused β-thalassaemic children receiving desferrioxamine

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Background & objectives: Iron overload and use of desferrioxamine in thalassaemic patients can result in an array of ocular abnormalities. Multi-transfused thalassaemic children receiving desferrioxamine were screened for ocular abnormalities, which were correlated with the duration and frequency of desferrioxamine administration and serum ferritin levels.

Methods: In this prospective study, 25 thalassemic children, 4 to 21 yr in age, were examined to determine the prevalence and pattern of ocular changes. All children had been receiving desferrioxamine in a dose of 40-60 mg/kg, infused over 8-12 h, 3-6 times/wk for at least six months. They were examined for visual acuity, colour vision, ophthalmoscopy, fundus and slit-lamp examination. Refraction, VER and fluorescein angiography were done where applicable.

Results: None of the thalassaemic children had ocular symptoms. Prevalence of ocular abnormalities was 24 per cent (6/25). Ocular changes seen included cataract (5/25), blurred optic disc margins (6/25) and dilatation and tortuosity of retinal vessels (2/25). Incidence of cataract was associated with higher serum ferritin values (P<0.05). Blurring of disc margins was significantly associated with increased duration (> 5 yr) and frequency (> 5 times/wk) of desferrioxamine administration. However, visual acuity, VER and fluorescein angiograms were normal in these patients, signifying healed optic neuropathy. A positive correlation was seen between the incidence of cataract and blurred disc margins. Ten children had impaired visual acuity (<6/9).

Interpretation & conclusions: All thalassaemic children should be screened for ocular abnormalities. Rational usage of desferrioxamine to decrease iron overload will help to reduce ocular abnormalities.

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Rapid isolation of *Mycobacterium tuberculosis* by thyroxine supplementation on Lowenstein - Jensen medium

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**Background & objectives:** Comparison of growth rate of *Mycobacterium tuberculosis* in conventional Lowenstein-Jensen (L-J) medium and L-J medium supplemented with thyroxine.

**Methods:** Sputum samples are subjected to Ziehl-Neelson (Z-N) staining technique to identify acid fast bacilli. Sputum sample positive for *M.tuberculosis* were then concentrated by Petroff’s method and sediment is inoculated on plain L-J medium and L-J medium supplemented with thyroxine. Growth rate was noted every week. Culture positives were further confirmed by Z-N staining and niacin test.

**Results:** In a total of 50 samples inoculated on L-J medium with thyroxine, 38 samples showed growth and on plain L-J medium, 34 samples showed growth. In about 9 samples growth on L-J medium with thyroxine was one week before (64%) and in five samples two weeks before (36%) and in four samples growth was noted only in L-J medium with thyroxine when compared to growth in conventional L-J medium.

**Interpretation & conclusions:** The definitive diagnosis of tuberculosis depends on culture isolation and identification. Culture isolation in L-J medium requires incubation time of 6-8 wk. Addition of thyroxine to L-J medium increased the incidence of positive cultures and also rapid isolation of tubercle bacilli.

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Antibiotic resistance development in biofilm associated *Pseudomonas* clinical isolate

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**Backgrounds & objectives:** Phenotypic variations have been reported between planktonic and biofilm modes of bacterial growth with respect to growth rates and ability to resist anti-microbial treatment. Objective of the present study was to demonstrate and quantify growth of biofilm in vitro and to study the change in antibiotic sensitivity pattern in *Pseudomonas* species grown in biofilm.

**Methods:** *In vitro* culture of *Pseudomonas* species for demonstration of biofilm was performed by tissue culture plate method. Quantification of biofilm mass was performed by a crystal violet incorporation method employing polystyrene microtitre plates. Antibiotic susceptibility test of the clinical isolate in planktonic culture and the bacteria disrupted from the biofilm was performed by standard disc diffusion method following NCCLS guidelines.

**Results:** The *Pseudomonas* clinical isolate was found to be biofilm producer. Assay showed the mean average titre OD₆₃₀ value to be ranging from 0.039 up to 0.009; that was in parallel with the dilution of initial number of cells inoculated onto the polystyrene wells. The panel of antibiotics tested included gentamycin, piperecillin, ceftrioxome, ceftazidime, and ciprofloxacin. Antibiotic resistance was developed for ceftrioxome by *Pseudomonas* species after the biofilm phase of growth (zone diameter=27mm) in contrast to the planktonic culture (zone diameter=11mm).

**Interpretation & conclusions:** The present study provides the possible explanation for the emergence of drug resistant strains of *Pseudomonas* species in hospital acquired infections. It may be helpful in understanding the pathogenesis of diseases caused by environmental bacteria associated with long run use of medical devices in human.

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Screening of haemoglobin variants in patients of thalassaemia with the help of cadmium sulphide nanoparticle - A fluorescent marker

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Background & objectives: To screen haemoglobin (Hb) variants in patients of different types of thalassaemia and compare the interaction of cadmium sulphide (CdS) nanoparticle with blood of these patients and the normal cases.

Methods: Approximately 3 ml of blood was collected from patients of thalassaemia and normal persons, taken into an Eppendorf and subjected to micro-centrifugation at 3,500 rpm for 10 min to obtain plasma, which is taken into another Eppendorf. Thereafter, CdS nanoparticle was added incubated at room temperature for 30 min. This suspension was taken into a glass-slide and viewed under a microscope, both at 10X and 20 X magnifications in bright field and fluorescent one.

Results: RBC of thalassaemic variants contained Hb different from one another, both quantitatively as well as qualitatively which must have led to changes in physical properties of plasma. Percentage of plasma proteins and viscosity thus, varied from one Hb variant to other. These physical properties of plasma caused formation of self-assembled structure induced by fluorescent CdS nanoparticle which was sodium dodecyl sulphite stabilized known to bind protein molecules which when exposed in presence of plasma of different variants induced formation of fractals specially DLA (Diffusion Limited Aggregation) type. Control plasma did not show any such structure. Fluorescent images on the other hand showed presence of fluorescent CdS in the produced fractal.

Interpretation & conclusions: CdS nanoparticles when exposed in presence of plasma of different variants bound to plasma proteins and induced formation of microscopic fractal specially DLA type which had a characteristic pattern for each variants and thus can be used for their identification. This method is very easy to execute and has a potential to be a handy tool for carrier detection from other conventional methods.

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Antiepileptic effect of Glycyrrhiza glabra in animal models

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Background & objectives: Epilepsy is a disease of concern because of its refractoriness and need of life long treatment, which presently is far from satisfactory, expensive with many side effects. Effective indigenous drugs can be more economic with less side effects. Hence, this study was aimed at evaluating the anticonvulsant effect of Glycyrrhiza glabra (ethanolic extract-EEGG), an indigenous plant with reported anticonvulsant and sedative property.

Methods: Six groups of albino rats [(150-200g) (n=6)] were treated intraperitoneally with vehicle (distilled water), test drug (50, 100, 150 and 200 mg/kg of EEGG) and standard drug (phenytoin) before induction of MES seizure. The time of onset and duration of seizure phases before and 30, 60, 90 and 120 min after drug / vehicle treatment were recorded. Reduction / abolition of onset/duration of hindbimb extension after MES were taken as protective. Data were analyzed using one way - ANOVA followed by multiple t test (LSD method) using a software package.

Results: The duration of tonic hindlimb extension was 13.0 ± 0.63 sec at 60 sec in vehicle treated, abolished at all time intervals in phenytoin treated, and 7.5 ± 1.59, 8.67 ± 2.1 and 8.5 ± 0.56 sec with 100, 150 and 200 mg/kg EEGG at 60 min interval respectively.

Interpretation & conclusions: EEGG was found to possess significant anticonvulsant property in MES seizure test. Thus this study inspires further investigation and clinical trial to provide a new dimension to the therapy of epilepsy.

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Evaluation of the anti-inflammatory potential of root bark of *Clerodendrum phlomidis* in experimental models of inflammation


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**Background & objectives:** Given the increasing burden of inflammatory disorders and at the same time, increasing realization of untapped potential of Indian traditional medical knowledge, we decided to explore the role of aqueous extract of root bark of *Clerodendrum phlomidis* (*Cp*) in rodent models of acute and chronic inflammation.

**Methods:** The anti-inflammatory activity of *Cp* was evaluated in models of acute inflammation (carrageenan-induced rat paw oedema and acetic acid-induced peritonitis in mice). A model of cotton pellet granuloma was used to explore chronic anti-inflammatory activity. Three doses of *Cp* were used and its activity was compared with aspirin and *Dashamoolarishta*.

**Results:** In the model of rat paw oedema, *Cp* at the intermediate dose showed significant anti-inflammatory activity (15.85% inhibition, *P*<0.05 vs vehicle control). *Cp* at the low and intermediate dose was found to exhibit significant anti-inflammatory activity as compared to vehicle control (27.32% inhibition, *P*<0.01 and 27.32% inhibition *P*<0.001 respectively) in the peritonitis model. Further, *Cp* in the intermediate and high doses showed a significant anti-inflammatory activity (50.38% and 46.83% inhibition respectively; *P*<0.01 vs vehicle control) in model of chronic inflammation.

**Interpretation & conclusions:** This study demonstrates potent anti-inflammatory activity of root bark of *Cp* in models of acute and chronic inflammation. This study for the first time provides scientific basis for inclusion of *Cp* in the multi-ingredient plant formulation, *Dashamoolarishta*. It also opens up new avenues for further research on *Cp* for developing newer anti-inflammatory agents.

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Antidepressant effect of St. John’ wort extract in behavioral despair of animal model of depression

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**Background & objectives:** Considering the increase in the depressive behaviour in the individuals in the society, there is a need for a safe and cost-effective drug for long-term therapy in various depressive ailments. Therefore our objective was to investigate the antidepressant action of St. John’ wort (SJW) extract in behavioural despair of animal model of depression comparing with a standard antidepressant.

**Methods:** The animals (albino rats) were divided in eight groups, six animals in each group, were forced to swim individually in a polypropylene vessel, describe in Porsolt’s forced swimming test (FST) model. Behavioural despair was indicated by immobility period. Imipramine (standard) and SJW (test) were given in three increasing doses with control for 14 days. The reading of immobility period was collected on 14th day.

**Results:** From our experiment, it was seen that SJW worked as an antidepressant like the classical antidepressant drugs. SJW gave better result than imipramine. The low dose combination with imipramine (16 mg/kg imipramine+100 mg/kg SJW) acted synergistically and gave better result than each individual drug.

**Interpretation & conclusions:** Active ingredients of SJW are believed to, act by some cytokine modulation. Our study showed that SJW had better effect as antidepressant than imipramine. Thus SJW, which is cost-effective and safe natural product, can be used as a potent antidepressant but further clinical studies are needed.

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Effect of newer antihistamines on psychomotor functions in Indian population

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Background & objectives: The first generation antihistamines have been associated with side effects, particularly impairment of psychomotor functions. Second generation antihistamines labelled as non-sedating is reported to have fewer side effects. However, there are no comparative studies in Indian population. The purpose of the present study was to evaluate the effect of newer antihistamines on the psychomotor functions in the Indian population.

Methods: A total of 75 patient volunteers were included in the study. Volunteers were put into 5 groups based on the type of antihistamine prescribed. Group 1 included those who were prescribed no antihistamine, Group 2 was prescribed 1st generation antihistamines, and Groups 3, 4, 5 were prescribed 2nd generation antihistamines cetirizine, fexofenadine and loratidine respectively. A battery of four tests: critical flicker fusion threshold (CFFT), digit symbol substitution test (DSST), finger tapping (FT) and visual analogue scale (VAS) for day time sedation was used in the study.

Results: 1st generation antihistamines impaired psychomotor functions establishing the validity of psychomotor function tests chosen for the study; 2nd generation antihistamines did not significantly affect CFFT frequency, but DSST score was significantly reduced. Fexofenadine significantly reduced finger tapping. All antihistamines produced sedation except loratidine.

Interpretation & conclusions: 2nd generation antihistamines impaired psychomotor performance; however there are individual differences in the effect of drugs.

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The role of mycological investigations in diagnosis of pityriasis versicolor & seborrheic dermatitis patients

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Background & objectives: The study aimed at isolation and identification of Malassezia spps from pityriasis versicolor and seborrheic dermatitis patients. Correlation of clinical findings with mycological investigations was also attempted.

Methods: From a total 50 patients, 40 were pityriasis versicolor and 10 were seborrheic dermatitis. Each patient’s detailed clinical history was recorded and microscopic evaluation by 20 per cent KOH mount and Gram’s stain was done. Samples were inoculated on Sabouraud’s dextrose agar with olive oil. Growth was observed for a month. Identification and confirmation of isolates was done by using mDixon agar and various biochemical tests.

Results: KOH positivity was 92 per cent for pityriasis versicolor and 70 per cent for seborrheic dermatitis but isolation rate was found to be 65 per cent for pityriasis versicolor and 20 per cent for seborrheic dermatitis. Of these, 15 could be confirmed till species level. Candida parapsilosis was confirmed from one pityriasis versicolor patient.

Interpretation & conclusions: It was observed that the number of seborrheic dermatitis was less compared to pityriasis versicolor patients. Clinical findings and microscopic confirmation was sufficient to start immediate treatment to the patient. Isolation rate of Malassezia species from seborrheic dermatitis was low as compared to pityriasis versicolor patients. Culture confirmation and speciation of Malassezia fungus may be useful as epidemiological findings and to evaluate effect of treatment.

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Subclinical thyroid dysfunction: Screening of the staff of a tertiary referral centre

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Background & objectives: The data about prevalence of subclinical thyroid dysfunction in India being scarce, we decided to evaluate the prevalence of subclinical thyroid dysfunction and thyroid autoimmunity and thus to assess thyroid functional status in apparently healthy individuals.

Methods: A randomly selected sample of 100 individuals (30-60 yr), 50 males and 50 females was obtained by excluding those with a history of thyroid disease, use of thyroid medications or goitre. The individuals were investigated for serum total thyroxine, serum TSH and anti-TPO antibodies. The prevalence of subclinical thyroid dysfunction was determined. The individuals showing positive anti-TPO antibody titre were further analyzed for prevalence of subclinical thyroid dysfunction.

Results: We found prevalence of subclinical hypothyroidism in females to be 14 per cent and that in males to be 6 per cent. Prevalence of subclinical hyperthyroidism in females was 4 per cent and that in males was 8 per cent. Thus the total prevalence of subclinical thyroid dysfunction was 16 per cent (10%-subclinical hypothyroidism and 6%-subclinical hyperthyroidism). We found no cases of overt thyroid dysfunction. Four out of eight females and 1 out of 3 males (33.3%) showing positive anti-TPO antibody titre, were found to have subclinical hypothyroidism.

Interpretation & conclusions: This study provides prevalence of subclinical thyroid dysfunction which will serve as a basis for further such studies.

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An evaluation of the use of different suture materials for skin suturing

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Background & objectives: This randomized, prospective study was done to compare and contrast different non absorbable suture materials and to find out the suture material with the best results, minimal complications and a favourable cost benefit ratio.

Methods: Fifty patients were enrolled and were randomly distributed to the 5 non-absorbable suture material groups under study. They were then evaluated on postoperative days 1, 3, 8, 15 and 30.

Results: Ethilon (monofilament nylon) was found to be comparable with skin stapler with less complications and favourable cosmetic results. It was also found to be the most cost-effective material. Linen, though the cheapest and most readily available material, was found to have more complications and hence was not satisfactory for skin closure. In our study, an unusual finding with prolene, i.e., an increased incidence of discharge, was noted. The ultimate result was however good. But prolene, due to its high costs, was not found to be very effective for skin closure. Silk showed an increased incidence of tissue reactivity and was not favourable for closure of skin wounds.

Conclusion: Skin staplers were found to be the most effective method of closure of skin wounds with less complications and favourable cosmetic results.

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Intravaginal misoprostol for 2nd trimester termination of pregnancy – A comparative study

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Background & objectives: This study was done to evaluate the efficacy of intravaginal misoprostol for 2nd trimester termination of pregnancy, and to compare its efficacy with extra-amniotic ethacridine lactate.

Methods: Women requiring 2nd trimester abortion with gestational age between 14 to 28 wk were recruited, excluding those with contraindications. Informed written consent was obtained. After thorough vaginal examination 400 mg of misoprostol was inserted in posterior vaginal (Group I) fornix, every 3 h (max-5 doses). The data were analyzed and efficacy was compared with equivalent number of ethacridine lactate induced 2nd trimester abortion (Group II).

Results: (i) Induction abortion interval: It was less than 12 h in 68 per cent of patients in group I and 6 per cent of patients in group II. (ii) Success rate: It was 92 per cent in group I and 84 per cent in group II. (iii) Completeness of abortion: Group I = complete abortion = 92 per cent, failed = 8 per cent, Group II complete = 84 per cent, incomplete = 10 per cent, failed = 6 per cent. iv) Hospital stay: Up to 3 days in 62 per cent of patients in group I and 22 per cent of patients in group II.

Interpretation & conclusions: Misoprostol is an effective drug for 2nd trimester abortion with less maternal side-effects of complications. It is also cost-effective with no risk of surgical intervention. Its use is technically easy as it is put in the vagina and it does not need refrigeration. This advantage has great value in rural settings where paramedical staff can be trained easily for such procedure.

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Hepatitis B & other vaccination coverage in business & urban slum communities of Delhi

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Background & objectives: To compare hepatitis B and other vaccination coverage among children in business and slum communities of Delhi.

Methods: Community based, cross-sectional survey was conducted in urban slums and business locality of Delhi; 128 children aged 12-23 months in business community and 109 from urban slums were studied. House-to-house survey was conducted from a random point using pre-tested, semi-coded interview schedule. A database was prepared and analyzed using EpiInfo software. Chi-Square test was used for any statistical significance.

Results: Both groups varied significantly in terms of socio-demographic variables such as socio-economic status, religion, etc. Hepatitis B vaccination coverage for all 3 doses in business community was 82.8 per cent and 47.7 per cent in slums ($P<0.001$). BCG vaccine was given to 96.9 per cent children in business community and 90.8 per cent in urban slums ($P=0.048$). Coverage with third dose of DPT/OPV and measles vaccines was around 85 per cent in business community and around 55 per cent in urban slums ($P<0.001$). In business community 69.5 per cent children were immunized in private health facilities and in urban slums 95.7 per cent were immunized at government health facilities ($P<0.001$).

Interpretation & conclusions: With incorporation of hepatitis B vaccine in UIP schedule of Delhi along with DPT vaccine, the coverage of both vaccines was equivalent. Due to higher socio-economic status and use of private health care facilities, immunization status in business community was better.

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Incidence of structural anomalies in children suffering from urinary tract infections

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Background & objectives: Given the fact that anomalies of genito-urinary tract cause recurrent childhood UTI leading to renal scarring and morbidity in much of the paediatric population, we decided to study the incidence of anomalies and analyze the effectiveness of chemoprophylaxis in children with anomalies.

Methods: Hospital files of children up to 18 yr admitted in Department of Paediatrics from January 2005 to December 2006 were reviewed. Patients meeting inclusion criteria were identified—the symptoms they presented with, associated structural anomalies and investigations done in the hospital were recorded. The chemoprophylactic agents given to patients and number of breakthrough UTIs were looked into for correlation in the study. The sample size was 47 cases.

Results: We found that 55 per cent of the children had anomalies of the tract (I=55.3%); VUR being the most common (46%) being high grade in 60 per cent. The incidence of breakthrough UTI on chemoprophylaxis was 55.5 per cent. Hydronephosis was seen in 45 per cent cases; renal scarring in 76 per cent being more common in high grade VUR cases.

Interpretation & conclusions: Our study suggests high incidence of genitourinary anomalies in children with UTI. Prophylactic drugs prevented recurrent symptomatic UTIs but did not halt progression to renal damage. High incidence of breakthrough UTI proved low drug efficacy. More clinical trials are needed to look for alternate drugs particularly in children with genitourinary tract anomalies.

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A comparison of inj. granisetron with inj. ondansetron given preemptively pre-anaesthetic medication for prevention of post-operative nausea & vomiting (PONV) in patients

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Background & objectives: Nausea and vomiting are very common observed in post-operative period. The objectives of the study were to find the incidence of post-operative nausea and vomiting in pregnant women undergoing lower segment caeserian section under spinal analgesia and to compare 0.08-0.1 mg/kg dose of intravenous ondansetron and 20 mg/kg dose of intravenous granisetron for prevention of PONV in a prospective cohort study.

Method: Patient selection: 60 females, ASA I 18-45 yr. (ii) Surgery: LSCS (iii) Time duration: 30-90 min. (iv) Random allocation: Group A: inj. ondansetron; Group B: inj.granisetron; Group C: inj. normal saline, 5 min prior to the initiation of spinal analgesia. Vitals monitored, baseline, intraoperative as well as post-operative. Scoring of nausea/vomiting, sedation and pain was done. Observation were made at 8 time intervals as T0-Immediate post op. T1 -T4 – Every 30 min, T5 – 6 h, T6 – 12 h, T7 – 18 h, T8 – 24 h post-operative.

Results: When compared in context with demographic profile, vital parameters, there was no significant difference. In case of nausea/vomiting score, it was found that granisetron group had the least incidence followed by ondansetron group, while there were no side effects in granisetron group.

Interpretation & conclusions: Granisetron given pre-emptively as a pre medication helps in reducing the incidence of PONV with good safety margin.
An epidemiological study of hypertension in an adult tribal population in West Midnapore district of West Bengal

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Background & objectives: Hypertension being the commonest cardiovascular disorder is becoming a major public health problem in developing countries. The present study was carried out in the tribal population of West Midnapore District of West Bengal to study the prevalence and risk factor correlates of hypertension.

Methods: The cross-sectional, observational, community-based study was undertaken among the scheduled tribes of Salboni Block utilizing the recommendations of JNC–VII to classify the participants by different categories of hypertension. A total of 713 adult respondents were interviewed using the pre-tested schedule followed by anthropometric and blood pressure measurement. Sample size was pre-determined by n = 4pq/l², considering prevalence as 20 per cent and allowable error 15 per cent.

Results: Out of total 43.89 per cent males and 56.11 per cent females, 70.12 per cent were in the age group of 18-45 yr and alcoholism was the main form of addiction. A substantial proportion (22.99%) of individuals exhibited stage 1 (14.72%) and stage 2 (8.27%) hypertension and 39.69 per cent were in pre-hypertensive category. Only 2.66 per cent were on medication. Result also showed that 42.77 and 57.23 per cent individuals were engaged in sedentary and heavy activities respectively. Among the respondents, majority (76.29%) had their BMI within normal range and 12.47 per cent were overweight.

Interpretation & conclusions: Hypertension is a significant problem in the tribes of Midnapore.

Comparative evaluation of ground flaxseed (Linum ussitatissimum), flax oil & atorvastatin on endothelial cells

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Background & objectives: To compare effects of ground flaxseed, flax oil and atorvastatin on endothelial cells in terms of nitric oxide (NO) release and their interaction with monocytes.

Methods: Rats (n=32) were randomized into test and control groups. The test groups received either atorvastatin (50 mg/kg orally), flax oil (1.8 gm/kg) or ground flaxseed mixed in diet (2.34 gm/kg) for 21 days, following which blood was collected to separate sera for further study. Human umbilical vein endothelial cells (HUVECs) were incubated with sera samples and NO release was estimated. To study interaction of HUVECs with monocytes, co-culture of HUVECs and smooth muscle cells were incubated with sera in presence of LDL. Supernatants were separated and using Neuroprobe chamber chemotaxis of monocytes towards supernatants was counted as monocytes migrated per HPF. Co-culture supernatants were incubated with HUVECs and monocytes to count the number of adherent monocytes to HUVECs.

Results: Atorvastatin significantly increased NO release by HUVECs (46.92±10.19 µM/ml). Maximum NO release however was seen when HUVECs were incubated with sera of rats given ground flaxseed (138.66±17.21µM/ml vs flax oil: 123.91±17.94 and atorvastatin; P<0.001). Flaxseed and Flax oil reduced chemotaxis and adhesion of monocytes to HUVECs and the results were comparable to atorvastatin.

Interpretation & conclusions: All the three agents prevented interaction of monocytes with endothelial cells. Moreover, significantly higher release of NO from endothelial cells was seen with ground flaxseed mixed with diet than flax oil and atorvastatin. This study proves beneficial effects of flax seed, a cheap and easily available alternative for flax oil, on endothelial cells.

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EKG negative exercise stress test (EST) on the haemodynamic alterations during exercise of people with no evidence of coronary artery disease

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**Background & objectives**: The primary objective was to study and compare changes in haemodynamic variables (diastolic BP, systolic BP, pulse pressure, heart rate and metabolic equivalents) during EST among different age groups.

**Methods**: The people undergoing EST were divided into 3 age groups; less than 40 yr, between 40 to 50 yr, more than 50 yr. The means of haemodynamic variables during EST in each group were calculated and a progression of these variables with age was obtained and analysed.

**Results**: We found that upon exercise the rise in diastolic BP was more in the older age group than in younger ones; the rise in systolic BP was more in younger age groups than in the older ones; the rise in pulse pressure was more in the young population than in the elderly; the rise in heart rate was steadily less in the older population; the peak O₂ utilization and myocardial O₂ uptake during exercise fell linearly with age.

**Interpretation & conclusions**: We conclude that exercise tolerance, even in the absence of any coronary artery disease falls linearly with age. Thus an inadequate rise in heart rate and BP with exercise in elderly may be due to an inadequate sympathetic activity instead of a heart disease.

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A community based study on determinants of contraceptive use among ever married women in rural Mangalore

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**Background & objectives**: National Population Policy lays emphasis on fulfilling the unmet needs of contraception among the women. So it is important to know the determinants of contraceptive use. The study was undertaken with two objectives: (i) to find out current contraceptive practices, and (ii) to find out the determinants of contraceptive use.

**Methods**: A cross-sectional study was conducted in the rural field practice area of Mangalore. The total sample size of 160 was arrived at by using the formula for infinite population \(4pq/d^2\). We assumed a 10 per cent non response rate. A pre-tested structured schedule was used for the interview of the women in their houses. The following information was elicited- socio-demographic information, information regarding contraceptive use and its determinants. The women (18-45 yr) were selected by a combination of simple and stratified random sampling (probability proportional to size) to get the required number. Data were entered in SPSS version 10 and analyzed. The results were expressed in proportions in appropriate tables, \(P<0.05\) was considered significant. Chi-square test was the test of significance used.

**Results**: The prevalence of contraceptive use in the study was 55.8 per cent. Women used spacing methods (IUCD-10.3%, pills-8.3%, condom-22.4%) after marriage and terminal methods (18.6%) after completion of family. The variables significantly associated with contraceptive use were education status of the study group, occupation, religion, family type and age.

**Interpretation & conclusions**: Higher literacy among women and economic independence has played an important role in promoting contraceptive use (spacing more than sterilization).

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Prevalence of drug abuse among medical & non-medical students

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Background & objectives: To find out the prevalence of different type of drug abuse among medical and non-medical students and to compare the prevalence and the study the factors related to drug abuse.

Methods: A cross-sectional, comparative, epidemiological study was conducted in a general college-Midnapur College (MC) and Medical College-Midnapur Medical College (MMC). Total 586 students from both the colleges were interviewed with a semi-structured pre-designed questionnaire. Incompletely filled and wrongly filled questionnaires are rejected and 531 questionnaires ultimately studied.

Results: Among the 281 students in MC 18.51 per cent were found to be addicted, whereas the prevalence in MMC was 20 per cent. The difference was not significant. None of the female students were found to be addicted. Commonest addiction was smoking in both the colleges (MC-94.23% and in MMC-90% followed by alcohol (MC – 53.85% and in MMC 54%). Addiction to cannabis was 15.38 per cent in MC and 26 per cent in MMC. In MMC 54 per cent initiated addiction before entering the college whereas in MC 80.76 per cent started before entry. Most of the students started addiction due to curiosity (MC-51.92% and MMC-70%). Addiction to opium was 5.77 per cent in MC and 6 per cent in MMC. Among the addicted individuals 94 per cent have adequate knowledge about the health hazards of addiction in MMC but in MC only 26.92 per cent have.

Interpretation & conclusions: Prevalence of smoking was found to be lower than previous study conducted in male college student Delhi University (prevalence 28.0%). Use of alcoholic beverages ranges from 23 to 74 per cent among the male population of Rajasthan. So health education on anti-smoking activities should be directed to lower down the prevalence of smoking. Opium, cannabis addiction in medical students also suggests that necessary action should be taken. Action plan should be taken for identification, motivation, counselling, treatment and after care.

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Estimating gingival secretion as an effective substitute to serum for monitoring measles IgG antibody

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Background & objectives: Measles is highly infectious and severe childhood disease causing extensive morbidity and mortality in developing countries, where blood samples are taken for serological studies. We have analyzed the suitability and potentiality of gingival secretion (GS, oral fluid around the gums) to substitute serum for estimating measles IgG antibodies for measles pertaining community surveys such as on vaccination, transmission, susceptibility, immunity and diagnosis; by comparing the optical density (OD) of measles IgG antibodies in GS to that detected in serum. GS collection is more acceptable over blood among children and parents in being painless. It is suitable for non-technical staff at home, rural and field setting, easy to transport and free from risk to exposure to blood borne pathogens associated with serum.

Methods: GS and blood was collected from 100 apparently asymptomatic children stratified into age cohorts of less than one year, 1-5 yr and greater than 5 yr. IgG antibody status in GS and serum was determined using commercially available-Measles IgG Capture EIA and SPSS statistical software used for calculation.

Results: The study showed concordance of 89 per cent and coefficient of correlation r=0.97 (Karl Pearson’s) and rho=0.86 (Spearman’s), between OD value of GS and serum which are statistically significant.

Interpretation & conclusions: It emphasizes the potential of GS to surrogate serum for estimating measles IgG antibody in children in field trails and community surveys.

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Prevalence of risk factors of coronary heart disease in Mangalore: a cross-sectional study

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Background & objectives: As we know the burden of CHD is on the rise proving it to be an important public health concern in the developing nations such as ours. It is very important to keep a track on the prevalence of risk factors of the disease to as to undertake any community level preventive measures. The study was aimed to identify the prevalence of selected risk factors of coronary heart disease (CHD) and further study the prevalence of these risk factors in those with already diagnosed CHD.

Methods: Data were collected using a pre-tested semi-structured questionnaire by a house-to-house visit of 250 individuals above 30 yr of age after taking prior informed consent.

Results: It was found that 13.9 per cent were smokers and 3.6 were ex-smokers. Known hypertensive constituted 33.3 per cent of the subjects. 26.2 per cent males and 15.8 per cent females were identified hypertensive during the course of the study. Known cases of diabetes mellitus was 17.8 per cent among males and 15.8 per cent among females. Family history of CHD was found to be 9.52 per cent of population. Alcohol intake was among 15.8 per cent of the population. Obesity was found among 15.07 per cent of subjects.

Interpretation & conclusions: The study has explored almost all the important risk factors and their prevalence in the city of Mangalore. The study highlights the importance of lifestyle changes such as increasing physical activity, adequate diet, control of associated disorders such as diabetes mellitus, hypertension and steps towards creating awareness on ill effects of smoking and alcohol intake could go a long way in the control of CHD.

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Relationship between initial psychological response to diagnosis of diabetes mellitus & its impact on subsequent management

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Background & objectives: To test the hypothesis that a relationship exists between emotional reaction to diagnosis and the subsequent adherence to diet and exercise regimen, and to correlate the responses of subjects with factors like knowledge about diabetes and education status.

Methods: Fifty randomly selected established cases of type 2 diabetes patients attending the diabetes clinic at Safdarjung Hospital were interviewed with a questionnaire designed to elicit the reaction to diagnosis and adherence to the diet and exercise regimen among them. Responses were analyzed after content analysis to achieve the objectives. Chi-square test was applied to determine statistical significance.

Results: The patients with positive feelings at the time of diagnosis were better adherent to exercise regimen (63%) than those with negative feelings (29%), (P=0.0377). The difference in adherence to dietary plan, however, was not found significant. Also, 56 per cent males were adherent to exercise against 24 per cent adherence shown by females. The patients who were fully explained about diabetes by physician showed better adherence to exercise than those who were not (62% against 28%).

Interpretation & conclusions: Patients with negative feelings and less knowledge about diabetes at the time of diagnosis showed poor adherence to self-management regimen. The physicians need to understand the emotional state of the patients at the time of diagnosis and provide them sufficient information about the condition for better response to the prescribed self management plans.

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rRNA amplification based molecular diagnosis of tuberculosis

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Background & objectives: Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis. It can affect the lungs (pulmonary tuberculosis) or the intestines, meninges, bones, joints, lymph nodes, skin and other tissues (extra-pulmonary tuberculosis). Early diagnosis is the key to treatment. The study aimed to detect isothermally amplified rRNA targets using specific DNA probes for the rapid diagnosis of tuberculosis and thereby frame novel diagnostic criteria for early inception of treatment.

Methods: Twenty patients, with clinically suspected TB were included in the study. Sputum, pleural, pericardial and synovial fluids, CSF samples, pus and biopsy specimens were collected and treated by standard protocols. AFB was detected by ZN-staining. Part of the treated samples was simultaneously inoculated in solid and liquid culture media. The Amplified Mycobacterium tuberculosis Direct Test (Gen–Probe Inc., Calif) was performed according to manufacturer’s guidelines. The results from smear, culture and AMTDT were compared. Confirmation of culture positive samples was done using Accuprobe.

Results: The sensitivity, specificity, positive and negative predictive values for AMTDT in pulmonary specimens were 81, 100, 100 and 66 per cent respectively. The parameters were 66, 100, 100 and 66 per cent for extra-pulmonary specimens.

Interpretation & conclusion: The AMTDT is useful for rapid diagnosis of TB.

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Knowledge about attitude towards & practices regarding neurocysticercosis among people with epilepsy

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Background & objectives: Several myths and misconceptions regarding transmission, prevention and treatment of Taenia solium cysticercosis are prevalent in the community. We evaluated knowledge about, attitudes towards and practices (KAP) regarding cysticercosis among people with epilepsy.

Methods: Structured questionnaires concerning transmission, prevention and treatment of cysticercosis and personal hygiene were administered to patients attending an epilepsy clinic.

Results: There were 182 subjects [125 males (69%); 57 females (31%); mean (± SD) age: 24 ± 14 yr]. Eighty seven (48%) subjects were unsure about the cause of their epilepsy. Thirty nine per cent believed that a worm responsible for their epilepsy and this was found in cabbages; therefore it could be acquired by eating raw cabbages. Only 14 subjects (8%) believed that pigs normally harboured the worm and 28 subjects (15%) believed that poor personal hygiene was responsible for acquiring the worm. Fifty three (29%) were unsure about preventive steps against cysticercosis. Fifty six (31%) were aware of a quack who removed worms though the nose. Eighty nine (49%) subjects were non-vegetarian. However, only 14 (8%) subjects accepted to having consumed pork.

Interpretation & conclusion: There is a need to disseminate awareness about the methods of prevention of transmission and the treatment of cysticercosis. A number of people believe that the worm that may be responsible for neurocysticercosis, can be removed by quacks.

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Cytotoxicity & inhibition of cyclooxygenase-2 by curcumin & diallyl tri sulphide in head & neck cancer cell line

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Background & objectives: To study the effect of curcumin and diallyl trisulphide (DATS) on cytotoxicity and inhibition of cyclooxygenase-2 (COX-2) in head and neck cancer cells.

Methods: MDA 686LN, a HNSCC cancer cell line, was treated with DATS and curcumin individually for 24, 48 and 72 h with a 0 h control in triplicates. The cells were harvested with trypsin and cell viability was determined by trypan blue dye exclusion assay. Total RNA, isolated by TRIZOL method was the template to synthesize cDNA using both oligo-dT and random hexamer primers. Gene expression of COX-1 and COX-2 was analysed by RT-PCR and compared with b-actin using specific primers.

Results: The study showed that the IC_{50} values for both DATS and curcumin was 5 M. With regard to the regulation of COX-1 and COX-2 expression, curcumin and DATS inhibited COX-2 only.

Interpretation & conclusions: Currently, curcumin has been introduced into clinical trials in the chemoprevention of HNSCC and the only difficulty is its bioavailability. The cytotoxicity study, using the HNSCC cell line namely MDA 686LN indicated that curcumin and DATS have greater effect on the cell viability. It is proposed that, the synergistic effect of the combination of curcumin and DATS should be greater than the individual compounds. Further studies in this aspect are currently taken up.

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Hyperinsulinaemia, IGF-1 & its relation with IGF-1 in cancer patients: A pilot study

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Background & objectives: To investigate the role of insulin in carcinogenesis by studying effects of hyperinsulinaemia on circulating IGF-1 levels in cancer patients. Role of insulin/IGF-1 axis in enhancing tumour cell proliferation has been demonstrated. We postulate that hyperinsulinaemia may increase IGF-1 levels, which could contribute to carcinogenesis.

Methods: Fasting glucose, IGF-1 (IRMA) and fasting insulin (RIA) were assayed in 60 cancer patients (age range 16-70 yr) who had solid malignant carcinoma and had not received any treatment. Insulin sensitivity, a marker for hyperinsulinaemia was calculated by HOMA-IR method. The same was correlated with IGF-1 levels.

Results: IGF-1 levels increased with decrease in insulin sensitivity (P<0.012). Insulin sensitivity was low in patients with high IGF-1 levels (P<0.05) and significantly low in patients below 40 yr of age (P<0.015).

Interpretation & conclusions: The study showed a significant increase in IGF-1 levels with decrease in insulin sensitivity. The correlation was more significant in patients below 40 yr of age. Hyperinsulinaemia could increase IGF-1 levels which in turn contribute to carcinogenesis. In young patients, IGF-1 may play a larger role in carcinogenesis, due to predominance of genetic defects. There is no direct cause-effect relation between insulin/IGF-1 and cancer hence larger controlled studies are required to ascertain the role of insulin in cancer.

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Evaluation of the hepatoprotective effect of Indian medicinal plants against D-galactosamine induced hepatotoxicity in rats


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Background & objectives: To evaluate the hepatoprotective effect of two Indian medicinal plants (Tephosia purpurea Linn. and Tecomella undulata) in an experimental model of hepatotoxicity induced by D-galactosamine, a hepatotoxin.

Methods: The study was initiated after obtaining the Institutional Animal Ethics Committee permission. Healthy Wistar rats (N=48) were divided into 8 groups of 6 each. The animals were pre-treated with test drugs (0.2 and 0.6ml/200g of Tephosia purpurea and 25 and 75 mg/200gm of Tecomella undulata) for 28 days. Silymarin (70mg/kg) was administered in divided doses intraperitoneally 24 h prior to hepatotoxin administration. D-galactosamine (D-gal) was administered i.p. in a total dose of 1.5gm/kg in 6 divided doses on 29th and 30th days. The parameters assessed both before and after D-gal included liver enzymes, liver antioxidant enzymes and histopathology of tissue.

Results: Significant increase was observed in SGOT (2736.08 ± 2960.57; \( P < 0.05 \)) and SGPT (2538.56 ± 2112.87; \( P < 0.05 \)) in disease rats as compared to normal rats [SGOT (219.55 ± 78.3); SGPT (128.31 ± 51.30)]. Silymarin administration reduced the enzyme levels significantly SGOT (318.65 ± 64.90; \( P < 0.05 \)); SGPT (120.23 ± 77.92; \( P < 0.05 \)). Both plant extracts (Tephosia at 0.2ml/200 g and Tecomella (both concentrations) decreased the liver enzymes as compared to disease rats although not statistically significant. Variable effect was observed on antioxidant enzymes.

Interpretation & conclusion: The plant extracts demonstrated hepatoprotection in the given doses. However, more detailed dose-ranging studies are needed to confirm this effect.

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Effect of selected Indian medicinal plants on Fangiogenesis using chick chorio allantoic membrane model


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Background & objectives: To evaluate the effect of two Indian medicinal plants on angiogenesis using the chick chorioallantoic membrane (CAM) model.

Methods: The study was initiated after obtaining the Institutional Animal Ethics Committee permission. 4 day old embryonic eggs (n=90) of white leghorn chickens were procured from CPBF Poultry farm, Goregaon. They were incubated at 37ºC, in a humid environment. On the day 5, the eggs were divided into 15 groups [I-normal control; II-VII-6 concentrations of Aegle marmelos (1, 5, 10, 25, 50 and 75 mg/ml); VIII-XII–6 concentrations of Glycerrhiza glabra (1, 5, 10, 25, 50 and 75 mg/ml); XIII–pyruvic acid (pro-angiogenic agent 5 mg/ml); XIV-erythopoietin (pro-angiogenic agent 10 IU/ml); XV-heparin (pro-angiogenic agent 5 mg/ml)]. The eggs were inoculated with the different study drugs, sealed with parafilm and re-incubated. CAM of the eggs was removed on day 12 and processed to estimate haemoglobin content to measure the extent of angiogenesis. Quantification of the number of blood vessels was also done using stereomicroscope.

Results: Aegle marmelos, at concentrations ranging from 10-75mg/ml, showed a significant decrease in haemoglobin content (\( P < 0.05 \)) as compared to normal control while its effects were comparable to that obtained with heparin. The effect of Glycerrhiza glabra was variable with lower doses (1-25 mg/ml) showing pro-angiogenic effect which decreases at higher concentrations.

Interpretation & conclusion: Thus Aegle marmelos at concentrations ranging from 10-75 mg/ml, demonstrated an anti-angiogenic effect while Glycerrhiza glabra demonstrated a pro-angiogenic effect. Further studies are needed to confirm these results in other experimental models.

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Study exploring apt responders to cardiac resynchronization therapy in heart (search) failure patients

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Background & objectives: Electrical dyssynchrony (E. dyss) as a marker of mechanical dyssynchrony (M. dyss) in selection criteria for cardiac resynchronization therapy (CRT) in advanced heart failure (HF) not only leads to development of “non-responders” but also leaves out a potential number of patients who might actually benefit. In this study, we decided to evaluate the incidence of E. dyss and M. dyss among patients with HF and identify “potential responders” to CRT.

Methods: Fifty five consecutive patients attending cardiology outpatient clinic in a tertiary care hospital with symptoms of HF, left ventricular ejection fraction (LVEF) < 35 per cent were evaluated prospectively from June 2005 to September 2006 using Std 12 lead electrocardiogram (ECG) at 25 mm/s and 50 mm/s, echocardiographic evaluation for M. dyss and 6 min walk test (6 MWT) to validate NYHA functional class.

Results: M. dyss was present in 21.8 per cent, E. dyss in 29.09 per cent of all patients. 37.75 per cent of patients with E. dyss had M. dyss as compared to 15.3 per cent of patients without E. dyss. 18.18 per cent belonging either to NYHA functional class III or IV had significant M. dyss, and 50 per cent of these patients had E. dyss.

Interpretation & conclusions: Only half of the 12 patients (18.18%) likely to benefit from CRT had E. dyss. However, M. dyss was more prevalent in patients with E. dyss. Thus, none of these parameters being independent of each other, a multifactorial approach giving appropriate importance to both M. dyss as well as E. dyss to evaluate best candidates for CRT is suggested.

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Extent & nature of off-label drug use in children admitted to a paediatric general ward

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Background & objectives: Off-label drug use refers to use of drugs outside the conditions of product license. It is a world-wide phenomenon. However, hardly any data are available regarding off-label drug use in Indian children. This study was undertaken to determine the magnitude and nature of off-label drug use in children admitted to paediatric general ward.

Methods: A total of 600 consecutive patients aged 1 month-12 yr admitted to the general paediatric wards in a tertiary care center in Mumbai were prospectively enrolled in this exploratory observational study after obtaining approval from the institutional ethics committee. Standard intravenous fluid preparations, topical preparations, nutritional supplements and drugs given by nebulization were not analyzed. British National Formulary (BNF) edition 2005 was used to ascertain if the drug use was “off-label”. The off-label use was categorized as: off-label for age, dose, indication, frequency of administration or route of administration. Descriptive statistics was used for determining the off-label drug use.

Results: 2064 of the 2906 prescriptions received by study subjects were analyzed. 1045 (50.62%, 1.74 ± 1.56 off-label prescriptions/patient) prescriptions were off-label. The maximum rate of off-label drugs was seen in infants (2.33/patient); 542 (90%) subjects received at least one off-label prescription. ‘Alteration in dosage’ was by far the commonest reason for off-label use; followed by ‘age’ and ‘indication’. Furosemide (intravenous, i.v.), diazepam (i.v.), cefotaxime (i.v.), ethambutol (tablet) and prednisolone (tablet) were the five commonest off-label drugs used in the study population.

Interpretation & conclusions: Off-label drug use was highly prevalent in general paediatric ward of a tertiary care hospital in Maharashtra, India.

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Study of drug addiction among hospital staff

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Background & objectives: Drug addition is an important social and health problem in student community. Objectives of the study were to study magnitude of the problem of addiction among medical, paramedical workers (PMW’s) and non medical workers (NMWs), and to ascertain pattern, reason and the period of initiation of addiction and assess level of knowledge about hazards of addiction.

Methods: Study was conducted among 336 hospital staff of KIMS, Karad (July 2007) (sample size calculated by n=4pq/L^2). Pre-tested anonymous, self administered questionnaire were prepared and supplied to respondents, with assurance of confidentiality. Statistical analysis was done by proportions and chi-square test.

Results: Most respondents knew that addiction is harmful (95.23%) regardless of this, more than half (54.46%) had some or other addiction. Gender of the respondent is not playing any role in having addiction (P>0.05) however, use of Misri was more prevalent among female respondents. Pan was most commonly used (41.66%) followed by alcohol (27.38%). It was observed that 47.82 per cent of smokers were doctors. Majority of respondents started addiction during initial period of their employment (54.09%). Enjoyment and peer pressure were significant reason for being addicted.

Interpretation & conclusions: Smoking was prevalent among doctors while NMWs were multiple drug users. Male and females were equally susceptible for addiction. Starting of addiction was common during initial period of employment, so health education during job training may reduce problem. Hospital staff has more risk of addiction than general population, which may be attributed to job specific stress, strain and lifestyle factors.

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Awareness of medical ethics among medical students


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Background & objectives: Medical ethics has now become and important component of medical practice and research. Objectives of the study were to study the level of awareness of ethics of medical profession and suggest recommendations to improve awareness regarding medical ethics.

Methods: The study was done among the1st, 2nd, 3rd, 4th year students of M. R. Medical College, Gulbarga, during the period of June-August, 2007. A total of 158 students constituted the sample study out of 474 students. Systemic random sampling was done to select the students for the study. Total numbers of students/sample size=470/158H^3. So every third student were selected for the study. A pre-tested proforma consisting of 21 questions on medical ethics was distributed to the medical students by the investigators. Scoring was done for awareness regarding medical ethics by 3 senior faculty members. Score were graded as follows above 50 good, 34-50 fair, 20-33 satisfactory, less than 20 poor and 63 was the maximum score.

Results: Only 6.28 per cent of the students had good knowledge, 67.92 per cent had fair knowledge, 24.52 per cent had satisfactory knowledge and 1.25 per cent had poor knowledge.

Interpretation & conclusions: As 25.8 per cent student had unsatisfactory awareness, there is a need for stressing the medical ethics at the start of their course which improves the relation between doctors and community.

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Incidence of d4t/ZDV induced hyperlactataemia in HIV-1 +ve patients - A cross-sectional study


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Background & objectives: Since studies related to antiretroviral (ARV) toxicity are few in India, we decided to evaluate the incidence of ARV induced hyperlactataemia and correlate it with sex, age, CD4 counts, duration of treatment and nature of treatment.

Methods: Venous blood samples from HIV-1 +ve patients on HAART presenting to the institution were analyzed for lactate levels at a single time point irrespective of duration of treatment. A total of 121 samples were studied over a three month period.

Results: The incidence of hyperlactataemia was found to be 23.14 per cent (28 out of 121). Incidence in males and females was 30.23 and 19.23 per cent respectively. Also 80.16 per cent of hyperlactataemic patients were on ARV combinations containing d4t while 15.70 per cent were on ZDV containing ARV combinations. The correlation between the duration of treatment of hyperlactataemic and normolactataemic patients was not found to be significant.

Interpretation & conclusions: In our study, asymptomatic hyperlactataemia showed a greater female predilection. Also since hyperlactataemia seems to be more commonly seen in patients on d4t and ZDV, there should be regular lactate monitoring in patients on these drug regimens. Also, prospective studies with larger sample sizes need to be undertaken to establish the role of other risk factors for hyperlactataemia. Non d4t based regimens should also be compared in prospective clinical trials.

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Manipur colostomy kit

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Background & objectives: Colostomy is a surgically created opening of large intestine to the anterior abdominal wall. Colostomy devices are used to collect the extruded feaces. Devices commercially manufactured in India, are either bulky or cumbersome to use or, are expensive. We designed a cheap, yet effective, alternative – Manipal colostomy kit. Methods: A prototype was made with collaborative work between surgeons and prost hodontists at Manipal University. The device was made by cutting out the neck of a 450 mg canister in which dental acrylic is commercially dispensed. 19 gauge stainless steel wires were cut in the shape of hooks, and then embedded using acrylic. All materials were non-reactive and would cost Rs. 50/-. It was used by the patient by attaching belts with clips on either end. The purse string plastic bags used for distributing sweets at South Indian marriages, called kalyana bags in Tamil Nadu, was the disposable collecting device.

Interpretation & conclusion: Patients who underwent colostomy were equipped and educated about the appliance. Compliance and patient satisfaction was good. As with all colostomy devices, peri stomal leak can be a problem with this device also. Proper contouring by the technician in the prosthodontics department and use of elastic belts help reduce this distressing problem.

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Prevalence of attention deficit hyperactivity disorder in primary school children

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Background & objectives: The main aims of the study were to identify the prevalence of attention deficit hyperactivity disorder (ADHD) in primary school children, identify the presence of any co-morbid factors associated with ADHD and elicit the drug history in order to identify any possible association with ADHD.

Methods: A total of 636 children aged between 6 and 11 yr were selected from four schools in Coimbatore district after obtaining informed consent from their parents. The presence of ADHD was assessed by using Conner’s Abbreviated Rating Scale (CARS) given to parents and teachers. The children identified as having ADHD were assessed for the presence of any co-morbid factors by administering Children’s Behavioural Questionnaire (CBQ) to the teachers and Personal Information Questionnaire to the parents.

Results: The prevalence of ADHD among primary school children was found to be 11.32 per cent. Prevalence was found to be higher among the boys (66.7%) as compared to that of girls (33.3%). The prevalence among lower socio-economic group was found to be 16.33 per cent and that among middle socio-economic group was 6.84 per cent. The prevalence was highest in the age group 9 and 10 yr. No significant association between the incidence of ADHD and drug history or any other co-morbid factors could be identified.

Interpretation & conclusions: The present study showed a high prevalence of ADHD among primary school children with a higher prevalence among the boys than the girls. This is consistent with the results of the previous studies. This study also indicates the necessity of early identification of ADHD.

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Matched case-control study of risk factors (RFS) associated with coronary heart disease (CHD)

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Background & objectives: CHD is due to interplay of a number of factors. The objective of the study was to assess the association of various risk factors related with CHD.

Methods: This was a hospital-based case-control study carried out in Osmania General Hospital (OGH). Interview and study of 50 cases (i.e., patients diagnosed with CHD) in cardiology wards, OGH and 100 controls (i.e., people at OGH without CHD but with or without other ailments) was done using a pre-designed questionnaire.

Results: Among males odds ratio (OR) was greatly significant for non-traditional RFs as: family history of obesity (OR 15.47), anaemia (10.4), less consumption of fruits and vegetables (7.9), chronic kidney disease (4.57). Conventional RFs with significant OR were hypertension (5.31), stress (4.3), increased meat consumption (3.7), sedentary lifestyle (3.5), family history of hypertension (3.27), obesity (2.92), entire egg vs. only egg white consumption (2.8), alcoholism (2.63), type A personality (2.47), saturated vs. unsaturated cooking oil (2.45), tobacco use (2.25), family history of CHD (2.09), etc. Among females, certain non-traditional RFs with significant OR were- family history of obesity (10.6), anaemia (3.85), regular use of drugs as NSAIDS (2.19). OR of conventional RFs was hypertension (16.6), obesity (7.53), stress (6.0), tobacco use (6.0), entire egg vs. only egg white consumption (6.3), saturated vs. unsaturated cooking oil (3.43), type A personality (3.27), family history of CHD (2.32), sedentary lifestyle (2.26), alcoholism (2.04), etc.

Interpretation & conclusions: Certain non-traditional RFs as family history of obesity, anaemia, chronic kidney disease, reduced consumption of fresh fruits and vegetables, regular use of drugs as NSAIDS, were found to be rampant. Also evidence is established for an association between CHD and the traditional RFs. Significance of diabetes was found low both in males (OR 1.57) and females (OR 1.23).

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Spectrum of bacterial isolates in the medical intensive care unit (MICU) of a tertiary care centre in Pune

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Background & objectives: The present study was undertaken to determine the bacterial flora prevalent in the MICU and their antibiotic sensitivity profiles. This would enable the Hospital Infection Control Committee to formulate accordingly an antibiotic policy, which would in turn avoid drug overuse and misuse, thus curbing the emergence of drug resistant strains.

Methods: 40 samples (blood, CSF, pus, stool, urine, sputum, etc.) of MICU patients were sent in appropriate sterile containers and received by the hospital infection section for culture and sensitivity. The study was done over 2 months in 2007. The samples were processed and organisms identified by conventional bacteriological techniques. Antimicrobial sensitivity testing was done by Kirby-Bauer’s disc diffusion method. The following antibiotics were tested: amikacin, ampicillin, cefotaxime, cotrimoxazole, ciprofloxacin, chloramphenicol, cefepime, ceftazidime, cefazolin, erythromycin, furazolidone, gentamicin, imipenem, penicillin, tetracycline, teicoplanin and vancomycin. The results were interpreted as per the NCCLS guidelines.

Results: Majority of the samples received were blood (35%). Of the total, 37.5 per cent were culture positive. Gram negative bacilli showed preponderance, with Escherichia coli predominating (29.4%). All isolates showed multi-drug resistance to first-line drugs. Imipenem was the only second-line drug which showed promising results i.e., 87.5 per cent activity.

Interpretation & conclusions: It is alarming that almost all our MICU pathogens were resistant to first-line drugs. This calls for urgent change in our antibiotic policy with selection of appropriate antibiotics and recycling of drugs. Constant monitoring of antibiotic sensitivity patterns of pathogens in the MICU is the need of the hour to prevent drug overuse and misuse, and thus avoid the emergence of drug resistant organisms.

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Study of hand manifestations in scleroderma patients in Kasturba Hospital, Manipal


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Background & objectives: The main objectives were to study the primary presentation of patients of scleroderma in the hospital, to know the age and sex composition of the study population and to study the pattern of hand manifestations and the frequencies of their occurrence in patients with scleroderma.

Methods: During the period of 1995–2005, 99 cases of scleroderma were diagnosed in Kasturba Hospital, Manipal. The addresses of these patients were obtained from the MRD and they were re-called for evaluation of their hand manifestations. Sixty five patients reported to the Orthopaedics OPD from April 15, 2007 to June 15, 2007. Six patients did not have any hand involvement and were excluded from the study. The remaining 59 patients formed the study population. Patients having hand manifestations in the form of thickening of skin, Raynaud’s phenomenon, telangiectasia, flexion deformity, gangrene, osteomyelitis and amputations were included in the study. Their name, age and sex were collected and an orthopaedic surgeon using self-evolved criteria confirmed the hand manifestations.

Results: A majority of the 59 patients of scleroderma that we examined were females (91.5%) in the 30–50 yr age group. Most patients (60%) presented primarily to the Skin department. Thickening of the skin over the dorsum of hand and digits was the most common hand manifestation and was present in two-thirds of the patients. Raynaud’s phenomenon was seen in almost half of the patients. Fixed flexion deformity at the proximal and distal interphalangeal joints was present in 50 per cent of patients and digital ulceration in 32 per cent. Other findings were calcinosis, telangiectasia, first web space contracture, osteomyelitis, digital gangrene and amputation.

Interpretation & conclusion: Hand manifestations were common in patients with systemic sclerosis. In our study, the female preponderance was much more than the documented studies. Late manifestations like gangrene and amputations were rare probably due the earlier presentation and management.

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Sucrose for the relief of pain associated with immunization injections in infants

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**Background & objectives**: A double blind randomized controlled trial was done to evaluate the efficacy of sucrose for the relief of pain associated with immunization injections in infants.

**Methods**: A total of 50 healthy infants (mean age 3.3 ± 1.7 months) brought to the paediatric OPD of our tertiary hospital for their routine 6, 10 and 14 wk oral polio vaccine (OPV) and diphtheria pertussis tetanus (DPT) intramuscular immunization, were randomized to receive by mouth 2 ml of sucrose solution (75% w/v) or distilled water (placebo) before the injection. A blinded observer analyzed video recordings of each injection procedure to measure the duration of crying and to score the Modified Behavioral Pain Scale (MBPS), an infant pain assessment tool.

**Results**: There was a significant reduction in crying times and pain scores in the group receiving sucrose as against the controls. The mean ± SD crying time in seconds for the sucrose group (n=25) was 28.28 ± 9.82 vs. 44.60 ± 11.64 for the control group (n=25; \(P<0.0001\)) using t test. The MBPS score after injection for sucrose was 6.80 ± 0.71 vs. 7.24 ± 0.66 for controls (\(P=0.0344\)) by the Mann-Whitney U test.

**Interpretation & conclusions**: Oral sucrose solution can be used as an analgesic in infants undergoing immunization by intramuscular injection.

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Microalbuminuria - its association with left ventricular hypertrophy in hypertensive adults


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**Background & objectives**: Left ventricular hypertrophy (LVH) is the most common complication in hypertensive adults. Microalbuminuria (MA) is an integrated marker of cardiovascular disease and also associated with LVH. The aim of this study was to determine if there is a relationship between the levels of MA and extent of LVH.

**Methods**: We compared the levels of microalbuminuria and left ventricular mass index (LVMI) in 25 patients with essential hypertension in the age group of 45 to 65 yr. Microalbuminuria was measured from spot morning urine samples by turbidometry method. Left ventricular mass was calculated from echocardiogram readings (Two-dimensional, targeted M-mode) using the formula validated by Devereux. LVMI was obtained by dividing left ventricular mass by body surface area.

**Results**: The microalbuminuria and left ventricular mass index values were correlated (\(r = 0.51, P<0.05\)).

**Interpretation & conclusions**: As our initial studies suggested a positive association between microalbuminuria and left ventricular hypertrophy levels, we would like to continue our study in a larger scale.

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Is arthroscopic synovial biopsy helpful in clearing the diagnostic dilemma for chronic knee synovitis?


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**Background & objectives**: Patients with chronic synovitis usually present with knee pain and swelling. Since the clinical, radiological and serological workup is often clueless in these cases, the objective of our study was to assess the role of arthroscopic synovial biopsy in diagnosis of chronic knee synovitis.

**Methods**: A retrospective study was conducted on 204 patients who underwent arthroscopic synovial biopsy for chronic synovitis from January 2003 to April 2007 in Kasturba Hospital. The data were collected from standardized Kasturba Hospital Arthroscopic Registry. Only 98 (48%) patients had pre-operative clinical impression.

**Results**: After arthroscopic synovial biopsy, the cases were accurately diagnosed as- chronic reactive synovitis (26.4%), synovial chondromatosis (23.03%), rheumatoid arthritis (16.66%), tubercular synovitis (14.7%), pyogenic arthritis (9.31%), pigmented villonodular synovitis (2%), lipoma arborescence (2%) and Hoffa’s disease, dendritic synovitis, synovial lipomatosis, glomus tumour, eosinophilic synovitis, leucocytoclastic synovitis, localised synovial haemangioma (1% each).

**Interpretation & conclusion**: Arthroscopic synovectomy is an excellent tool to clear the dilemma of undiagnosed chronic knee pain and synovitis. It removes pathological synovium, pannus, and inflammatory substances, improves cartilage nourishment and prevents arthritis. An early and accurate diagnosis helps in the initiation of appropriate treatment and prevents long-term morbidity.

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Incidence of diabetic retinopathy among the diabetics in Bijapur

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**Background & objectives**: It has been found that diabetic retinopathy (DR) is the leading cause of visual disability and blindness among diabetic patients. Hence, we studied the incidence of DR among type 1 and type 2 diabetes mellitus in Bijapur.

**Methods**: A total of 202 diabetic patients with ocular complaints were examined from 15th June, 2007 to 15th September, 2007 using fundoscope and stereoscopic binocular slit lamp after dilating their pupils using tropicamide topical solution.

**Results**: We found that 18.32 per cent patients had DR, and 0.99, 5.94, 1.49 and 1 per cent patients with history of <5, 5-10, 11-15 and >15 yr of known diabetes respectively, had non-proliferative diabetic retinopathy (NPDR); 0.99, 0.29 and 1.98 per cent patients with history of 5-10, 11-15 and >15 yr of known diabetes respectively, had NPDR with clinically significant macular oedema (CSME); and 0.49, 1.49 and 0.99 per cent patients with history of 5-10, 11-15 and >15 yr of known diabetes respectively, had proliferative diabetic retinopathy (PDR).

**Interpretation & conclusions**: Our findings show that roughly 50 per cent patients with history of diabetes of ten yr or more show retinopathy changes of atleast mild-NPDR form which has chances of progressing to PDR or advanced diabetic eye diseases, if sugar level is not kept under control or if laser treatment is not given on time.

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Redefining the World Health Organization algorithm for diagnosis of pneumonia with simple additional markers

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Background & objectives: WHO guidelines for primary care of children with tachypnoea indicate that all such children should receive antibiotics for presumed pneumonia. This study was done to examine the value of additional markers like history of previous respiratory distress and response to bronchodilator (BD) to redefine these guidelines.

Methods: Fifty children between 6 and 59 months presenting with cough and tachypnoea were analyzed for presence of fever. Those who were febrile were put on antipyretic to look for resolution of tachypnoea. Those who showed persistent tachypnoea after antipyretic and those who were initially afebrile became the core subgroup of the study and were analyzed for history of previous episodes of respiratory distress. Those who gave a positive history were challenged with bronchodilator (BD). The association of persistent tachypnoea after bronchodilator therapy and pulmonary infiltrates on chest x-ray (gold standard for the study) was recorded.

Results: Persistence of tachypnoea after BD therapy was associated with pulmonary infiltrate in 7/8 (87.5%) whereas tachypnoea persisted in 9/30 (30%) of those without infiltrates \( (P<0.001) \). So, if one considers persistence of tachypnoea as a diagnosis of pneumonia, then it is associated with radiological diagnosis of pneumonia \( (P<0.0001) \). The proposed algorithm brings down the overuse of antibiotics from 78.9 to 26.3 per cent \( (P<0.001) \) and also brings down the underuse of bronchodilators from 78.9 per cent to 21.1 per cent \( (P<0.001) \).

Interpretation & conclusions: Adding simple markers like history of previous respiratory distress and response to BD therapy to the existing WHO guidelines it is possible to reliably differentiate pneumonia from acute exacerbation of asthma. Such an approach reduces overuse of antibiotics and also prevents under use of bronchodilators.

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Oral granisetron for prevention of post-operative nausea & vomiting after major gynaecological surgery

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Background & objectives: Post-operative nausea and vomiting is one of the most common postoperative symptoms experienced by up to 70 per cent of patients. In this prospective, randomized, double-blind, placebo-controlled study; we evaluated the efficacy of the oral anti-emetic granisetron for the prevention of post-operative nausea and vomiting in 20 healthy women undergoing major gynaecological surgery.

Methods: Patients received either granisetron 2 mg \( (n=10) \) or placebo \( (n=10) \) orally 2 h prior to surgery with sips of water. Anaesthesia and post-operative medication were the same for all patients.

Results: Complete response defined as no post-operative nausea and vomiting and no administration of rescue antiemetic medication in granisetron group for 0-4 h was 70 per ecnt and for 4-24 h it was 60 per cent. The complete response was 30 per cent in placebo group both for 0-4 and 4-24 h. No clinically significant adverse effects were observed in any of the groups.

Interpretation & conclusions: We compared the efficacy of 2 mg granisetron administered orally for the prevention of post-operative nausea and vomiting in women undergoing gynecological surgery. Pre-operative oral granisetron is effective in controlling post-operative nausea and vomiting.

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Acupressure as an aid in cervical & lumbar spondylitis

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Background & objectives: Given the inability of present day therapy to cure the diseases we decided to study the beneficial effect of acupressure; compare the clinical effects of acupressure and allopathy on 7th, 14th day and on completion of treatment; compare the duration of treatment needed for cure of cervical and lumbar spondylosis by various therapies, and find an effective treatment that has minimum side effects.

Methods: 45 cases of cervical and lumbar spondylosis were divided randomly into 3 equal groups. Group 1 was given regular allopathy treatment with physiotherapy, group 2 was given acupressure and the 3rd group was given combination of groups 1 and 2. The clinical effects of the 3 therapies were compared on day 5, 7 and 14 and on completion of treatment.

Results: We found good efficacy on day 7 & 14 and on completion of treatment, the per cent of side effect and the duration of treatment for allopathy were 0, 13, 27, 80 and 30.53 ± 7.95 days; for acupressure 7, 27, 47, 53 and 24.86 ± 6.83 days; for combination of acupressure and allopathy is 7, 33, 73, 27 and 20.27 ± 4.95 days respectively.

Interpretation & conclusions: The patients treated with combined therapy showed quicker response, higher per cent of clinical efficacy and excellent efficacy rate, had minimum side effects, and the total duration of treatment was also significantly less. Hence the combined therapy of acupressure and allopathy has a better patient compliance; it may be the treatment of choice for cure of cervical and lumbar spondylosis.

Factors influencing development of complications since detection of diabetes mellitus

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Background & objectives: Diabetes is emerging as a major health problem in India. Factors influencing the outcome of the disease are not fully understood. The main objectives of the study were to generate a statistical model using Cox regression method, which will predict the factors influencing duration of development of complications of DM, and to estimate average duration for development of complications of DM.

Methods: The data were collected from the records of patients admitted and diagnosed as a case of DM in KH and MRC, during 1st October 2005 to 31st March 2006. The information about different factors labeled as variable was transformed into electronic data sheet. The significance of association of each factor with development of complications of DM was assessed by applying chi square test. The variables which were statistically significant in univariate Cox regression analysis and are biologically and scientifically important were used to perform multivariate analysis and statistical models were generated.

Results: Younger age was associated with development of complications. Males had more risk of complications. Sedentary occupation had shown greater complications. Habits of tobacco chewing and smoking were associated with development of complications. The case without any treatment had higher risk of complications. Average duration of development of DM complications was 104.9 ± 74.72 months.

Interpretation & conclusions: Onset of DM can be postponed by preventive means. Habits like tobacco chewing should be avoided. Abstinence from alcohol is necessary. Exercise promotion which leads to fall in body weight, blood lipids, and BP should be done amongst patients. The compliance rates for the treatment of DM should be improved though the education directed to patients, families and the community. Thus the development of such statistical model helps the clinician to predict complications and researcher to predict indicators.

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Hepatoprotective effect of selected Indian medicinal plants against paracetamol induced hepatotoxicity in rats


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Background & objectives: To evaluate the hepatoprotective potential of Tephosia purpurea linn. and Tecomella undulata against paracetamol induced hepatotoxicity in rats.

Methods: The Institutional Animal Ethics Committee permission was obtained prior to initiation of study. The study was carried out in 54 rats of either sex divided into the following groups: I - normal control, II - disease control, III - positive control, IV, V, VI - Tephosia purpurea linn. - 3 doses (0.2, 0.4, 0.6 ml per 200 g of rat), VII, VIII, IX- Tecomella undulata-3 doses (25, 50, 75 mg per 200 g of rat). All rats were given respective drugs for 15 days followed by paracetamol 1gm/kg i.p. on 16th day to all groups except normal control. Six hs later the rats were sacrificed after collecting their blood. Following parameters were assessed-liver enzymes (SGOT, SGPT, ALP), liver anti-oxidants (SOD, GSH, catalase) and histopathology.

Results: As compared to normal (SGOT: 180.7 ± 14.36 IU/l; SGPT: 51.96 ± 4.54 IU/l), liver enzyme levels in disease group were increased significantly (SGOT: 489.54 ± 108.24 IU/l; SGPT: 97.46 ± 21.45 IU/l; \( P < 0.05 \)). But among the test drugs only Tephosia purpurea linn. (0.6ml/200g dose) has shown reduced enzyme levels (SGOT: 361.23 ± 105.73 IU/l; SGPT: 86.32 ± 32.26 IU/l) as compared to the disease group. The liver anti-oxidant results were variable and inconsistent.

Interpretation & conclusions: Both the plants did not offer statistically significant hepatoprotection, although favourable results were obtained with medium dose (0.6ml/200g) of Tephosia purpurea linn.

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Association of pharmacokinetic & pharmacodynamic parameters of warfarin with the dose in patients on long term anticoagulation


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Background & objectives: Warfarin is a widely used anticoagulant having a low therapeutic index. There is a wide interindividual variation in pharmacokinetics and pharmacodynamics of warfarin which is also reflected in the warfarin dose requirement. There is a need to develop algorithms for warfarin dose prediction. Hence we decided to assess the correlation between plasma total warfarin level, plasma 7-hydroxypwarfarin level and INR and the daily doses of warfarin in patients on long term anticoagulation.

Methods: Seven ml blood was collected from 25 patients on long term warfarin anticoagulation. Plasma total warfarin and 7-hydroxypwarfarin concentration and INR were determined.

Results: There was a good correlation between INR /plasma total warfarin concentration and weekly dose of warfarin \( (y = 46.73e^{-0.256}, \, r^2 = 0.6487) \). There was a better correlation between INR/ plasma 7-hydroxypwarfarin level and the weekly dose of warfarin \( (y = 156.52e^{-0.279}, \, r^2 = 0.7434) \).

Interpretation & conclusions: Pharmacokinetic parameters along with INR seem to correlate with the daily doses of warfarin in patients on long term anticoagulation. These parameters may therefore be useful for predicting warfarin doses.

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Role of coccidian parasites in causation of chronic diarrhoea in HIV positive patients

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Background & objectives: Since no data are available regarding prevalence of parasite causing diarrhoea in and around Dhule, we decided to study role of coccidian parasite in causation of chronic diarrhoea in patients living with HIV/AIDS.

Method: Stool samples were collected from 52 HIV positive patients having chronic diarrhoea. Saline and iodine preparation was done to examine parasites in wet preparation. Modified ZN stained was used to identify coccidian parasites.

Results: Of the 52 HIV positive patients with chronic diarrhoea, 34 (65%) were found to have parasitic aetiology. Of these 34, in 28 (82%) parasitic diarrhoea was due to coccidian parasites. Isospora was seen in 16/28 of chronic diarrhoeal patients.

Interpretation & conclusions: Present study shows that parasites are the major pathogen causing diarrhoea in HIV positive patients from Dhule and nearby Khandesh area. Isospora was found to be the predominant coccidian parasite causing chronic diarrhoea in patients with HIV infection. Inclusion of modified ZN stain in routine stool examination will help in definite diagnosis of chronic diarrhoea in HIV positive patients and prevent unnecessary antibacterial empiric treatment.

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Urbanization & lipid abnormalities in migrant labourers

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Background & objectives: Progressive urbanization and industrialized lifestyle has led to metabolic syndrome in today’s scenario. Therefore the present study aimed at assessing and comparing the impact of urbanization on the lipid and glucose pattern in urban and rural labourers.

Methods: A cross-sectional epidemiological study was conducted in 50 labourers, 25 each from urban and rural areas. 5 ml of venous blood was collected after an overnight fast of 12 h. This blood sample was used for estimating blood glucose and lipid profile levels. Their diet pattern and lifestyle was determined using a questionnaire.

Results: There was found to be a significant increase in the total cholesterol (149.48 ± 34.96) mg/dl, HDL (47.25 ± 10.76) mg/dl and LDL (85.30 ± 25.16) mg/dl in urban labourers compared to rural laborers (122.00 ± 30.66) mg/dl, (37.21 ± 11.53) mg/dl, (69.84 ± 20.45) mg/dl respectively. Fasting blood sugar levels in urban labourers (129.60 ± 29.65) mg/dl was more than in rural labourers (120.96 ± 18.12) mg/dl, but was found not to be significant.

Interpretation & conclusions: Though the nature of work of labourers remains the same, there has been significant change in the lipid pattern and fasting blood glucose level. Thus we found that urbanization has led to change in lifestyle and dietary habits in migrant labourers and there has been an increase in lipid profile in these migrant labourers.

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Female foetus friendly ultrasonography

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Background & objectives: One of the major misuses of USG is the determination of prenatal sex screening with the intention of termination of pregnancy in the case of female foetus. To restrict the application of ultrasonography in sex screening, The British Medical Journal, The Lancet, reported in early 2006 that there may have been close to 10 million female foetuses aborted in India over the past 20 years. Approximately half a million girls are prevented from being born each year though this technique. This foeticide can be prevented by developing a USG machine incapable of foetal sex determination. In this paper we discuss theoretical basis for construction of such a machine without compromising the use of USG for other purposes.

Theoretical consideration: The invention of medical ultrasonography itself was not due to invention of a unique technique, but rather is a new application of existing knowledge. SONAR had been invented a decade earlier. A medical ultrasound machine consists of two components: a small, freely mobile, hand-held transducer (probe), and a large, but portable, console. The transducer is that device which is held against the skin or other accessible body surface of the patient to send and receive the ultrasound signals. The console processes the ultrasound signals by various kinds of complex electronic circuitry, for real time display on a cathode ray screen, and on video printer paper for detailed analysis and hard copy permanent record keeping, the transducer is tethered to the console by a flexible electric cable. In physics the term “ultrasound” applies to all acoustic energy with a frequency above human hearing (20,000 hertz or 20 kilohertz). Typical diagnostic sonographic scanners operate in the frequency range of 2 to 18 megahertz. The choice of frequency is a Trade-off. Multiple Transducer are used in each transducer with a defined frequency range. A manufacturer’s guide states that it is even possible to vary a frequency within a single transducer. The creation of an image from sound is done in 3 steps - producing a sound wave, receiving echoes, and interpreting those echoes.

Hypothesis: Earliest gestational age at which the testis is identified by the ultrasonography is around 14 - 16 wk. Ultrasonographic viewing frequency is a function of an organ size, shape, and its materialistic (composition) characteristics. Let us identify the gestational period during which maximum sex screening takes place (14 - 18 wk). It is quite a possibility to identify the corresponding viewing frequency for this gestational period. By applying selective frequency inhibition principal let us inhibit this frequency. Consequently sex screening during this period will be difficult by the ultrasound. With advancing gestational age the size and other characteristic properties of testis changes, hence the corresponding viewing frequency changes once the restricted frequency zone is overcome Testis can be viewed normally. Congenital anomalies of testis is associated with a change in its characteristics properties (a different viewing frequency which will not correspond with the meticulously defined restricted frequency zone of normal testis) hence will have no impact on its viewing by ultrasound.

Interpretation & conclusions: We can redefine the application of ultrasonography to address a grave concern of today’s modern society in which the female child are at theat due to unmindful technological advances.

Study of trace elements (Mg, Fe) & oxidative protein damage in diabetic retinopathy

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Background & objectives: The aim of the study was to evaluate the relationship between diabetic retinopathy, serum iron, magnesium and protein oxidation in well defined diabetic patients and normal. The study population comprised of 10 patients of diabetes with retinopathy, 11 patients of diabetes without retinopathy and 11 controls (non diabetic). The groups were well matched by age and gender.

Methods: Serum magnesium level in all the subjects studied by photometric test using xyldyl blue method and iron by ferrozinc method without deproteinization. Advanced oxidative protein products were studied by spectrophotometric method.
Results: We found a significant decrease in serum Mg level in diabetic retinopathy and diabetics without retinopathy when compared to controls (or normal). However, serum iron and advanced oxidative protein products showed a tendency to increase in both diabetics with and without retinopathy when compared to normal.

Interpretation & conclusions: Magnesium is involved at multiple levels in insulin secretion, binding and activity. Cellular Mg deficiency may also alter the activity of membrane bound Na-K ATPase. This may be one of the causes for progression of the disorder. Iron is a catalyst of free radical stress. It has been suggested that free radicals and oxidative process play an important role in the aetiology of diabetes. For the most part, oxidatively modified proteins are not repaired and must be removed by proteolytic degradation and decrease in the efficiency of proteolysis may be a cause for the observed increase in the oxidatively modified proteins.

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Analysis of dyslexic adolescents’ recollections of their schooling years

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Background & objectives: To analyze the recollections of dyslexic adolescents of their schooling years.

Methods: Thirty dyslexic adolescents were interviewed and their responses audiotaped and analyzed by content analysis. Their responses were grouped into themes (classroom teacher, classmates, educational provisions, remedial education, and parents) and graded as being positive, negative, or neutral.

Results: Twenty adolescents (66%) had overall positive recollections, 18 (60%) had negative, and 4 (13%) had neutral recollections about their disability. However, 14 (46%) felt that having dyslexia was an advantage because it entitled them to avail educational provisions. However, 7 (23%) felt that their disability was a disadvantage as it made them different from their peers. Nineteen adolescents (63%) had positive recollections about their class teachers, 16 (53%) had negative and 13 (43%) had neutral recollections. Ten (33%) adolescents felt that remedial education definitely helped them overcome their disability. However, 4 (13%) adolescents felt that classroom teachers and parents should be better informed about dyslexia. Also, 7 (23%) stated that a wider choice of provisions should be made available to dyslexic children. Majority (56%) of adolescents wanted to pursue higher education in a professional course.

Interpretation & conclusions: Majority of dyslexic adolescents had positive recollections of their schooling year, acknowledged that provisions and remedial education had helped them overcome their disability, and had a positive attitude towards their future prospects in life.

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Prevalence of retinopathy of prematurity (ROP) in preterm babies in a tertiary care unit in Tamil Nadu

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Background & objectives: The objectives were to study the prevalence of ROP in preterm babies, and to determine the risk factors associated with ROP.

Methods: Twenty five premature babies born and admitted in NICU at P.S.G. Hospital, Coimbatore, from May 2007 to August 2007 were studied. Ophthalmological examination using a paediatric speculum, wire bectis and indirect ophthalmoscope of + 20 D length was done, initially at the time of discharge of baby and subsequently after 4 to 6 wk. Birth weight, gestational age, foetal and maternal complications and amount of oxygen therapy were recorded for each of the preterm babies in a questionnaire.

Result: No evidence of ROP was detected among the 25 preterm babies. Low levels of oxygen therapy (2 to 6 l flow/min) and advanced ventilation technique employed were attributed as reasons for the non-occurrence of ROP in this set up. The study did not show any significant correlation between maternal and foetal complications and their influence on ROP.

Interpretation & conclusions: Non-occurrence of ROP among the studied sample indicates a long term study involving more number of preterm babies for the detection of ROP with many referrals form the paediatric unit.

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The incidence of adverse drug events with contrast agents used in the radiology department of PSG Hospitals - A prospective study

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Background & objectives: The primary objective was to find the incidence of adverse drug events with contrast agents used in Radiology department, PSG Hospitals. The secondary objective was to study about the use of contrast agents (both ionic and non ionic) in the radiology department (CT and MRI).

Methods: It was a prospective study where patients of various age groups, who had undergone radiological analysis in CT and MRI departments of PSG Hospitals, Coimbatore, for a period of two months, were taken as subjects. Patients who were not given IV contrast agents were excluded. Using a proforma, details about the incidence of adverse drug reactions with the contrast agents, indications of use of contrast agents, previous history of allergy to the contrast or any other drug and precautions taken by the radiologists before administering the contrast were collected and the obtained data were tabulated and statistically analyzed.

Result: This study involved 192 patients for CT studies and 10 patients for MRI contrast studies who were investigated during the study period of two months. In CT contrast enhancement studies, 21 were given ionic agents and 171 were given non-ionic agents. Among the patients who were given ionic agents, 2 experienced allergic reactions and in the non-ionic contrast studies 1 patient experienced adverse drug reactions. In CT, the over all incidence of adverse effects was 1.56 per cent. Incidence with ionic agents was 9.52 per cent and in non-ionic agents was 0.58 per cent. In MRI, adverse effects were nil. Regarding the use of contrast agents, they were widely used in CT enhancements than in MRI enhancement studies. In CT, the contrasts were widely used in brain CTs, than in abdomen and chest. Some of the common indications were headache, hemipariesis, seizures, vertigo, trauma etc. In case of MRI the common indications were glioma, cervical cord lesions, discitis etc.

Interpretation & conclusions: In CT, incidence of adverse drug reactions was more common in ionic agents than in non-ionic agents. Adverse drug reactions were very rare in MRI contrast agents than in CT contrast agents. In CT, non- ionic agents were more commonly used when compared to ionic agents. Usages of contrast agents were very rare in MRI than CT.

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Detection of extended spectrum beta lactamases (ESbL) in the family of *Enterobacteriaceae* at rural hospital

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**Background & objectives:** To know the prevalence of ESbL producing isolates in rural medical college hospital and to analyze the antibiotic profile of ESbL producers. The study also aimed at knowing the susceptibility of other non beta lactam antibiotics.

**Methods:** A total of 468 specimens received in the department were used for the study. All the Gram negative bacterial isolates from the clinical specimen were identified by standard techniques. Antimicrobial sensitivity testing was performed by the disk diffusion method. According to the NCCLS guidelines, these samples were tested for ESbL production by the double disk diffusion synergy test.

**Results:** Pure isolates of family *Enterobacteriaceae* were obtained from 50 samples of total 468. ESbL production was observed in 14 (28%) of isolates by double disk diffusion test. The overall ESbL prevalence of *E. coli* was 50 per cent, *K. pneumoniae* 42.85 per cent, *Proteus mirabilis* 7 per cent and 64.2 per cent of ESbL producers were from inpatients. Susceptibility of ESbL producer to imipenam, amikacin, was found to be 100 per cent. For urine isolates, susceptibility to nitrofurantoin was 71 per cent, susceptibility to gentamycin and ciprofloxacin was 57.14 and 42.85 per cent respectively.

**Interpretation & conclusions:** Resistance to beta lactam containing antimicrobial agents continues to increase frequently due to the presence of beta lactamases in Gram-negative bacteria. This study showed the prevalence of ESbL producers in the family *Enterobacteriaceae*. Detection of ESbL production by disk diffusion test was found to be useful, simple and cost effective test in routine clinical set up. Our study also highlights the co-existence of resistance to other beta lactam drugs and non beta lactam drugs.

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Transvaginal doppler assesment of utero-ovarian circulation in infertility

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**Background & objectives:** To study the pattern of blood flow in uterine and ovarian vessels in infertile females and to study the effect of various drugs on these cycles considering various vascular indices.

**Mehtods:** Forty five infertile females with normal pelvic scans and normal marital relationship with no known systemic or endocrinologic disease were included in the study. Patients were divided in to group A and group B with spontaneous ovulatory cycles and those with anovulatory cycles respectively. Group B was further divided in to B1 and B2 depending on whether oral drug or -HCG was used for induction. Baseline scan was performed on day 2 of menstrual cycle and serial scans were carried out from day 9 to the day of ovulation and after 7 days of ovulation. The scans were done on NEMIO 30 by same radiologist each day. 100 high pass filters was used and uniformly 12 MHz transvaginal probe was used. RI and PI were calculated automatically by the machine and the data were recorded and interpretations were carried out. All thoughout $P$ was less than 0.5.

**Results & conclusions:** Cycles were more regulated in group A. All the spontaneous cycles had 2-4 follicles, whereas in patients induced with -HCG mean number of follicles were 4-9. Mean RI of ovarian artery in early follicular phase in group A was 0.70 whereas in group B mean RI was 0.66. A fall in ovarian artery RI was observed on the side of ovulation about 48 h before rupture of follicle. This could help in ovum harvesting techniques; PI value of uterine artery in 100 per cent of those who conceived was < 2.5 post-ovulation. The patients who could not conceive even after ovulation had higher uterine artery PI values. No significant association was observed with ovarian artery RI values.

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Tracking of blood pressure among adolescents & young adults in an urban slum of Puducherry

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Background & objectives: (i) Track the BP distribution in the 2002 cohort, and assess the tracking of high / low / normotensives. (ii) Measure incidence of HT. (iii) Study relation between BP and HT with age, sex, SES, BMI, physical exercise, salt intake, smoking and alcohol consumption.

Methods: Cohort study of 756 subjects (19-24 yr), in urban field area of Department of PSM, JIPMER (May / November, 2006), by house visits with pre-tested questionnaire, anthropometry and BP measurements.

Results: A total of 555 subjects from the 2002 cohort were contacted (73.4%); 54.5 per cent subjects previously below 5th percentile, 93.6 per cent subjects previously between 5th and 95th percentiles, and 72 per cent of those above 93.6 per cent percentile previously, persisted in the same cut-offs for systolic blood pressure (SBP). The corresponding figures for diastolic blood pressure (DBP) were 46.2, 92.2 and 74.1 per cent respectively. Shift from one cut-off to another was not significant for both SBP and DBP.

Interpretation & conclusions: Prevalence of HT was 9.2 per cent and incidence 1.75 / 1000 yr. Factors significantly associated with HT were age, male sex, BMI > 25 kg/m², salt intake > 10 g/day, family history of HT and sedentary activity. Odds ratios (95% CI) from nested case control study were 8 (2-29) and 25 (9.8-74) for BMI > 25 kg/m² and salt intake > 10 g/day respectively. Relative risk, attributable risk and population attributable risk were 4.1, 76.6 and 13.4 per cent and 1.6, 23.7 and 8 per cent and salt intake respectively.

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A comparative study on the burden of caregivers of cancer & schizophrenia patients

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Background & objectives: In the pursuit of treating the patient, the burden faced by the primary caregiver (family member) is often overlooked. This study was done to analyze the burden on caregivers, factors influencing the same, and the coping methods followed by the caregivers of patients with a physical illness and a mental illness.

Methods: After obtaining informed consent, 60 caregivers of cancer and schizophrenia patients were interviewed for sociodemographic data and the Burden Assessment Schedule, a 40-item instrument was used to assess objective and subjective burden. Analysis was done using SPSS Version 11, t test, mean and standard deviations.

Results: Despite the differences in the nature of the two illnesses, caregivers of cancer and schizophrenia patients were shown to have comparable burden levels. The latter sought external help to cope with the stress to a greater extent (30%) than the former (6.7%). Financial burden was significantly higher in cancer, but disruption of family stability was higher in the case of schizophrenia. Mean burden score was higher in schizophrenia (X=73.06) as compared to cancer (X=70.06). Younger patient age and shorter duration of illness was associated with lower burden. Caregivers in extremes of age and female caregivers had higher burden.

Interpretation & conclusions: There is need to attend to the needs of the caregiver in terms of coping with the demands of care-giving. Though health professionals might not be able to reduce the financial burden, we can provide counselling services and follow-ups to ensure good mental health of the caregiver, thoughout the illness of their loved one.

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A study on the apolipoprotein E. genotyping: A preliminary approach for early cardiovascular disease screening

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Background & objectives: To study the correlation between the Apo E genotypes and premature coronary artery disease in the south Indian population.

Methods: Blood samples collected for routine check up was used in this study. The lipid profiles were analyzed. DNA was isolated from blood by Miller’s modified salting out method. Apo E genotyping was done by sequence specific primer PCR method. Primers specific to E2, E3, and E4 generated at 173 bp. The control primers produced an amplicon at 785 bp. An overall comparison of lipid profiles and Apo E genotype was done.

Results: More than half the individuals showed an altered lipid profile. The E3/E3 allele was seen among 74 per cent of the individuals while E3/E4 showed 22 per cent. The E3/E2 and E4/E4 alleles were of 2 per cent each.

Interpretation & conclusion: The incidence of coronary artery disease (CAD) is on the rise in our community. And it is important to detect the disease at an early stage. Among the different factors ApoE plays an important role since its polymorphism mediates the lipid profile of an individual. Our study indicated that an extensive approach in comparative analysis of Apo E and CAD incidence in Kerala population is warranted.

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HIV: Cutaneous viral infections & the immune status

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Background & objectives: A cross-sectional study was done to find HIV positivity in patients presenting with cutaneous viral infections, correlating with the CD4+ T- lymphocyte cell counts and compare them with age and sex match controls.

Methods: A total of 68 patients including known HIV-positive individuals with various mucocutaneous viral manifestations attending dermatology OPD were studied. The patients were subjected to ELISA testing. HIV-positive patients further underwent CD4 cell count tests, which were correlated with their skin conditions. These cases were compared with a group of 50 age and sex match controls with no known risk factor for HIV.

Results: The most common age group observed in our study was 18-40 yr. *Molluscum contagiosum* was the most common viral infection observed. HIV positivity was found to be high in herpes simplex (50%) and herpes zoster infections (23.07%). The mean CD4 cell count was 113.4 cells/mm³. Prevalence of HIV infection in our study was 22 per cent. This was statistically significant as compared to the prevalence in general population, which is 0.5-1.5 per cent.

Interpretation & conclusions: All patients with cutaneous viral infections should be subjected to HIV testing especially herpes simplex and herpes zoster infections.

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Tamoxifen use & gallstone formation in postmenopausal breast cancer patients in South Indian population

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Background & objectives: To study the association between tamoxifen use and gallstone formation in post-menopausal breast cancer patients in south Indian population.

Methods: Patients, who had undergone surgery for invasive breast cancer in JIPMER and receiving adjuvant tamoxifen from the tumour clinic were recruited for the study. A total of 90 such patients were taken for the study. An equal number of age-matched post-menopausal women were taken as controls. All of them were referred to the Department of Radio Diagnosis for an abdominal ultrasound screening test for gallstones. Presence and absence of gallstones were noted down from their ultrasound scan reports. Pre treatment status of the gall bladder was assessed from the pre operative scan reports.

Results: An odds ratio of 1 was derived when the case group was compared with the control group.

Interpretation & conclusions: Western studies have found a 30 per cent incidence of gallstones in patients who are taking tamoxifen and they have proved a significant association between the two. But in our study we could neither prove such an association nor an increased incidence of gallstones in post-menopausal south Indian women who are receiving tamoxifen.

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Profile of patients with alleged history of self-poisoning presenting to emergency department of a tertiary care hospital

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Background & objectives: The present study was conducted to analyze profile of drugs and poisons used by patients attempting self-harm, to evaluate socio-demographic profile and the economical burden of DSH (Deliberate Self Harm) and to understand psychosocial events leading to DSH.

Methods: One hundred patients with alleged history of self-poisoning in Emergency department (ED) were studied. Institutional Ethics Committee permission was taken. The patients were interviewed after taking consent, data entered into case record form. The tests like chi square test, one-way ANOVA test and frequency analysis were used.

Results: Of all self-poisoning admitted to the ED, 40 per cent were males and 60 per cent were females. Mean age was 26.31 ± 8 yr, for males it was 31 yr, and 23.13 yr for females. The attempt of self-poisoning ratio is higher for women (gender ratio 1.5:1) and youth (15-24 yr). A majority of cases (44%) were having suicidal intention. Prior consultation for problems was found only in patients with suicidal intention (P=0.006), while no one showed consultation before the event. Insecticides (34%) were the most frequent cause of poisoning and domestic poisons were the second (21%), while drugs accounted for (15%). ICU admission was having no significant relationship either with intention of poisoning or with the type of poison used. Total economic burden for 100 patients was INR 8,49,106.00 (to patient and hospital). Per patient cost for ICU stay was INR 46,654.00 while that of General ward patients INR 3557.00.

Interpretation & conclusions: DSH is significantly prevalent in lower socio-economic strata. DSH events are more common in young age group (15-24 yr). Insecticides were the most commonly used agents, others being domestic poison, rat poisons, drugs (PCM, sedative, dexamethasone, aminophylline). Financial problems were the most common reasons for DSH, others loneliness, homelessness, unsuccessful marriage, divorce and poor parent to child relationship. The estimated economic burden of patients of DSH presenting to emergency medicine section is over INR 60,00,000 per year at a single public hospital.

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Serum oxidized low density lipoprotein in Indian patients with heart disease

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Background & objectives: Elevated low density lipoprotein (LDL) levels helps in the penetration of the LDL molecules into smooth muscle and macrophages present in the plaques. LDL is oxidized and converted into oxidized LDL (oxdLDL) which is more atherogenic. Hence we carried out this study in which the serum levels of oxdLDL in Indian patients with coronary artery disease were measured.

Methods: Serum lipid profile and oxdLDL (by ELISA method) were measured in 87 consecutive patients with myocardial infarction (MI), 51 with unstable angina (UA) and 42 with chronic stable angina (CSA).

Results: The serum levels of total cholesterol (Tcholest), LDL and oxdLDL were higher in patients with MI (Mean, Tcholest = 234.91 mg/dl, LDL = 160.49 mg/dl, oxdLDL = 54.846 U/L) as compared to UA (Mean, Tcholest = 209.9 mg/dl, LDL = 136.34 mg/dl, oxdLDL = 47.34 U/L) (P<0.05) by one way ANOVA. However, no difference was seen in the serum levels of these markers between either of MI or UA with CSA (Mean, Tcholest = 226.4524 mg/dl, LDL = 154.45 mg/dl, oxdLDL = 50.61 U/L).

Interpretation & conclusions: Serum OxdLDL may have some role in the pathogenesis of acute coronary symptoms.

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Need-based health educational measures for improvement of knowledge of school going girls on sexual and reproductive health

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Background & objectives: To assess the knowledge status of adolescent school going girls, regarding reproductive health and identify the educational need and finding out of the impact of health educational measures on reproductive health.

Methods: A cross-sectional, interventional study was conducted on students of a higher secondary school of Midnapore with predesigned pretested questionnaires to assess the need of reproductive health. The impact of health educational measures was studied after a health training programme based on the felt needs. A total number of 269 students were included in the sample.

Results: The percentage of student having correct knowledge about menstruation was 52.83 per cent before training which improved to 79.27 per cent after training. Similarly, knowledge of minimum age for conception and ill-effect of teenage pregnancy was seen correct in 44.98 per cent of the student before training and 66.7 per cent after training. Only 48.62 per cent students were aware of the different methods of contraception before training which significantly increased to 90.04 per cent after training. Regarding AIDS correct knowledge was found among 67.78 per cent of student before training and 88.78 per cent after training. Students agreeing sex education is important and should be included in school curriculum was 84.8 per cent which further increased to 94.8 per cent after training.

Interpretation & conclusions: There was a positive impact of health educational measures on reproductive health among the studied student. Similar studies done in West Bengal also showed positive impact of health educational measures. The importance of inclusion of sex education may bring about positive change in knowledge, attitude and practice on reproductive health.

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The rapid diagnosis of urinary tract infection in HIV positive patients

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**Background & objectives:** To develop a simple, cost-effective, rapid diagnostic test for early detection of urinary tract infection in HIV-positive individuals, especially in rural set up.

**Methods:** A total of 400 samples of clean catch midstream urine were collected from 100 HIV-positive individuals, 200 HIV-negative individuals with UTI and 100 normal healthy individuals. The specimens collected were divided into two portions A and B. A was subjected for culture and B for rapid tests, a pack of six biochemical tests 1. Nitrate reductase test, 2. Methyl red test, 3. Voges proskauer test, 4. Urease test, 5. Oxidase test, 6. Indole test. These above chemical tests are done directly in the urine first within 2 h and next after 24 h of sample collection.

**Results:** Out of the 284 UTI positive samples culture, rapid test within 2 h, rapid test after 24 h, figured 100, 95, 95 per cent respectively. From the 100 control samples no false positive results were figured.

**Interpretation & conclusions:** This rapid test having the advantage of providing immediate results, and of being both cheap and easy to perform and interrupt, could be employed in rural health care set up were advanced laboratory facilities lack.

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Adrenocortical & serum lipid responses to acute psychological stress associated with a complex decision making task in healthy young volunteers

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**Background & objectives:** To measure and compare the plasma cortisol responses and the acute serum lipid responses to the Iowa decision making task and the Wisconsin card sorting task.

**Methods:** 30 healthy male volunteers aged 17 to 20 yr were selected. Subjects were randomly assigned 2 groups-1 group performed Iowa gambling task (IGT) while the other performed Wisconsin card sorting task (WCST). The WCST and IGT are neuropsychological tests for assessing frontal lobe function. WCST is dependent on dorsolateral prefrontal cortex (DLPFC) while IGT is dependent on the ventromedial prefrontal cortex (VMPFC). Venous blood samples were collected before and after the completion of the task. Serum cholesterol was measured using an ELISA kit and lipids using enzymatic colorimetric method. Results were analysed using paired t test.

**Results:** There was a significant increase in serum cortisol during performance of IGT but the cortisol responses to WCST were not significant. There were no significant changes in total cholesterol, LDL or HDL for both tasks. A small but significant decrease was observed for VLDL and triglycerides in response to IGT.

**Interpretation & conclusions:** The greater serum cortisol responses to IGT suggest that it activates the hypothalamo-pituitary axis (HPA) to a greater extent and is presumably more stressful. The differences in neural connectivity and functional specialization of VMPFC and DLPFC may explain the differential activation of HPA by these 2 tasks. The lack of lipid responses may be related to the degree of stress elicited by the tasks and the (younger) age group of the individuals.

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Risk factors for diabetic foot among diabetic patients

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Background & objectives: North Kerala has a large population of diabetic patients who are at risk for diabetic foot, a preventable complication. Our study assesses the risk factors for the development of diabetic foot in this population.

Methods: A case control study of 38 diabetic patients with active pedal ulceration and 76 diabetics without active ulceration as the controls was conducted. The groups were matched for age and sex. Data were collected though a questionnaire for history, and foot examination. Statistical analysis was done using SPSS software and significant risk factors were expressed in terms of odds ratio OR and chi square test.

Results: Significant risk factors include symptoms of peripheral neuropathy (OR 3.87) and peripheral vascular disease (OR 2.26) as well as signs, urban residence (OR 2.58), previous ulceration or amputation, presence of foot deformities and skin and nail abnormalities. A once in thee month health check was found to be protective. By logistic regression peripheral vascular disease, peripheral neuropathy and urban residence were found to be independent risk factors (Cox and Snell R² = .406). Both groups were aware of the possibility of this complication, but few in either group used measures such as regular foot inspection or protective footwear.

Interpretation & conclusions: Despite awareness of the problem, few seemed to implement preventive measures. Enquiring for symptoms of peripheral neuropathy or peripheral vascular disease could be a useful screening tool to identify high-risk patients for emphasizing prevention.

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Study of knowledge, attitude & practices regarding biomedical waste management

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Background & objectives: To assess knowledge, attitude and practices (KAP) about biomedical waste (BMW) management among nursing, technical and housekeeping staff.

Methods: The study was conducted between July and August 2007 in the private hospitals and nursing homes in Karimnagar town of Andha Pradesh. There are approximately 267 private hospitals, and clinics. By a systematic random sampling method, 47 private hospitals were selected. And study was performed on 500 study subjects. The KAP of the nursing, technical and the housekeeping staff of the concerned hospitals was assessed though interviews using a structured proforma. A total of 500 persons in different categories were interviewed. Analysis of data was done by using various statistical measures i.e., percentage, chi-square test.

Results: The data were collected from 47 private hospitals having 237 nurses, 131 technicians and 132 housekeeping staff. Assessment of knowledge regarding BMW management among study subjects reveals that 95.8 per cent of subjects had knowledge about the health hazards. Only 1.6 per cent of study subjects had knowledge about the 10 categories of BMW. It is also found that 47.2 per cent of nurses, 26.4 per cent of technicians and 26 per cent of housekeeping staff were having positive attitude towards BMW management (P<0.05). Study also reveals that 45.4 per cent nurses, 25.8 per cent technicians and 13.8 per cent of housekeeping staff are practicing / following BMW management rules (P<0.05).

Interpretation & conclusions: The KAP regarding BMW was found to be insufficient among all the three categories. But on comparison the nurses had a significantly better KAP than the technical and housekeeping staff. Regular training programme about efficient management of BMW are necessary to improve the present situation

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Clinical profile of neuromorbidity in childhood

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Background & objectives: To determine the clinical profile of neuromorbidity in children visiting out patient services or admitted in ward in a tertiary hospital. To study pattern of various neurological diagnosis, subtypes in major diagnostic condition, compliance to advised therapy, awareness of parents on support groups, assess school performance.

Methods: A descriptive study was carried out over a period of 2 months in Command hospital, Pune. Two hundred patients upto 15 yr of age were seen in OPD and ward. Cases with diagnosis compatible with some form of neuromorbidity were studied using a questionnaire. Basis of neurological diagnosis was clinical features and investigations in the form of EEG, MRI, CT, LP, etc. Doubtful cases were reconfirmed by the guide and other faculty in the OPD.

Results: Of the total 200 patients, 2/3rd were males (68.5%) and 31.5 per cent were females. Sixty per cent of them had some degree of malnutrition with grade 2 being most common (40%). Seizures being the most common neuromorbidity (35.5%) closely followed by cerebral palsy (24.5%) and mental retardation (9.5%). Febrile seizures accounted for most common seizure subtype (39.4%) but mostly benign in consequence. Spastic quadriplegia (44.90%) was the most common type of cerebral palsy with commonest co-morbidities being seizures and mental retardation. Among children with seizures, 77.46 per cent were on monotherapy with adequate control, and sodium valproate was the most common anti-epileptic used. One third of the children (33.5%) did not attend school and another 1/3rd performed poorly or very poorly. Of the 38 children who were advised physiotherapy, 84.2 per cent did not attend. Only 1/6th children were on regular physiotherapy. Ninety per cent of the parents were not aware of the concept of attending support groups.

Interpretation & conclusions: Neuromorbidity take major share of OPD time and resources. Seizures, cerebral palsy, mental retardation are the most common. Anti convulsants are effective in majority of seizure cases. Increasing non-adherence to physiotherapy may be because of limited centres with free facility and very slow or no improvement after few sessions. Poor school performance is a major issue. Support groups should be encouraged. Comprehensive approach is the key in management.

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A comparative study of the long-term complication profile of non-obese diabetics on insulin to those on oral hypoglycaemics

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Background & objectives: A comparison of the long-term complications of the non obese diabetics (BMI<=24) on insulin for more than 10 yr compared to those on oral hypoglycaemics.

Methods: Twenty five diabetics each on insulin and oral hypoglycaemics for period of more than 10 year were included in the study. The complication profile was compared in each group by measuring the modalities like HbA1c, lipid profile, blood pressure, ECG, urine routine, fundus examination, neuropathy examination. The onset of the complications was noted down.

Results: It was found that the glycaemic control was better achieved with those on insulin. Those on insulin also had lower BMI compared to those on oral hypoglycaemics. The long-term complications like hypertension, nephropathy, neuropathy, IHD were found to have lesser incidence and had developed later in those on insulin. However retinopathy was found to have a earlier onset among the insulin group, but incidence remained the same in both.

Interpretation & conclusions: The result of our study has shown that the risk of developing complications was less and late in those on insulin. So, early insulin therapy would be certainly advantageous in reducing the risk of the early development of complication among diabetics.

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A clinical trial to evaluate the short-term effect of ‘Brahmi ghrita’ on the psychomotor performance in healthy normal volunteers


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Background & objectives: The search for agents that work on psychomotor performance continues in the absence of any other available safe and effective therapies. In the present study, we evaluated the effect of ‘Brahmi ghrita’, an Ayurvedic formulation containing 4 drugs, on the psychomotor performance in healthy volunteers using Mindomatics software specially designed to assess various aspects of motor and sensory nervous system, comprising 11 tests.

Methods: Following Ethics Committee approval and written informed consent, 20 healthy volunteers were recruited. The software was first standardized by assessing effect of the known stimulant (coffee) and depressant (chlorpheniramine) in these volunteers. The study drug, Brahmi ghrita was administered to the volunteers for one month in a dose of 2 table spoons once daily. The psychometric tests were performed at baseline and after completion of treatment.

Results: Brahmi ghrita enhanced the motor system performance (finger tapping), recent memory (numeric working memory and immediate picture recall) along with attention, integration, co-ordination and sensory-motor performance of brain (choice discrimination and simple reaction time). These effects were statistically significant as compared to baseline. The formulation also increased in central integration and visual motor coordination (choice reaction time, digit vigilance, digit picture substitution, digit letter substitution, digit symbol substitution and card sorting), although not significant statistically.

Interpretation & conclusions: Brahmi ghrita demonstrated improvement in psychomotor performance of healthy volunteers. Further studies need to be carried out to prove its efficacy in cognitive disorders.

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Clinical utility of a battery of laboratory blood tests in general medicine patients

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Background & objectives: To determine if the use of limited tests over a battery of tests would suffice for diagnosis to aid in financial savings.

Methods: One hundred male patients admitted in general medicine ward of a tertiary care hospital formed the study sample. Inclusion criterion was hospital stay of minimum 4 days. Data like clinical history, laboratory investigations with their repetitions, etc. were recorded.

Results: Tests such as complete haemogram (CHG), liver function test (LFT), renal function test (RFT) and serum electrolytes were carried out in all the 100 per cent cases. Investigations for acute febrile illness (AFI) were done in 58 per cent of the total cases. Investigations were repeated less than or equal to 3 times in 100 per cent AFI investigations, 93.5 per cent for CHG, 89.29 per cent for RFT and 87.93 per cent for LFT. There was no change in clinical diagnosis. Secondary diagnosis was added in 37 per cent cases. Treatment was modified accordingly. It was felt that repeating so many investigations was not worth, considering the cost factor (Rs 150/- CHG, Rs 500/- LFT, Rs 850/- RFT, Rs 75/- MP, etc). Also, tests such as total count (TC), differential count (DC) and haemoglobin (Hb) instead of CHG while SGPT and total bilirubin instead of LFT may suffice.

Interpretation & conclusions: By selecting specific parameters in laboratory blood tests an attempt can be made not only in saving the resources of the institution but also at reaching early diagnosis.

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Missed immunization in children of urban slums: Risk factors & causes

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Background & objectives: Present study aimed to assess the incidence of missed immunization in urban slum children along with impact of selected population characteristics and probable causes for missed immunization.

Methods: In a cross-section observational survey, 500 randomly selected pre-school children, attending paediatric services were evaluated for current immunization status. A child with missed immunization was defined as “who has missed any primary or booster immunization for his/her age on the date of enrollment by more than one month from due date”. Population characteristics and reasons for missed immunization were recorded on a pre-designed format and analyzed.

Results: Present survey revealed that 37.6 per cent of study cases had missed one or more schedule immunizations prior to interview, mostly at the time of First OPV/DPT/HBV dose (48.9%). Missed-out rate was significantly higher in babies of non-Hindus, nuclear families, home-deliveries, young/illiterate mothers and late birth order. Though statistically insignificant, babies of new immigrants had higher missed-out rates. Immunization rate was comparable in males and females. Lack of awareness about immunization timings, lack of time and child’s illness at the time of due immunization were common reasons given by parents for missing an immunization appointment.

Interpretation & conclusions: Despite being a socio-economically advanced city, Mumbai has unacceptably high rate of missed-immunizations in slum-children. Ignorance about the need and correct schedule of immunization as well as lack of time is a major cause for missed-immunizations. This study underscores the need of boosting community awareness and outreach programme to improve immunization coverage in urban slums.

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Study of lipid profile in DM II

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Background & objectives: To study the pattern of lipid profile (LP) DM II patients. To correlate the lipid profile of non-diabetic people of same age group.

Methods: This is a retrospective study of based on examination of records of 66 cases of DM II and 50 healthy controls of same age group coming to Krishna Institute of Medical Sciences, Karad. Their records were studied and results of the lipid profile were analyzed statistically using unpaired t test.

Results: Serum LP showed changes in DM II cases. There was an increase in TG and TC levels. While performing lipid profile the BMI, diet, physical work of patient should be considered which can also lead to increase in lipids.

Interpretation & conclusion: The lipid profile in DM II patient showed variable changes, mostly increase in TG levels as well as increase in LDL and decrease in HDL level. These changes in LP are responsible for many micro as well as macro-vascular disorders. Hence it is necessary to perform lipid profile in DM II patient.

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Efficacy of visual inspection of cervix as a method of cervical cancer screening

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Background & objectives: (i) To identify gross lesion of cervix and vagina, (ii) To identify suspicious acetowhite areas, and (iii) To find out its positive predictive value (PPV) in cancer screening.

Methods: A total of 150 women attending Gynaecological OPD and peripheral Centers between 20-60 yr of age were examined during study period January-July 2006. Visual inspection of cervix was carried out by per speculum examination and gross pathological features if any were noted. Cytological examination was carried out followed by application of 4 per cent acetic acid on suspicious areas for determination of acetowhite areas. All women having positive test on visual inspection with acetic acid (VIA) and cytology were subjected to colposcopy and biopsy if required and statistical analysis was done for sensitivity and PPV.

Results: Detection rate of VIA was 10.7 per cent and for cytology it was 12 per cent. Nine women were detected as true positive cases, of these, 7 were detected by VIA and 6 by cytology. Thus both tests were positive for 77 and 67 per cent cases respectively. VIA detected 2 lesion missed by cytology whereas pap smear detected one lesion that was missed by VIA. There were 5 cases where both VIA and pap smear were negative. They were referred for colposcopy and one of them was detected as moderate dysplasia.

Interpretation & conclusions: VIA showed slightly better sensitivity and PPV than cytology. Hence VIA appears suitable for developing countries because it is inexpensive and can be made available even in rural centre and can be competently performed by non physician with proper training.

Death audit of factors leading to mortality in trauma

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Backgrounds & objectives: To study the demographic characteristics and the causes of trauma deaths, to investigate the existence of preventable deaths using panel review method, to find the common errors and to suggest solutions.

Methods: This was a descriptive study, which included 102 deaths in trauma ward at a level 1 trauma center during a period of 2 months. Data were analyzed by panel with predetermined criteria and classified deaths as not preventable (NP), possibly preventable (PP), and definitively preventable (DP). TRISS, ISS scoring was also applied to these categories.

Results: Majority of deaths occurred in males (84.3%); 61.7 per cent of all deaths were in economically active group 21-50 yr. RTA mostly involved pedestrians (55.88%) and two wheeler riders (20.5%); whereas railways accidents involved those crossing the tracks (56.25%) and falling from running train (37.5%). Most common cause of death was severe head injury (58%) followed by respiratory failure (22%). Panel found that death was NP in 58.88 per cent, DP in 12.74 per cent and PP in 28.43 per cent. TRISS significantly differed among categories. The common errors were inappropriate inter-hospital transfer (23.52%), the delay in operative intervention (23.52%), etc.

Interpretation & conclusions: Severe head injury was the commonest cause of non-preventable trauma death. Public education about safety measures and enforcement of traffic rules are the most important measures for primary prevention. Strengthening of peripheral and central hospitals in terms of better infrastructure and trained manpower is essential for better outcome and quality of care. All the staff handling trauma victims needs to be adequately trained in standard resuscitation, transfer and treatment protocols.

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Umbilical cord bilirubin in predicting the development of significant hyperbilirubinaemia in healthy term neonates

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Background & objectives: Neonatal jaundice is a physiological phenomenon. However, when the blood levels of bilirubin are high it may lead to kernicterus, which is a serious complication. The objective of the study was to find out cut-off value and predictive ability of cord bilirubin to predict subsequent hyperbilirubinaemia, to identify newborn at risk for developing significant hyperbilirubinaemia later during first day and life by measuring umbilical cord bilirubin level for early and management, and for prevention of kernicterus and its forthcoming social, economical, mental, and physical problems.

Methods: Present study was carried in the Department of Pediatrics, Krishna hospital, Karad during this period. Babies (n=100) delivered during the study period 15 June-15 August 2006 were enrolled. Only healthy term neonates were included. Serum bilirubin levels were determined from cord blood samples obtained at birth and then after 72 h total serum bilirubin levels were estimated again. Total serum bilirubin level was evaluated after every 12 h till discharge. Total cord bilirubin estimated by Diazot Test. Serum bilirubin was repeated on clinical suspicion>10 mg/dl or on 72 h irrespective of jaundice. Hyperbilirubinaemia was defined as serum bilirubin >12 mg/dl or estimated by Cockington’s chart.

Results: Cut-off value of cord bilirubin was 2.044 mg/dl. Sensitivity 83.3 per cent, specificity 93.4 per cent, positive predictive value 75.1 per cent, negative predictive value 95.8 per cent. This reveals that baby with cord bilirubin less than or equal to 2.044mg/dl indicates 93.4 per cent chance of probable no risk and hyperbilirubinaemia. A baby with cord bilirubin greater than 2.044 mg/dl will develop subsequent hyperbilirubinaemia.

Interpretation & conclusions: Cord bilirubin level of > 2.044 mg/dl in healthy term newborn will predict significant hyperbilirubinaemia.

Screening for assessment of disease due to leptospirosis in local population

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Background & objectives: To screen cases of acute febrile illness attending the hospital, for leptospirosis by specific IgG/IgM serological markers and to assess the incidence of severe complications due to leptospirosis.

Methods: An acute phase blood sample and a second paired sample 7-10 days later were collected from patients attending the OPD or admitted in wards, fulfilling the criteria for clinical diagnosis over a period of 2 months. Leptospira Microwell Serum ELISA IgM and IgG was performed on each sample.

Results: Incidence of leptospirosis based on seropositive ELISA was found to be 18.75 per cent. Maximum seropositivity was found in age-group 31-40 yr (50%). Male: female ratio of the affected was 2:1. Seropositivity was more among rural (22.22%) than urban (17.39%) cases studied. Among complications hepatic (33.33%) and hepato-renal involvement (33.33%) and among risk factors h/o animal contact (50%) and rat infestation (50%) were found most significant.

Interpretation & conclusions: The prevalence of leptospirosis in this region is certainly not negligible. This study provides evidence that leptospirosis is an important differential diagnosis of acute febrile illness and should be clinically suspected especially in those patients presenting with hepato-renal complications with a history of exposure to risk factors. It is the likely diagnosis in middle aged males coming from rural areas.

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Profile of hypertensive complications from a government hospital, Chennai

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Variations of adductor tubercle – Anatomical significance

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Accentuation of vancomycin sensitivity against MRSA with three different antibiotics

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Background & objectives: Detection of accentuation of vancomycin susceptibility to methicillin resistant Staphylococcus aureus (MRSA) isolates with three other antibiotics by Kirby- Bauer’s disc diffusion method.

Methods: Isolation of MRSA was done from clinical sample sent to PSG hospitals by standard procedure. Comparison of accentuation of vancomycin susceptibility was done against amikacin of amino glycosides and 4 amino quinolones on plain Muller Hinton agar (MHA). The isolates of MRSA were inoculated using a peptone water culture standardized to Mc Farland standard one. The antibiotic susceptibility was done on MHA by Kirby- Baure’s disc diffusion method. Accentuation zone of inhibition when disc of amikacin, gentamicin, ciprofloxacin were placed at a distance of 9 mm from the center of vancomycin disc was noted as S1. The same was duplicated on MHA with MIC (minimum inhibitory concentration) of vancomycin as determined by agar dilution method and zone of each antibiotic was read as S2. S2 was 0 in the absence of an increase in the diameter of inhibition zone. S2 was 1 when the zone was increased but the strain remained in the same category, 2 the strain changed by one category and 3 zone was increased so that the strain changed by two categories. Lastly depending upon addition of these two scores S3 was obtained. The beneficial effect was defined as absent (S3=0), weak (S3=1), moderate (S3=2), strong (S3=3). The results were similarly tabulated for all three antibiotics.

Results: We found S2 value of amikacin as difference in zone size of 0, 1, 2, 3 mm in 19, 17, 8, 6 isolates respectively. S3 value of amikacin absent: 18, weak: 23, moderate: 7, strong: 2. S3 value of ciprofloxacin absent: 39, weak: 8, moderate: 2, strong: 1. S3 value of gentamicin absent: 41, weak: 2, moderate: 5, strong: 2.

Interpretation & conclusions: In our study a greater degree of synergy was seen with amikacin than gentamicin amongst the two aminoglycosides. Ciprofloxacin with vancomycin proved more beneficial than vancomycin alone. Our study reiterates the fact that vancomycin used in combination with aminoglycosides and fluroquinolones shows better anti-staphylococcal activity and more important regimen in the treatment of clinical isolates of MRSA.

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Efficacy & tolerability of two drugs in the topical treatment of fresh post-operative & post injury scars

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Background & objectives: The aim of the study was to evaluate and compare the efficacy, tolerability, cost- effectiveness of the two drugs, one gel containing extractum cepae, heparin sodium and allantoin and a cream containing Aloe extract and vitamin E acetate in scars of post-operative and post-trauma aetiology.

Methods: This was a randomized, prospective, double-blinded, single centric, prospective study involving twice daily application of the preparation. A total of 60 patients were evaluated. The therapy was continued for a minimum period of thee months and the scar was assessed every fortnight. The parameters assessed were in accordance to the scar assessment scale by Beausang et al. and consisted of: number of scars, scar width, pigmentation, texture, contour, whether matte or shiny and margins. Other aspects of scars i.e. scar length; surrounding area, shape etc. were also noted.

Results: The gel was found to be effective and safe in improving all aspects of scars, which was statistically significant. Further, physiological and skin coloured scars were more common in the group treated with the gel. No unexpected acute or long-term serious adverse reactions were noticed during the entire study.

Interpretation & conclusions: In short, the gel containing extractum cepae, heparin sodium and allantoin was more effective and safe drug in the treatment of Indian patients having scars of post-operative and post-trauma aetiology.

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Assessment of risk for STIs/ HIV/AIDS among street adolescents from south Mumbai area

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Background & objectives: To assess the risk for STIs/HIV/AIDS among street adolescents from south Mumbai area.

Methods: The present descriptive epidemiological study adopting exploratory study design was undertaken to assess the risk for STIs/HIV/AIDS among street adolescents from south Mumbai area. All the beneficiaries of Humara Club (an NGO), fulfilling the inclusion criteria, 103 were included in the study. Preformed semi-structured interview schedule was used for data collection.

Results: Out of 103, 95 per cent (98) had heard of HIV/AIDS and 93.2 per cent (96) knew about sexual route of transmission. Only 25 per cent (26) were aware about possibility of transmission of HIV/AIDS through the parenteral route, 80 per cent (82) admitted that they had sexual encounters with CSWs, and 33 per cent (34) mentioned that they were indulging in unnatural sexual relations (32% i.e. 33 had homosexual tendencies). In spite of being aware of sexual routes of transmission, 73.2 per cent (76) revealed about relations with multiple sexual partners. According to 72 per cent (74) adolescents, people get sick quickly after acquiring HIV/AIDS. 80 per cent (38) of the known alcoholics, (47) have sex with strangers and 74 per cent (32) of them have some sexual health problem. History of sexual abuse was given by 90.3 per cent (93) of which 88.1 per cent (82) were sexually active and 60.2 per cent (56) have a sexual health problem. 48.5 (50) and 54.4 per cent (56) reported genital ulcer and burning micturition respectively. 80.8 per cent (83) were exposed to high risk all the time by analysis of weighted score given to each adolescent taking into account their exposure to the risk of acquiring HIV/AIDS/STIs.

Interpretation & conclusions: Present study concludes that it is necessary to strengthen the efforts to protect these adolescents with appropriate surveillance methods.

Impact of counselling on prevention of parent-to-child transmission & primary prevention of HIV in pregnant women attending antenatal clinic

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Background & objectives: To study the impact of counselling through VCTC on primary prevention of HIV, and prevention of parent-to-child transmission in pregnant women attending ANC.

Methods: Subjects were chosen randomly from the pregnant women attending antenatal clinics. They were given questionnaires and their responses were compared with control group. Women tested positive, were given another questionnaire with questions pertaining to PPTCT and their knowledge assessed by the number of correct answers given.

Results: No significant difference was found in the attitude of the study and control groups towards HIV. 25 per cent had not heard about HIV. The main modes of spread were asked and 42.67 per cent answered sexual contacts, 17.33 per cent contact with blood and sharps, 8 per cent touching a HIV patient, 9.33 per cent handling infected persons urine and feces, 37.33 per cent believed that children get infected from mothers, 7.33 per cent mosquito bites. When questioned about reasons for voluntary testing, 16 per cent because doctors told them to, 25 per cent interested in knowing their status, 13 per cent did not know. Only 37.33 per cent knew it is important to prevent mother-to-child transmission. Out of 5 patients tested positive, only 2 attended post-test counselling.

Interpretation & conclusions: The overall knowledge and attitude towards HIV was very poor. There is still a strong barrier of stigma and discrimination. Counselling at VCTC did not have any impact on the knowledge and attitude. Post-test counselling did not enlighten seropositive women about prevention of PPTCT.

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Level of awareness regarding polio, its control & immunization in women from a slum community in Mumbai

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Background & objectives: Presently, India remains one of the four countries endemic for polio in the world. In the year 2006, 5 cases of polio were detected in the city of Mumbai, of which 2 were from Bainganwadi, Govandi, the area of the research. This study was done to find out the level of awareness about polio and its immunization, the attitudes of these people towards the disease and immunization efforts, the problems encountered by them and the reasons for not immunizing their children.

Methods: The study population comprised all the married women in the reproductive age group having at least one child below 5 yr. 5 per cent of this population was studied after selection by simple random sampling method amounting to 500. A semi-structured proforma was used to collect information and the answers were scored by a marking scheme. (Max. marks = 7) The findings were then analysed by Statistical Package of Social Science.

Results: 69 per cent of the women scored less than 50 per cent marks in the awareness questionnaire. 85.2 per cent of Uttar Pradesh migrants and 86.8 per cent of Bihar migrants scored below 50 per cent, 27.5 per cent of Muslims had an incomplete immunization status as compared to 6.4 per cent of Hindus. Reasons for not immunizing their children were lack of facilities (43%), not being aware of immunization (37.2%). Reasons for not giving pulse polio to their children were not in town (44.4%). Others - not aware or already given vaccination at birth. Problems faced by them include lack of awareness, lack of facilities, non-cooperative staff, etc.

Interpretation & conclusions: The effects of religion and migration on the level of awareness are very clear. If India has to eradicate polio, we not only need to improve immunization campaigns but also focus on knowledge of people. 73.8 per cent of the women did not even know what pulse polio is. Misconceptions such as injections being harmful to the children need to be addressed. Migration from the States of Uttar Pradesh and Bihar where the maximum number of polio cases were detected needs to be checked. And lastly religious and cultural barriers need to be overcome.

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The risk of septicaemia in neonates born to mothers with premature rupture of membranes (>24 h) in a tertiary care neonatal unit

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Background & objectives: Sepsis is an important contributor to neonatal morbidity and mortality. The primary objective of this study was to find out the risk of sepsis in neonates born to mothers with premature rupture of membranes (>24 h). Secondly, to find out bacteriological profile and antimicrobial susceptibility pattern and also the morbidity and mortality pattern in neonates during the hospital stay.

Methods: This prospective study was conducted over 2 months from 20th June to 20th August 2007 in Safdarjung Hospital, New Delhi, a 1570 bedded tertiary care hospital with a delivery rate of 15000 to 18000 annually. All neonate-mother pairs with premature rupture of membranes (>24 h) constituted the subjects of this study. Every mother had high vaginal swab (HVS) and blood culture taken before antibiotic therapy and delivery. The neonates had sepsis screening done and blood culture taken before starting
antibiotic therapy. Antibiotic sensitivity was tested by Kirby Baur method. Morbidity and mortality pattern in neonates were observed during nursery stay.

Results: Out of 25 deliveries, 14 (56%) were preterm, 16 (64%) mothers were anaemic. Seven (28%) mothers had positive HVS culture (2 cases each of *Staphylococcus aureus* and *Klebsiella* spp, 1 case each of *Pseudomonas* and MRSA and one mother had both genital colonization and sepsis with *S. aureus*). Six out of 25 (24%) neonates had septicaemia (S. *aureus* and *Klebsiella* spp in 2 cases each and one case each of *Pseudomonas* and MRSA). Two of these (33%) had septicaemia with same strain of *S. aureus* (confirmed by antimicrobial susceptibility pattern) as seen in HVS of their mothers. A few neonates had respiratory distress and abdominal distension but no death was reported.

Interpretation & conclusions: Premature rupture of membranes was found to be the significant risk factor for neonatal septicaemia and *S. aureus* as major cause to bacterial colonization in genital tracts of mothers and septicaemia in neonates.

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Prevalence of needle-stick injuries & circumstances surrounding them among resident doctors in a tertiary care hospital

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Backgrounds & objectives: During the years of training, resident doctors perform numerous procedures involving the use of sharp instruments. They are at higher risk of needle-stick injuries and risk of being exposed to blood borne pathogens. The main aim of the study was to estimate the prevalence of needle-stick injuries among resident doctors working in a tertiary care hospital.

Methods: The study protocol was approved by the institutional ethics committee. A standardized, validated, anonymized questionnaire was given to the resident doctors who consented to participate.

Results: At the point of writing this abstract, 66 resident doctors have completed the questionnaire. There were 56 males, and 10 females. A total of 49 of 66 (74.2%) of residents had sustained at least 1 needle stick injury. A majority of them (44/49-89.8%) were self-induced; with a solid-bore needle (36/49-73.5%); while suturing (28/49-57.1%) and while in the operating room (33/49-67.3%). Only 18 of 49 (36.7%) reported the injury. The most common reason for not reporting was “takes too much time” (38.7%), followed by “no utility” (22.5%). The most common cause for the injury as felt by the participants was “rushed” (75.6%) followed by “lack of assistance” (22.5%). The most feared pathogen was HIV (43/66-65.15%), while the least feared pathogen was HBV (23/66-34.8%).

Interpretation & conclusions: Needle stick injuries are fairly common among resident surgical trainees and are often not reported. Improved prevention and reporting strategies are needed to increase occupational safety for surgical residents.

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Differentiation of *E. histolytica*, *E. dispar* & *E. moshkovskii* using nested PCR-RFLP

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**Backgrounds & objectives:** Microscopy is unreliable to distinguish the pathogenic *Entamoeba histolytica* from the nonpathogenic *E.dispar* or *E.moshkovskii* in stool specimens.

**Methods:** Nested polymerase chain reaction- restriction fragment length polymorphism (PCR – RFLP) was carried out to detect *E. histolytica*, *E. dispar*, and *E. moshkovskii* DNA in stool samples of 202 patients positive for *E.histolytica*, *E. dispar*, or *E. moshkovskii* by microscopy or culture and in 35 controls. The Tech Lab *E.histolytica* II enzyme-linked immunosorbent assay (ELISA) was performed to detect Gal/ GalNAc lectin in 45 stool samples positive for *E. histolytica*, *E. dispar*, or *E. moshkovskii* by microscopy or culture. Rapid indirect haemagglutination assay (IHA) was performed to detect serum antiamoebic antibodies in the 85 patients positive for *E. histolytica*, *E. dispar*, or *E. moshkovskii* in their stool specimens and in the 35 controls.

**Results:** Nested PCR-RFLP was positive in 175 of 202 (86.6%) patient stool samples and was negative in all 35 negative control stool samples. ELISA was positive in 29 of 45 (64.4%) patient stool samples. The IHA test was positive in 10 of 85 (22.4%) patient serum samples and in one (2.8%) of the control serum samples. Nested PCR-RFLP detected *E. histolytica* DNA in stool specimens of 12 (63.2%) of 19 seropositive patients, and in 31 (47%) of 66 seronegative patients. Tech Lab *E.histolytica* II ELISA detected *E.histolytica* antigen in stool specimens of six (54.5%) of 11 seronegative patients.

**Interpretation & conclusions:** Nested PCR-RFLP was useful for the specific detection of *E. histolytica*, *E. dispar*, and *E. moshkovskii* in stool samples.

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Colonisation of methicillin resistant *Staphylococcus aureus* (MRSA) among the staff and patients admitted in neonatal intensive care unit

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**Background & objectives:** *Staphylococcus aureus* being one of the most implicated nosocomial pathogens, the present study was undertaken to screen the staff and environment of the NICU for MRSA, and to determine nosocomial acquisition of MRSA by neonates admitted in the NICU at Gandhi Hospital, Hyderabad.

**Methods:** This was a cross-sectional cohort study done during a period of 2 months. The study group included 31 hospital personnel, 12 samples from the environment (NICU), and 50 neonates admitted in the NICU. The swabs collected were cultured on blood agar and mannitol salt agar. *Staphylococcus aureus* was identified by standard biochemical tests. Sensitivity to methicillin was tested by disc diffusion and agar dilution methods.

**Results:** Prevalence of MRSA among the personnel of NICU was 16.13 per cent. No *Staphylococcus* strains were detected in the environmental samples. Six neonates (12%) were colonized with *S.aureus*, only one of which was MRSA. The MRSA strains isolated were multi-drug resistant.

**Interpretation & conclusions:** The percentage of neonates acquiring MRSA was observed to be very low, even with a considerable prevalence among the personnel. This reflects the efficiency of the precautions taken to prevent nosocomial infections here.

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Risk factors & drug resistance of *Streptococcus pneumoniae*

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**Backgrounds & objectives:** To study the relationship of age and sex as a major risk factor of *S. pneumoniae* infection and to know the prevalence of drug resistance in *S. pneumoniae*.

**Methods:** One hundred patients whose sputum samples revealed polymorphonuclear leucocytes and heavy growth of *S. pneumoniae* were included in our study. Patient’s age, sex and history of diabetes, alcoholism and smoking were recorded. Sputum were evaluated only when Gram stain revealed numerous polymorphonuclear leucocytes. Sputum sample was qualitatively assessed on routine bacteriological methods. Isolates were then identified by haemolysis, colony morphology and biochemical reaction. Isolates were tested for susceptibility to penicillin, erythomycin, co-trimoxazole, tetracycline, cefotaxime by standard Kirby Bauer disk diffusion method.

**Results:** Out of 100 pneumonia cases, 4 (4%) belonged to the age group 0-19 yr, 28(28%) to the age group 20-39, 30(30%) to the age group 40-49 yr, and 38(38%) of them belonged to age group more than 50 yr. There was male preponderance (75% male, 25 per cent female). Out of 100 isolates of *S. pneumoniae* 35 per cent were resistant to penicillin, 20 per cent to erythomycin, 28 per cent to trimethoprim-sulphamethoxazole, 20 per cent to tetracycline and 8 per cent to cefotaxime. All the isolates were sensitive to vancomycin.

**Interpretation & conclusions:** The incidence of pneumonia due to *S. pneumoniae* is higher with age group more than 40 yr and is more common in males. Most of the isolates of *S. pneumoniae* have shown resistance to commonly used antibiotics and incidence of antibiotic resistance is increasing day by day.

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ECG changes in acute cholecystitis patients without past history of cardiovascular disease

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**Background & objectives:** Acute cholecystitis may present with symptoms (like non tender full abdomen, nausea, radiating substernal pain) mimicking AMI clinically and in ECG. Animal experiments show that biliary tree distension decreases coronary blood flow by vagal afferents but the cause in human is unclear. The study aimed to find the relation of ECG changes with acute cholecystitis.

**Methods:** A hospital-based cross-sectional study, conducted between February-August, 2007, in Medical College Hospital, on 43 patients diagnosed by USG in wards with acute cholecystitis without past history of hypertension, coronary artery disease, congestive heart failure, valvular heart disease and not on anti-hypertensive drugs.

**Results:** 17.3 per cent patients had ST elevation (0.2-0.4mV) along a single coronary artery—in the anterior leads 11.2 per cent, in the inferior leads 6.1 per cent. ST depression (0.2 mV) was found in 22.9 per cent—in the inferior wall 16.2 per cent and lateral wall 6.1 per cent. T wave inversion was found in 16.4 per cent. PR interval prolonged in 12.3 per cent. Atrial ectopics found in 21.3 per cent and sinus bradycardia in 16.7 per cent.

**Interpretation & conclusions:** Mere presence of acute cholecystitis has no causative role for myocardial ischaemic changes. The ECG changes are mere associations of acute cholecystitis. Prompt recognition of acute cholecystitis by USG with atypical symptoms will reduce morbidity, mortality, and anxiety. Routine surgical procedure must be undertaken without emphasizing much on ECG changes in such patients.

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Endoscopic management OFV post cholecystectomy biliary leaks
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Background & objectives: Open and laparoscopic cholecystectomies are associated with biliary tract injuries. We present our decade long experience in dealing with the endoscopic management of post-operative biliary leaks.

Methods: Retrospective analysis of patients presenting with post-cholecystectomy biliary leaks from January 1996 to December 2005. The clinical profile, endoscopic findings, management and treatment response in these patients were analysed.

Results: A total of 89 patients were diagnosed with post-operative biliary leaks based on aspiration of bilious material from the peritoneal cavity or the presence of free flowing bile in the abdominal drains. Of these patients, 51 had undergone open cholecystectomy and 38 underwent laparoscopic cholecystectomy. Endoscopic sphincterotomy (ES) along with stenting was done in 51 patients (Group I). Stone extraction was also done in 12 patients. ES alone (Group II) was done in 5 patients and stenting alone (Group III) was done in 8 patients. Failure of deep cannulation of the CBD occurred in 11 patients due to abnormal location of the papilla and tight stricture. There were another 14 patients in whom there was a total ligature and the leak was proximal to the ligature. These patients were subjected to surgery. The leak settled after an average of 3 days (1 to 10 days) after the endoscopic intervention. There was no difference between the 3 groups in terms of patient outcomes. Overall success rate was 85 per cent (64/75). There were no complications but for mild pancreatitis in 5 patients and minor bleed in 6 patients.

Interpretation & conclusions: Endoscopic therapy is safe and effective management for post-operative biliary leaks.

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Effect of novel vanadium compounds on streptozotocin induced diabetes mellitus studied on murine model
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Background & objectives: The use of metals in medical practice is a fairly recent offshoot of bioinorganic chemistry, however there is a considerable importance of ligands in modifying the biological effects of metal-based drugs. Recent periodicals suggest that vanadium containing compounds have shown considerable promise as orally available prodrugs that alleviate most of the symptoms and complications of diabetes. However, the crucial step in their development is the modification of their vanadium core by chelation, which could improve bio-distribution and tolerability. The aim of this study was to study the effect of vanadium compounds [Binuclear oxovanadium (V) complexes containing 4, 4'-bipyridine type bridge], developed by our laboratory (ref1), on streptozotocin induced diabetic rats.

Methods: Wistar rats (n=20, average body weight: 110 ± 5 g) were initially used in the pilot study and a further study on larger scale is underway. Normal controls (5), streptozotocin induced diabetic controls (5) and streptozocin induced diabetic rats fed daily (orally) on the proposed vanadium compounds (10) (50 ml of 0.1 mMol drug/rat) were maintained for a test period of 45 days on similar diet and conditions. Blood collected by heart puncture and eyeball, kidney and liver tissues preserved for histopathology. Plasma glucose, total antioxidant status, total thiol level, MDA level, cholesterol, HDL, TG, SGPT and serum creatinine were measured using standard protocols.

Results: A significant decrease in the plasma glucose, lipid peroxidation (MDA), associated with elevated TAS and HDL was found in the drug treated group compared to the diabetic control group.

Interpretation & conclusions: Hypoglycaemic effects of our novel vanadium compounds showed that the salt possessed blood glucose lowering activity, alleviated secondary pathophysiological complications; lowering of lipid peroxidation, elevation of antioxidant status and increasing HDL levels; in the diabetic murine model. Our findings may open new vistas and challenges to design oral hypoglycaemic drugs suitable for type-1 diabetes, using the vanadium compounds as proposed by us, with high efficacy and tolerability.

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Evaluation of iron status in patients of type II diabetes mellitus

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Background & objectives: To evaluate the iron status in patients of type II diabetes mellitus, and to correlate serum ferritin and transferrin with the control of diabetes mellitus.

Methods: This study was conducted on 30 randomly selected established and newly diagnosed cases of type 2 diabetes patients attending the diabetes clinic at Safdarjung Hospital. Thirty normal age-matched individuals were included as control group. Iron profile; haemoglobin, HbA1c, and fasting glucose and other relevant tests to rule out diabetic complications were measured in blood samples. Results were analyzed statistically by t test and Pearson regression coefficient test.

Results: Serum ferritin and transferrin levels were found to be statistically higher than the levels found in healthy control. No correlation was found between serum ferritin and transferrin levels in diabetics to the control of the disease, though higher levels of the same were found in the newly diagnosed individuals compared to established group.

Interpretation & conclusions: Ferritin is higher in diabetics than in controls. There was no correlation between serum ferritin and blood glucose control in diabetics. So, it seems that ferritin may have a role in the pathogenesis of type 2 DM. It has been hypothesized that serum ferritin could be a marker of insulin resistance.

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Extent of off-label use of drugs in obstetrics wards in a tertiary-care hospital

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Background & objectives: The study investigated the extent of off-label use of drugs in obstetrics. Off-label drug use refers to use of drugs for indications or doses or routes of administration that are not included in the labeling approved by the Drug and Controller General of India (Indian Regulatory Authority) i.e. these drugs are being used for indications for which they are yet to be proven effective. Such use of drugs may be potentially dangerous for the pregnant mother as well as the foetus. The extent of such use has already been estimated in the American continent but was yet to be estimated in Asia. Such use of drugs is widespread in the field of obstetrics due to limited availability of safe drugs.

Methods: The details of demographic data, diagnosis, details of drugs prescribed (name, dose, frequency and route of administration, indication) were recorded at the time of discharge on a Case Record Form. Unlicensed and off-label use of drugs were recorded according to their definitions, and also by referring to British National Formulary (BNF) version 2005 and the package insert of the concerned drug.

Results: Out of 512 patients, 215 (42%) were given off-label drugs. Total of 394 (10.79%) prescriptions were of off-label drugs, out of 3650 prescriptions. On an average 1.83 ± 1.12 off-label drugs were given per patient. Betamethasone dipropionate was the most common drug given off-label. The most common indications for off-label use were for inhibition of preterm labour and pregnancy induced hypertension.

Interpretation & conclusions: It was observed that corticosteroids, calcium channel blockers and sympathomimetic drugs classes, along with low dose aspirin were the commonest drugs used off-label in the field of obstetrics. These drugs fell into the categories of US FDA -B, C and D, indicating that there is a considerable amount of off label prescribing in obstetrics.

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Assessment of stress among computer professionals of Technopark, Thiruvananthapuram

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Backgrounds & objectives: To assess and grade the stress among computer professionals and to study various factors associated with computer professional stress.

Methods: The study was designed as a descriptive cross-sectional survey using a stress assessment questionnaire among 125 computer professionals selected randomly from the working professionals of Technopark, TVM. For analysis, responses to the questionnaire were given scores according to weightage. The maximum possible score was 30 and minimum zero. Accordingly the study subjects were grouped into four – those with no (0 - 7.5), mild (7.6 - 15), moderate (15.1 - 22.5) and severe (22.6 - 30) stress.

Results: We found that an alarmingly high proportion (47.2%) of the study subjects suffered from any level of stress, of which 28 per cent suffered from mild, 17.6 per cent from moderate and 1.6 per cent from severe stress. There was significant association between stress and their sex ($P = 0.0189$) and working h/day ($P = 0.049$). The most common stressors were project deadline (49.6%), restriction in time spent with family (49.6%), job obsolescence (43.2%), being undervalued in profession (40.8%), working overtime (41.6%) and work overload (26.4%).

Interpretation & conclusions: The study revealed high occurrence of stress among IT professionals, which in the long run can have serious physical, physiological and psychosocial impacts. IT companies should evolve effective strategies to combat work related stress and ensure that work – life balance of their employees is well maintained.

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Human leptospirosis in North Kerala - Clinical & laboratory profile & risk factors

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Background & objectives: (i) The objectives of this study were to assess the clinical and laboratory profile of patients with leptospirosis. (ii) to identify the behavioural and environmental risk factors for leptospirosis (iii) soil pH analysis, and (iv) serovar identification.

Methods: A case-control study with 100 cases (fever with IgM ELISA positive) and 200 controls (fever with IgM ELISA negative) were undertaken. A pre - tested semi-structured questionnaire was used to collect relevant data. Soil studies and serovar identification was done. Analysis was done using SPSS statistical package.

Results: (a) Major clinical symptoms associated were fever, myalgia (96%), headache (81%), conjunctival suffusion (70%) and jaundice (55%). (b) Laboratory criteria relevant were decreased platelet count (99,112 – 1, 32,125/ cu.mm), serum albumin (2.9 – 3.1 g/dl) and elevated ESR (62.63 – 77.42/ first h), blood urea (51.5 – 74.9 mg/dl), serum creatinine (1.41 – 1.93 mg/dl), total bilirubin (6.36 – 9.39 mg/dl) and direct bilirubin (3.9 – 5.8 mg/dl). (c) Risk factors significant were occupation predominantly agriculture, history of recent injury, presence of mouth ulcers, past history of jaundice, tiled roofing and cemented flooring pattern of the house, use of unsanitary wells, dumping of solid wastes, open drainage of liquid wastes, presence of rice fields nearby and presence of rats and rat burrows in the premises. (d) Autumnalis was found to be the most prevalent serovar but in most cases, mixed serovars was isolated. (e) Significant association was found between alkaline pH of the soil in the premises of cases and the disease.

Interpretation & conclusions: This study points out the relevant clinical symptoms and laboratory data that can help in the early diagnosis of the disease. Epidemiological risk factors brought out by this study need to be taken into consideration while planning prevention and control strategies .An idea about prevalent serovar indicates the need for carrying out further animal studies.

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Incidence & prognostic factors associated with biliary atresia

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Background & objectives: The study aimed to determine the incidence of biliary atresia (BA) amongst neonatal cholestatic syndromes (NCS) and to determine prognostic factors in BA patients who have undergone Kasai portoenterostomy.

Methods: Thirty two patients diagnosed with BA were investigated and followed up for a period of 1 month to 7 yr post-operatively.

Results: Incidence of BA amongst NCS (n=88) was 36.4 per cent. 8 patients (25%) were lost to follow up, of the remaining, 10 (41.7%) improved and 14 (58.3%) did not improve. The mean age was 89 ± 55.8 days. Twelve (50%) had associated CMV infection, of which 8 (66.7%) did not show improvement. (Odd’s ratio=2). One (25%) out of 4 patients with bile duct size of <100 microns showed an improvement whereas 3 (37.5%) out of 8 patients with bile duct size 100-200 microns showed improvement and 4 (50%) with bile duct size of >200 microns had improvement post Kasai surgery. Those with bile duct sizes >200 microns had better prognosis than those with sizes 100-200 microns (Odd’s ratio=1.8) and <100 microns (Odd’s ratio=3). Twelve patients (50%) were operated before 3 months of age and 50 per cent of them responded to surgery. The remaining 12 patients were operated after 3 months of age and only 33 per cent showed any improvement. (Odd’s ratio=2). Other parameters like SGOT (P=0.398), SGPT (0.966), total bilirubin (0.242), direct bilirubin (0.293), alkaline phosphatase (0.605) and GGTP (0.209), age at presentation (0.610), cirrhosis (0.417), degree of fibrosis (0.384), degree of inflammation (0.964) and cholangitis (P=0.388) had no effect on the outcome.

Interpretation & conclusions: BA is a common cause of NCS. Children with BA and associated CMV have a bad prognosis and children with bile duct size >200 microns have a good prognosis. Portoenterostomy before 3 months of age has a better outcome.

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Activity of thiopurine S-methyl transferase (TPMT) polymorphism (phenotyping) in normal, healthy, Indians

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Background & objectives: This was a prospective study in healthy Indian volunteers to determine the levels of the enzyme thiopurine S-methyl transferase (TPMT). It was observed that people suffering from acute lymphoblastic leukaemia (ALL) and receiving therapy with mercaptopurines are at risk of toxicity (myelosuppression). TPMT selectively catalyses the S-methylation of thiopurine drugs. High TPMT activity leads to suboptimal treatment while low TPMT activity leads to toxicity. The elucidation of TPMT phenotype pattern in Indian population can be a helpful prognostic tool in patients who require thiopurine drugs for treatment of ALL.

Methods: Blood sample (5ml) was collected from subjects fulfilling the inclusion/exclusion criteria at the study site and an RBC lysate was prepared. This lysate was used for analysis of enzyme level. Analysis was done by using the high performance liquid chromatography (HPLC) method. The volunteers were classified as low (0-4.8), intermediate (4.9-15.9), high (16-35) and very high activity (35-50.8). Assessment was done of percentage of patients showing low, intermediate, high or very high TPMT activities.

Results: In our study of 49 volunteers we found that 56 per cent of the population showed high activity suggesting presence of homozygous wild type or heterozygous trait. Around 41 per cent showed intermediate activity suggesting polymorphism in TPMT enzymes and one with low activity showing TPMT deficiency.

Interpretation & conclusion: The present study shows that, as compared to other populations, TPMT activity in Indian subjects ranges from 1.73 nmol/h/ml of prbcs to 50.78 nmol/h/ml of prbcs. In the 49 subjects studied, TPMT activity was as follows: low = 1 (2.1%); intermediate = 20 (40.8%); high = 20 (40.8%); very high = 8 (16.3%).

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Antibiotic usage & awareness of hospital infection control practices among doctors

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Background and objectives: A descriptive, cross-sectional study was done to investigate existing trends in antimicrobial prescribing practices and awareness of hospital infection control practices.

Method: A structured interview was administered to 34 surgeons at the Sassoon General Hospitals, Pune.

Results: There was a wide variation in antibiotic regimes. Wound type significantly affected choice of the main antibiotic (P<0.001) and addition of metronidazole (P<0.001), while it did not significantly affect use of aminoglycosides. Wound condition was more likely to effect post-op change of antibiotic than culture sensitivity reports (OR=2.7739). Length of surgery was given consideration while selecting prophylactic antibiotics by 14.71 per cent surgeons. Surgical scrub done by ‘number method’. Awareness about appropriate surgical attire 98.04 per cent. Allowing antiseptic used for pre-operative preparation of patients’ skin to dry 77.5 per cent. Proper disposal of infectious waste 100 per cent. Wearing gloves in the ward was significantly associated with less hand washing (P<0.001). All surgeons instruct patients to bathe prior to surgery; patients’ compliance with this was not verified. Patients were shaved the night before surgery using a metal blade.

Interpretation & conclusions: Although there is a commendable level of awareness about most infection control practices and the sentient use of antibiotics, there still are areas which would benefit from an educational intervention.

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Prevalence of obstructive sleep apnoea in Indian urban population using the modified berlin questionnaire

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Background & objectives: Obstructive sleep apnoea (OSA) is a disease characterized by disruptive snoring, nocturnal hypoxemia, and frequent arousals during sleep and excessive daytime sleepiness. The Modified Berlin Questionnaire is a convenient tool to qualitatively identify person at risk to develop OSA. The current study was undertaken with the aid of the Modified Berlin Questionnaire to assess the prevalence of OSA in the Indian urban setting and quantify the risk factors.

Methods: A population survey of the urban population of Wanowrie, Pune was carried out using the Modified Berlin Questionnaire. The odds ratios were calculated for various risk factors in the population. Subjects were simultaneously evaluated for their awareness levels regarding OSA.

Results: Of the 409 respondents, 71 were at high risk for OSA (17.36%); 22 subjects had knowledge about OSA (5.38%). Habitual snorers were 5.42 times more predisposed to have OSA. Males were 2.27 times and those subjects with BMI >25 kg/m² were 2.68 times more likely to develop OSA. An age of 40 yr and above was further at risk with the likelihood of having OSA being 3.78 times and a known hypertensive was 2.13 times more at risk for the same. Those who were habitual smokers were 2.91 times more likely and regular alcohol consumers were 3.3 times more prone to have OSA.

Interpretation & conclusions: OSA is prevalent amongst the apparently healthy urban population of India though the awareness is low. Factors like habitual, male sex, smokers, age more than 40, hypertension, obesity and regular alcohol consumers increase the likelihood of suffering from OSA.

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Assessment of electrical instability in dilated cardiomyopathy (DCM) patients

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Background & objectives: Dilated cardiomyopathy (DCM) is an important cause of repolarization abnormalities of ventricular myocardium. Abnormalities in repolarization have been implicated in the development of life threatening arrhythmias. Temporal fluctuations in repolarization in this setting have been largely ignored, but spatial ones have been extensively studied.

Methods: Twenty DCM patients (ischaemic and nonischaemic), with ejection fraction less than 45 per cent and NYHA class < II were divided in two groups (Group A: EF <30%, Group B: EF 30-45%). They were subjected to 24 h ambulatory ECG (Holter) recording and beat-to-beat QT interval: variability (QTv) was measured A QT variability index (QTVI) was calculated for each subject as the logarithm of the ratio of normalized QT variance to heart rate variance.

Results: The QTVI was higher in Group A than in Group B patients (0.5 ± 0.19 vs 0.054 ± 0.14, P<0.0001). QTVI was also significantly higher during waking hs than in sleeping hs (0.18 ± 0.02 vs -0.1 ± 0.14, P=0.004) in case of Group B patients. Differences between the patients of Groups A and B with respect to QTv (55.95 ± 15.22 vs 50.02 ± 17.17 ms², P=0.43) and Hv (1.16 ± 2.25 vs 2.28 ± 1.37 ms², P=0.43) were not significant.

Interpretation & conclusions: DCM leads to worsening of systolic function of the heart and temporal ventricular lability. It is associated with beat-to-beat QT interval variability, which shows significant correlation with ejection fraction. Thus, with decresing ejection fraction, the risk of arrhythmia increases.

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Factors associated with low birth weight infants: a case control study

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Background & objectives: This study was conducted to determine the risk factors associated with low birth weight.

Methods: A hospital-based case control study was undertaken at Lady Goschen Hospital, Mangalore. Fifty LBW and 100 NBW were defined as cases and controls, respectively. Various antenatal, intrapartum and neonatal factors were taken into consideration.

Results: Factors in mother like pregnancy induced hypertension (PIH) (LBW44%; NBW18%), pallor (LBW14%; NBW2%), state of liquor {oligohydramnios (LBW6%; NBW0%), primigravidity (LBW66%; NBW44%), twin gestation (LBW20%; NBW0%) were found to be statistically significant.. Neonatal factors like admission to NICU (LBW70%; NBW22%), apgar score <9/10 (LBW40%; NBW19%) respiratory stimulation after birth (LBW34%; NBW12%), specific disorders in infant (LBW34%; NBW15%) were also significant. Factors like age, height, abortion history, obstetric problems, etc. in mother, sex of the baby was not found to be significant.

Interpretation & conclusions: It is better to treat LBW through good prenatal care and intervention programmes than treat LBW born later. Pregnant woman ‘at risk’ (PIH, pallor, twin gestation, etc.) should be diagnosed early and treated appropriately. Iron folic acid tablets and supplementary feeding of pregnant women is also advocated.

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The local effects of flowers of *Calotropis gigantea* in patients of painful heels

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**Background & objectives:** Leaves, flowers and latex of *Calotropis gigantea* are widely used topically in different inflammatory and painful conditions by traditional healers in rural and tribal areas in India. Patients of painful heels have early morning stiffness and pain while standing and walking which gradually disappears in 5 to 30 minutes with routine activities of the day. The open clinical trial was planned in 10 patients of painful heels to develop evidence-based support on the efficacy and safety of topical use of flowers of *Calotropis gigantea* for 7 days. Efficacy was assessed on visual analog scale as well as functional test (walking time) and anti-inflammatory action was assessed by ESR. Topical reactions and systemic toxicity were also assessed.

**Methods:** Baseline investigations were taken on day 1 such as x-ray of both heels, Hb per cent (anaemia), random blood sugar (diabetes), ESR (anti-inflammatory action), serum creatinine (kidney function test) and serum SGOT and SGPT (liver function test). This was assessed again on day 7.

**Results:** Excellent response (100% relief) was seen in two patients while good response (>75% relief) was seen in another four patients while the remaining 4 patients showed fair response (>50% relief).

**Interpretation & conclusions:** There was no local or systemic reaction seen. Kidney function test (serum creatinine) and liver function tests (SGOT and SGPT) remained unaltered. Although our sample was small, from knowledge of previous studies and the observations that have been collected by us, the action of the flowers of *Calotropis gigantea* on the painful heels condition has been shown to be significantly beneficial.

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Screening of congenital malformation in newborns

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**Background & objectives:** Congenital malformations are emerging as important perinatal problems contributing sizably to the perinatal mortalities with considerable repercussions on the mothers and the families. These children have a wide array of problems including complex medical management issues, abnormalities in growth, special educational needs, behavioural and psychological problems and cosmetic concerns. Against this background, the present study was undertaken to take out exact incidence of congenital malformations in newborns at Dr D Y Patil Medical College, to check any association of malformation with any maternal or foetal risk factor and finally to suggest preventive and therapeutic measures if any.

**Methods:** All inborn and outborn live newborns at Dr D.Y. Patil Medical College, Pune, were examined for presence of any congenital malformation. A total of 250 babies were examined according to the designed proforma. Observations were made as per proforma. Every newborn was examined on day 1. Those who were having any type of congenital malformation were also assessed on day 14 and day 28 to check any associated malformation, which may manifest later on. Related information regarding birth weight, birth order, sex, gestational age, community and consanguinity were also documented. Significant maternal history likes maternal age, maternal illness, ingestion of drugs, exposure to radiation, and type of delivery were also recorded. The protocol was approved by the Ethical committee.

**Results:** Out of total 250 newborns examined, 24 had some kind of malformation either major or minor. The total incidence recorded was 9.6 per cent. CVS was found to be most commonly affected system. The next most commonly affected system were GIT and orofacial followed by musculoskeletal and CNS. Good association was found between occurrence of malformation and low birth weight, H/O malformation in previous sibling and lack of antenatal services like doses of TT and iron and folic acid tablets.

**Interpretation & conclusions:** The study showed incidence of congenital malformation as 9.6 per cent among hospital deliveries. H/O malformation in previous child, low birth weight and avoidance of antenatal measures were found to be most associated causes with occurrence of malformation.

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Evaluation of polymorphism of cytochrome CYP2E1 in normal healthy adult Maharashtrian subjects

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**Background & objectives:** CYP2E1 (Cytochrome P450 2E1) is an important enzyme which metabolizes many drugs including isoniazid. Isoniazid induced hepatitis is a common adverse drug reaction. We thus decided to evaluate the polymorphism of CYP2E1 in healthy adult Maharashtrian volunteers by phenotyping to determine the extent of rapid metabolizers in the population.

**Methods:** A 500 mg single dose of chlorzoxazone (CZX) – the FDA approved probe drug for CYP2E1 was administered to healthy Maharashtrian subjects. Venous blood samples 2 hs post dose were collected and analyzed for CZX and 6-hdroxy CZX and the metabolic ratio was calculated. Extent of rapid metabolizers (RMs) and slow metabolizers (SMs) were calculated using Probit Plot. A total of 49 samples were studied over a two month period.

**Results:** 32.65 per cent (16 out of 49) of the subjects were found to be RMs and 67.35 per cent were PMs and this distribution gave a preliminary indication of the activity of CYP2E1 in Maharashtrian population.

**Interpretation & conclusions:** A single dose of 500 mg chlorzoxazone was shown to be a safe probe drug for phenotyping study of CYP2E1. Higher CYP2E1 activity in 32.65 per cent of the Maharashtrian population could indicate susceptibility to isoniazid induced hepatitis in them.

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Analysis of the types of anaemia in severe chronic renal failure

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**Background & objectives:** Anaemia is an invariable manifestation of severe chronic renal failure. India, a country with predominance of deficiency disorders, we studied the incidence and analyzed the types of anaemia in severe (predialysed) chronic renal failure patients, which could be due to these deficiencies. Effect of Fe,Vit. B12, folic acid supplements alone without erythropoietin on Hb levels were also assessed, as these would decrease the erythropoietin complications, cost of medications and prolong the survival of the patient.

**Methods:** The blood report (CBC) of the severe predialysed chronic renal failure patients was obtained and scanned for anaemia. Peripheral smear was taken and types analysed. In affordable patients, individual assays were done. Then as per their deficiency, Fe, vit. B12, folic acid supplements were given. After 3 month follow up period, those still in the predialysis phase were done Hb% and peripheral smear and compared with their previous reports.

**Results:** Maximum number of patients was in the 50-60 yr age group with male: female ratio 15:9.34. Predialysed severe chronic renal failure patients were scanned. Incidence of anaemia was 94.12 per cent leaving 2 without anaemia. Of them, 50 per cent had normocytic normochronic anaemia, 33.34 per cent microcytic hypochromic, 12.5 per cent macrocytic normochronic and 4.16 per cent with dimorphhic anaemia. Three months later their entire blood picture improved except for 3. But only 10 had their Hb per cent increased leaving the rest 14 with their Hb per cent either static or a decrease. (t=0.464; P=0.647).

**Interpretation & conclusions:** The insignificance of P value could be due to lack of erythropoietin administration or also due to disease progression. Thus erythropoietin is essential for anaemia of sever chronic renal failure, but a correction of these deficiencies could give better response and good quality of life to these patients.

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Detection & typing of bacteria isolated from currency in circulation

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Background & objectives: Currency might act as fomites, playing an important role in the transmission of microorganisms. In this era of increasing immunosuppressed population, this deserves special attention since currency is always widely exchanged for goods and services throughout the world. The objectives of the study were to screen the currency in circulation for colonization of microorganism, study the antibiotic susceptibility patterns of the isolates, and typing of the isolates by molecular technique.

Methods: 25 samples each of coins and currency notes were collected from general population in Mangalore. Bacteriological analysis of the currency was done by standard microbiological techniques. Isolates were identified biochemically and antibiogram was done by disc diffusion method. Isolates were typed by random amplification of polymorphic DNA (RAPD) technique.

Results: Among the currency notes and coins screened, organisms like Staphylococcus aureus, Staphylococcus epidermidis, Citrobacter spp., Klebsiella spp., Acinetobacter spp., Escherichia coli, Pseudomonas aeruginosa and Aspergillus niger were isolated. Many of the isolates were found to be sensitive and a few were found to be resistant to the antibiotics tested. RAPD typing showed genetic similarity and differences among the isolates from coins and notes.

Interpretation & conclusions: Bacterial colonization is seen in the currency circulating in Mangalore. Few of the pathogenic isolates like S. aureus, Klebsiella and E.coli detected on the currency may pose a health hazard to the immunocompromised individuals. Genetic similarity among a few isolates indicates a common ancestral origin or a common source. Proper hand washing after currency handling and before food consumption may reduce the risk of infection.

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Perirhinal cortex lesions delay ejaculation in rats

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Background & objectives: Afferent connections from the perirhinal cortex (PRh) form a major input to the hippocampal formation, which is known to be involved in sexual behaviour in rodents. But there is a lacuna in literature regarding the role of the PRh in sexual behaviour. In the present study, the effects of neurotoxic lesions of PRh on different components of male sexual behaviour were assessed in sexually active rats.

Methods: Male Wistar rats were divided into 2 groups – 5 rats for bilateral lesion of PRh by stereotactic administration of N-methyl-D-aspartate (NMDA); and 5 rats for SHAM lesion using saline. Pre-and post-lesion sexual behaviour was compared using standard apparatus.

Results: Bilateral NMDA lesion of the PRh caused a significant reduction in sex drive scores and significantly delayed ejaculation latency as compared to SHAM lesion.

Interpretation & conclusions: The present findings suggest that the PRh has a role as a facilitator in the expression of sexual behaviour in the male rat. The mechanism of this facilitation may range from a role of the PRh in sexual motivation secondary to its well known involvement in olfactory perception and memory; as a facilitator of neural pathways responsible for ejaculation; to its role in spatial processing; or possibly a combination of these.

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Heart rate & blood pressure responses to acute psychological stress associated with a ventromedial prefrontal cortex-dependent task in young healthy volunteers

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Background & objectives: To measure and compare heart rate and blood pressure responses to the Wisconsin Card Sorting Task and the Iowa Gambling Task.

Methods: Most tasks used to elicit psychological stress depend directly or indirectly on the prefrontal cortex. The Wisconsin Card Sorting Task (WCST) is accepted to be dependent particularly on the dorso-lateral prefrontal cortex (DLPFC), critical for working memory and perceptual and attentional shifts. The WCST is widely used for the assessment of prefrontal cortex function. The Iowa Gambling Task (IGT) is ventro-medial prefrontal cortex (VMPFC)-dependent. It has been used to detect and measure impairments in decision-making that involve uncertain outcomes. Thirty young, healthy, male volunteers in the age group 17-21 yr performed a computer-administered version of these two tasks, during the course of which their heart rate and blood pressure were monitored using an automated non-invasive blood pressure monitor. Baseline recordings taken during rest periods preceding the tasks and peak measurements during the tasks were used to determine heart rate (H), systolic pressure (SP), diastolic pressure (DP), pulse pressure (PP), and mean arterial pressure (MP) responses. The responses were analyzed with paired sample student’s t tests.

Results: H, SP, DP and MP increased significantly on performance of both tasks. DP and H responses were more robust than SP responses. H, DP and MP responses to the WCST was significantly greater than their responses to the IGT. PP responses to the two tasks were small, and did not differ significantly from one another.

Interpretation & conclusions: The moderate increase in H and DP with a smaller increase in SP suggests a mixed alpha-and beta-adrenergic pattern of cardiovascular components with both central and peripheral vascular components. Since the neuro-anatomical bases of these tasks are well-characterized, they may be developed as useful laboratory stressors for cardiovascular reactivity research.

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A clinical features & outcomes in patients with pyogenic meningitis due to Streptococcus pneumoniae & other bacteria

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Clinical profile of kala-azar in north Bihar

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Relationship between nutritional & socio-economic status & otitis media in primary school children

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Background & objectives: Screening of school children aged 6 to 10 yr for prevalence of otitis media. To explore the relationship between otitis media and nutritional status and also relationship between otitis media and socio-economic status.

Method: A cross-sectional survey was conducted among 1000 children of age ranging from 6 to 10 yr from 5 schools of suburban cities of Dakshina Kannada district. All the children were interviewed and otologic examination done by an ENT specialist. Among 1000 children, 46 otitis media cases were found. For these 46 cases, 92 controls were taken and both cases and controls were categorized under Kuppuswamy classification and both graded according to I.A.P classification of malnutrition separately.

Result: There was a positive correlation between malnutrition and otitis media (\(P=0.01\)) and in case of boys, there was strong association (\(P<0.01\)) but in case of girls, association was not significant. There was also a strong correlation between socio-economic status and otitis media (\(P<0.001\)) and in both boys and girls there was a strong association (\(P=0.025\) and \(P=0.01\)).

Interpretation & conclusions: Prevalence of otitis media in Dakshina Kannada district was 4.6 per cent. It implies that both malnutrition and lower socio-economic status are risk factors for otitis media.

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Femoral catheter associated infections in haemodialysis patients

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Background & objectives: The incidence of femoral catheter associated infections in haemodialysis patients is much higher since it is a very infection prone area and biofilm formation on these devices occurs rapidly. We tried to analyse this problem in Tirunelveli area.

Methods: 32 femoral catheter tips were collected and processed by semi-quantitative culture, fluorescent microscopy (acridine orange), direct Gram staining and blood culture during June–August 2007, from 3 dialysis centers in Tirunelveli.

Results: Out of 32 tips, 11 were positive for biofilm by direct A.O. and Gram staining. Among these 11 samples, 8 were culture positive by semi quantitative method. Blood culture was negative in all 32 cases. But clinically sepsis was diagnosed in 2 patients, for whom A.O., Gram staining and tip culture were positive. Antibiotic locking solution (cefazolin) was used in 8 cases; among these 2 were culture positive.

Interpretation & conclusions: One fourth of femoral catheters studied indicate either colonization or infection by all the three methods. None of the cases proved to be bacteraemic since all the blood cultures were negative. Sensitivity of A.O. and Gram staining was 100 per cent as all the culture positive catheters (8) were picked up for biofilm formation by these direct methods whereas specificity was only 72.72 per cent for both these procedures. Number of catheter days varied between 2-10 days with an average of 6.47 days. In case of 2 patients who developed sepsis and subsequently died, the catheters were removed after 8th day. Since all the catheters studied were made up of same material, the variation in biofilm formation in different materials could not be analysed. Usage of antibiotic lock solutions did not contribute much in the prevention of biofilm formation. Since the sample size in this study was small, it needs further analysis with larger sample size for a longer duration.

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Emergency contraception: Awareness & usage trends in two major tertiary care hospitals in the national capital city of India

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Background & objectives: This study was undertaken to evaluate the awareness and usage of emergency contraception (EC) and whether providers use the opportunity to educate their clients.

Methods: Cross-sectional, questionnaire-based study was conducted in the Family Welfare clinics of LNH (n=150) and RMLH (n=150) in the period of November 2006-February 2007 among the women who came to seek MTP. Analyses were done to assess their socio-demographic profile, knowledge and usage of EC and post MTP counselling by the providers.

Results: The awareness status of the LNH group (3.3%) was found to be significantly lower than RMLH group (19.3%). There was a significant relationship between the awareness and education levels of the patients (P<0.005). Not even a single woman had ever used EC. None of the patients in LNH were given any information about EC whereas 35 (23.3%) women in RMLH were counselled.

Interpretation & conclusions: The study concludes that EC in Delhi and possibly India is much underpublicized and underused. Educated women are more likely to know and use EC and thus, strategies to increase awareness and acceptability though information, education, and counselling using different media and methods along with the training and sensitization of the providers should be implemented.

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Comparison of the weight of infants: Breast fed versus top fed

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Background & objectives: (i) To compare the weight gain in infants at six months of age who were exclusively breast fed versus those who were partially breast fed and see if there was any statistically significant difference in weight gain velocity of two groups. (ii) To examine the adequacy of breast milk alone in sustaining normal growth during first six months of life in Indian scenario by comparing the weight gained by exclusively breast fed group with the national standards.

Methods: A retrospective cohort study over a period of two months was undertaken in CH(SC) Cohorts (200) were selected and classified based on previous records in two groups : 106 in group A (exclusively breast fed) and 94 in group B (partially breast fed). Weight was recorded and the mean weight gain in two groups was tabulated and analyzed statistically by z test. The data were also compared separately in males and females. To see the effect of confounding variables like socio-economic status and infections (diarrhoea) were data also analysed in these regards.

Results: Amongst the 178 subjects who completed the study, following results were obtained. (i) Mean weight gain in group A was found to be approximately 6.2 per cent higher than in group B which was statistically significant (z=3.69). (ii) Mean weight gain in females of group A was 2.52 per cent higher than males while it was slightly lower in group B. (iii) The incidence of diarrhoea was 3.9 in group A while 6.3 in group B which was statistically significant (z=4.67). (iv) In subgroup with monthly income > Rs.5000/- there was not much difference seen in group A while it was statistically significant in group B. (v) Most important causes of non-exclusive breast-feeding were found to be inadequacy of milk production (40%), working mothers (23%) and lack of awareness of socio-cultural practices (23%).

Interpretation & conclusions: Exclusive breastfeeding till six months of age is an effective feeding regime able to sustain adequate growth of infants even in lower socio-economic groups. It reduces incidences of GI infections which may contribute in better weight gain velocity. As lack of awareness about advantages of breast feeding is an important cause of non-exclusive breastfeeding, mass campaigns and health education amongst susceptible populations need to be carried out.

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Anterior fontanelle sizes in healthy term newborns: Correlation with anthropometric measurements

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Backgrounds & objectives: Anterior fontanelle (AF) is physician’s window to infants developing brain and state of health. Data on normal fontanelle size in our population are lacking. The main objectives of the study were to measure anterior fontanelle size and correlate it with length, weight and head circumference and compare the two methods of measuring AF size.

Methods: Subjects consisted of 300 term healthy newborns without any congenital anomalies. Sex, birth order, type of delivery and status of posterior fontanelle was recorded. AF size and anthropometric parameters were measured within 72 hs of birth. AF size was measured using a vernier’s caliper – Method I (AFsize1) - Mean of anteroposterior and transverse diameter, Method 2 (AFsize2) – Mean of both oblique diameters. Relation between AF sizes by two methods and there relation with anthropometry was determined. P<0.05 was taken as significant.

Results: Of the 300 neonates 149 were males and 151 females. Mean AF size was 2.63 + 0.55cm and AFsize2 was 2.085 + 0.534cm. Limits of disagreement were from – 0.24 to 1.28 cm. AFsize1 was greater than AFsize2 in 280 (93.3%) infants, less in 16 (5.3%), same in 4 (1.3%) infants. AFsize1 correlated with AFsize2 (P<0.05). Both AFsize1 and AFsize2 correlated with length and head circumference (P<0.05). There was no correlation with the weight of the term infant. Regression equation was calculated for AFsize1 and AFsize2 with length and head circumference. Posterior fontanelle was open in 69 (23%) cases.

Interpretation & conclusions: There was agreement in the two methods of measurement of AF size. AF size in term infants correlated with length and head circumference but not with weight and sex.

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Pulmonary function test (PEFR) in different stages of ante-natal & post-natal period

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Background & objectives: To determine the pulmonary function test (PEFR) in different stages of ante-natal and post-natal period. To evaluate the effect of gestational age, parity and mode of termination of pregnancy (MOTP) on the pulmonary functions of pregnant women. To compare lung functions of pregnant, non – pregnant and postnatal women.

Methods: 300 women – 60 each in non – pregnant, 1st trimester, 2nd trimester, 3rd trimester, postnatal period were taken. Their age, height, weight, parity and other vitals were noted. Their observed PEFR was obtained with the help of Mini Wright Peak Flow Meter (PFM). The predicted PEFR (depends on the age and height of subject) was obtained by referring to the EU scale. Observed PEFR = 80 per cent predicted PEFR, was normal. The obtained data were analyzed and tabulated.

Results: The percentage of subjects with significantly low observed PEFR increased from 44 per cent in non – pregnant/1st trimester/ early 2nd trimester to 63 per cent in 3rd trimester (56% in 25 – 30 wk, 60% in 31 – 35 wk and 71% in 36 – 40 wk gestation) and its 75 per cent in immediate post-natal period. Mean Observed PEFR of non – pregnant women, women in 1st and 2nd trimester was within normal range (=80% predicted PEFR) however in 3rd trimester and postnatal period, it was significantly lowered (74, 70% respectively). Mean observed PEFR in Para -1 or 2 was within normal range but in cases with parity = 3, it is significantly lowered.
Overall mortality in patients with cancer or diabetes, & with both cancer and diabetes

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Background & objectives: Cancer of all forms account for about 12 per cent of all deaths throughout the world. In India, cancer has become one of the ten leading causes of death. It is estimated that there are nearly 1.5-2 million cancer cases at any given point of time. On the other hand, the prevalence of diabetes for all age-groups worldwide was estimated to be 2.8 per cent in the year 2000 and is estimated to become 4.4 per cent in 2030. By the year 2030, India is expected to be the home of 79.4 million diabetic people as compared to 35 million diabetic people at present becoming Diabetic capital of world. The association between diabetes and cancer has been reported in several studies however none has been reported from India even though it is proposed that this region will have large incidences of both these disorders which will have impact on socio-economic status. The aim of the present work was to compare mortality from site specific and sex specific malignancies in diabetic population and non diabetic population with an objective to draw conclusion on the interrelationship between diabetes and cancer.

Methods: Retrospective cross-sectional study was undertaken based on death certificate analysis. In this study 14838 reported Death Certificate of one year (January 2006-December 2006) were analyzed.

Results: 14838 Death certificate were analyzed of which 1212 (8.16%) death were with diabetes related disorders and 1012 (6.8%) were due to cancer. Of the total diabetic population (1212), 85 patients had cancer that corresponds to 7.01 per cent of the diabetic population whereas 6.8 per cent (927/13626) of the non diabetic population had cancer. Percentage occurrence of various cancer forms in deceased cancer as well as those with diabetes and cancer was calculated along with the predominant forms in male and female population in both groups were calculated. In non diabetic population major cancer forms in male were Ca lung, liver colon, oral cavity, leukaemia, oesophageal, and prostrate. In female Ca, breast, cervix, ovary, colon, liver oral cavity. Like wise in diabetic population with cancer the Predominant forms were calculated both in male and female populations. Mean Survival age in each cancer types with their diabetic counterparts were compared. Statistical association of different cancer forms in diabetic population with there counterparts in non diabetic population were compared. Sex specific cancer in diabetic and non diabetic population were compared both in Male and Female Separately.

Interpretation & conclusions: This study suggested that though the occurrence of certain cancer types increase in diabetics, at the same time diabetes or anti-diabetic treatment given to the patients seems to have protective effect towards the occurrence or progression of certain cancers types. Similarly, diabetes seems to be associated with decreased survival rate in case of patients with certain types of cancers whereas in others it seems to help by improving the survival age of patients suffering from certain cancer types. This study provides impetus for a cohort study to understand the interrelationship between diabetes and cancer.

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Are mortuaries a potential health hazard for those working there?

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Seroprevalence & superinfection of hepatitis E in patients with chronic liver disease

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Enumeration of microorganisms from corneal ulcers with special reference to ocular cosmetics

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Background & objectives: Disease of cornea are important as it may lead to loss of vision. Several investigations reported an apparent increase in the incidence of bacterial corneal ulcers with increasing usage of ocular lenses. Based on the above, the present study was undertaken to enumerate the microorganisms from infected patients of both sex and the microorganisms were identified. Dominant species was found and compared with data base.

Methodology: Sample size: 104, lens wearers and non-wearners of both the sex. Material collected from ulcer and sample was streaked on blood agar plate and isolated colonies were subjected to Gram stain, capsular stain and bio-chemical tests. Analyses were done for dominant species.

Results: Our results showed the occurrence was well evidenced in 21-40 yr in both sex. Male non-contact lens wearers were high in the age group between 41 to 60 yr. The duration was observed in all types of lens wearer more than 12 months were found to be suffered from corneal ulcer. Among isolates were Pseudomonas pneumoniae and Streptococcus pyogenes. In similarity search showed Bradyrhizobium having highest score of 160 Bits followed by Shigella and Vibrio.

Interpretation & conclusions: Incidence in relation to sex, showed male more prone than female patients, in relation to age, 21-40 yr had high occurrence. Lens wearer were less compared to corneal trauma. P. aeruginosa was the predominant species; BLAST search showed an ancestral relationship between P. aeroginosa, Bradyrhizobium, Shigella, and Vibrio.

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Assessment of hearing loss following therapy with ototoxic drugs

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Backgrounds & objectives: To assess changes in auditory thesholds following systemic therapy with ototoxic drugs and to estimate incidence of ototoxicity with various agents.

Methods: Patients who were being treated with streptomycin, kanamycin and gentamicin were selected after history and examination to rule out pre-existing hearing loss. First pure tone audiometry was done within 1st wk of admission and 2nd PTA was done at the end of 3 wk of therapy. Patients were also evaluated for subjective symptoms of ototoxicity by oral questionnaire.

Results: Statistically significant hearing loss was noticed at frequency of 12000Hz. at end of 3 weeks. No subjective symptoms developed. Incidence of ototoxicity for streptomycin was 20 per cent, kanamycin 33 per cent and gentamicin 10 per cent.

Interpretation & conclusions: The role of high frequency audiometry in early detection of development of ototoxicity is noticeable. The patients undergoing long term therapy with ototoxic agents must undergo audiological surveillance during treatment. Any significant change in auditory thesholds must be evaluated by ENT specialist before further continuation of treatment. Further research is required to find out methods to prevent ototoxicity.

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Profile of hyponatremia in intensive medical care unit (IMCU) of government stanley hospital

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Background & objectives: To evaluate incidence, aetiology and clinical profile of hyponatremia in IMCU, Government Stanley Hospital.

Methods: Patients admitted in IMCU Government Stanley Hospital were taken for study. The following data were collected: name, age, sex, address, clinical features, diagnosis, serum urea, creatinine, electrolytes (plasma Na, K, Cl), blood sugar. Patients with sodium level below 135 meq/l were considered as hyponatremic. Clinically they were divided into symptomatic and asymptomatic based on neurological features, based on volume status as euovolumic, hypovolumic and hypervolumic. Plasma sodium levels were divided as PNa 134-130, 129-125, 124-120, <120 meq/l.

Results: 165 patients were evaluated (93 males and 72 females) 39 were hyponatremic (23.6%) (21 males, 18 females). Of them, 29 (74.4%) were euovolumic; 6 (15.4%) were hypovolumic; 4 (10.3%) were hypervolumic. 14 patients were unconscious probably due to primary disease. Two patients were symptomatic due to hyponatremia and their sodium level were <125meq/l. Thirty (76.9%) patients had euovolumic state was found to be congestive cardiac failure, cirrhosis, acute renal failure; hypovolumic was acute diarrhoeal disease, fever, DKA and hypervolumic had aetiology of CNS, poisoning and miscellaneous causes.

Interpretation & conclusions: Incidence of hyponatremia was found to be 23.6 per cent in IMCU. There was no significant male, female difference. Most of them (74.4%) were euovolumic. 12.8% had plasma sodium <125meq/l; 2 out of 39 were symptomatic. Mortality among hyponatremics was 23.1 per cent.

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Knowledge, attitude & practice (KAP) survey & risk factor assessment in type 2 diabetic patients with foot ulcers

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Backgrounds & objectives: To assess the KAP of diabetic patients with respect to foot ulcers and to identify the risk factors predisposing to diabetic foot ulcers.

Methods: Risk factor assessment and KAP survey was performed using a structured questionnaire by face-to-face interview among randomly chosen 203 diabetic patients with and without foot ulcers who visited the Diabetes and Podiatry clinic at Amrita Institute of Medical Sciences over a period of 2 months. Descriptive analysis, chi-square test and independent t test were done using SPSS software to analyze data.

Results: Among 203 patients, 103 had foot ulcers and 100 did not have foot ulcers (137-males; mean age=59.18 yr and 66-females; mean age=61.35 yr). Of the major risk factors, peripheral neuropathy, peripheral vascular disease, retinopathy and nephopathy were significant (P=0.001) with respect to foot ulcers. KAP survey showed that both the groups had adequate knowledge and good attitude towards diabetic foot care, but their foot care practice was found to be very poor (P=0.001).

Interpretation & conclusions: Strict glycaemic control to prevent microvascular complications and good foot care practices can prevent the occurrence of foot ulcers to a great extent.

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Foetal monitoring by NST (non-stress test) & DFMC (daily foetal movement count)

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**Background & objectives**: NST and DFMC are regarded as means of signaling foetal jeopardy. A few studies deem these tests ineffective, mainly DFMC. This study revisits the subject of significance of these tests in predicting the foetal outcome.

**Methods**: Pregnant women (n=100) in 3rd trimester were included in the study. They were categorized into 4 and the foetal outcome was assessed. Category 1, 2, 3, 4 were monitored by NST, DFMC, no tests and both tests respectively.

**Results**: NST and DFMC interpretations were reactive (79%), non-reactive (21%) and good (84%), reduced (16%) respectively. Sensitivity of NST, DFMC were 85, 81 per cent and specificity were 78, 71 per cent respectively. Also percentage of pregnant women requiring emergency LSCS among category 1 with reactive and non-reactive NST were 10, 40 per cent and category 2 with good and reduced kick count were 17, 33 per cent category 3 was 27 per cent and Category 4 was 38 per cent. In the last category the high rate was because 6 out of 7 women needed emergency. LSCS had abnormal NST or DFMC or both.

**Interpretation & conclusions**: NST reactive and good DFMC group experienced a favourable outcome, non-reactive and reduced DFMC group demonstrated a significant increase in rate of caesarean for foetal distress. Based on our experience, NST and DFMC continue to be a valuable test for the assessment of foetal well-being.

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**In vitro** culture of human amniotic fluid cells as a source of stem cells

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**Background & objectives**: To derive the protocols for isolation of stem cells and its characterization from human amniotic fluid. To study the expression of the specific marker for mesenchymal stem cells, collagen by gene expression analysis using RT-PCR and protein chemistry using SDS-PAGE analysis.

**Methods**: In this study a two-stage culture protocol was followed to culture the human amniotic fluid cells and isolate stem cells. Human amniotic fluid obtained from full term caesarian section centrifuged at 2000 rpm 15 mins/pellet was cultured in alpha MEM (+ foetal bovine serum).

**Results**: Amniotic fluid consists of a cluster of cells of different morphologies including ellipsoidal, spindle shaped, small cylindrical cells. The amniotic epithelial cells dominate in the pelleted cell culture. The supernanant cells were the source for mesenchymal progenitors which were found to have small cylindrical morphology and could form monolayer of spindle shaped cells in 7-10 days in defined culture condition correlated to the mesenchymal stem cell morphology reported. These monolayer cells were found to express specific marker for mesenchymal stem cells, collagen by gene expression analysis using RT-PCR and protein chemistry using SDS-PAGE analysis.

**Interpretation & conclusions**: Foetal tissue engineering has emerged as a promising concept in surgical reconstitution of certain birth defects. Foetal tissue cells can be harvested, cultured and manipulated *in vitro* to suit various clinical applications. The preliminary reports on these cells are promising and these cells could be a best non-invasive source of stem cells with remarkable plasticity. Amniotic epithelial cells have been used for issue replacement therapies. These cells have the potential to differentiate among such various tissue lineages such as the neurons, cardiomyocytes and hepatocytes. Hence this study delivers the protocols for isolation of stem cells and its characterization from human amniotic fluid.

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Prevalence of suicidal ideation among alcoholic depressed patients

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Background & objectives: Suicidal risk is one of the most feared consequences among alcoholics and depressed patients. This study was aimed at identifying the risk in people with both the co-morbid conditions co-existing together.

Methods: Among the depressed patients attending the KIMH, the alcoholics with significant history of alcohol intake were identified and a simple enquiry regarding the suicidal ideation were recorded along with other potential causes contributing to the same. The data were compiled and laid down as per the standard protocol of ICD-10. The study period was between March and May 2007.

Results: Out of a total 93 depressed patients 17 were found to be alcoholics. 47(50.53%) patients had suicidal ideations of whom 12(25.53%) were alcoholic depressed patients and rest 35(74.46%) were non-alcoholic depressed patients. The odds ratio was found out to be 2.8, ÷ ² = 3.35 P < 0.1. The attributable and relative risk ratios were found out to be 35 per cent and 1.54 respectively.

Interpretation & conclusions: Though alcohol is a recognized risk factor for many psychiatric illnesses, adequate measures are yet to be taken to resolve alcohol related problems and suicide is one huge social hindrance that definitely needs quick attention.

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Evaluation of the usage of FFP in a tertiary care hospital

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Background & objectives: Given the rise in the inappropriate use of fresh frozen plasma globally, we decided to assess the pattern of fresh frozen plasma usage as well as to assess the rate at which it is being misused.

Methods: The in-patient registration numbers of those who received FFP transfusions were obtained from the blood bank. Their records were retrospectively analysed for the indication for the fresh frozen plasma transfusions as per the guidelines issued by the college of American Pathologists (1994) and the BCSH Guidelines (1994).

Results: Of the 418 transfusions given, only 21 per cent (88) were appropriate. In the rest (78.9%), the transfusion was inappropriately used.

Interpretation & conclusions: It was proved that the number of inappropriate requests consistently outweighed the appropriate requests. Common conditions where inappropriate uses of fresh frozen plasma have been noted include chronic liver disease, cardiac surgeries and other general surgeries. It was concluded that the use of fresh frozen plasma without a documented coagulopathy was irrational.

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Incidence of oral candidiasis in HIV positive patients

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Background & objectives: Increasing incidence of candidiasis in immunocompromised patients is very well documented. Various types of Candida spp. cause infection in HIV-positive patients. This study was undertaken to see the prevalence of oral candidiasis in HIV-positive patients. Also, to study the effect of fluconazole on these Candida isolates. Various species causing this infection are also identified.

Method: Oral swabs were taken from patients with oral lesions attending the ART OPD. Then Candida was isolated by conventional methods. Fluconazole sensitivity was studied using disk diffusion method.

Results: Out of 50 cases seen, 41 had oral candidiasis, while 9 were due to staphylococci and other organisms. Out of 41 isolates, 2 were resistant while the remaining 39 were sensitive to fluconazole, Candida albicans was the only species identified.

Interpretations & conclusions: This study revealed a high prevalence of C. albicans in oral candidiasis in HIV-positive patients. There was male preponderance of the disease in the area. Fluconazole is an effective drug against this organism.

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Multi-ingredient plant formulation (MIP) against effects induced by acute cold stress in streptozotocin induced diabetic rats

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Backgrounds & objectives: To evaluate the effect of multi-ingredient plant (MIP) formulation after acute cold stress in a rat model of diabetes.

Methods: After Animal Ethics Committee approval, 30 female Wistar albino rats (180-200 g) were procured. Gp1 (n=6) served as normal control. The remaining rats were injected streptozotocin i.p. After 7 days, they were randomized into 4 groups: Gp2: CMC, Gp3: Glibenclamide (Glib), Gp4: MIP and Gp5: Glib + MIP. Treatment was given daily for 21 days. On days 7 and 28, after overnight fasting blood glucose levels (BGL) were estimated. On day 28, the rats were exposed to acute cold stress (1 h at 4°C) and BGL were estimated.

Results: Treatment with MIP, Glib and their combination caused a significant decrease in FBG on day 28, which was comparable in all the 3 groups. In Gp2, cold stress induced a significant reduction in BGL (P<0.001) (% reduction: 41.84). All the 3 treatment groups prevented this fall.

Interpretation & conclusions: MIP has anti-hyperglycaemic potential comparable to Glib. It also offered protection against cold stress, which was comparable to Glib. The combination of MIP and Glib offered no additional protection over and above that shown by MIL and Glib groups.

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Prevalence of computer vision syndrome (CVS) among computer users

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Backgrounds & objectives: To study the prevalence of ocular complaints related to computer usage.

Methods: One hundred computer users from Ludhiana city using computers for at least 2 h at a stretch per day or 15 h a week for the past 6 months were included in the study after taking an informed consent. Detailed history of ocular symptoms, environment and pattern of computer usage was recorded as per standard protocol. Three tests were performed on all subjects to diagnose the three main abnormalities in tear function. These were the tear film break up time to test the stability of the tear film; Schirmer test for the tear secretion; and Rose Bengal test for tear volume.

Results: The total number of subjects affected was 51 per cent. The prevalence increased with age ($P=0.001$). Increasing duration of working on computers increased the prevalence ($P=0.003$), but there was no significance of time spent at a stretch, redness of eyes ($P=0.003$) and blurred vision ($P=0.005$) were associated with developing CVS. Duration of work also had a significant effect ($P=0.003$) on the diagnosis.

Interpretation & conclusions: Several studies conducted in India and abroad have shown an increasing prevalence of CVS. They have concluded that CVS is the result of several causative factors. A subject with symptoms of CVS can present in a variety of ways. A careful history and examination should reveal a correlation between VDT usage and ocular complaints. The best treatment appears to be a multi directional approach with modification of ergonomics, use of spectacles, proper lighting and environmental factors and properly scheduled work breaks.

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Evaluation of the prescription practice among doctors of the drug nimesulide

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Background & objectives: Nimesulide is a popular NSAID that has potent analgesic and antipyretic action. This is preferred by most doctors since its GI tolerance was found to be superior to other drugs in its class, but recent reports suggest otherwise. Of late it has been implicated in causing many adverse drug reactions (ADRs) such as hepatotoxicity, renal toxicity, haematuria, etc. and has been banned in many countries. The objectives of the study included finding out the proportion of medical practitioners (including dentists) who prescribe nimesulide, the frequency of prescription, the reason for prescription (analgesic/antipyretic), the frequency of occurrence of ADRs and their views on the drug and its safety level.

Methods: A total of 150 doctors (110 medical doctors and 40 dentists) spread across a cross-section of clinics, nursing homes, general and specialty hospitals were distributed a semi-structured questionnaire.

Results: It was observed that 64 per cent of the doctors prescribe nimesulide, of which 86.5 per cent prescribe for analgesia, 30 per cent prescribe for the anti-pyretic effect. Out of the 110 medical practitioners consulted in this study, only 30 have come across a case of nimesulide side effects. The most commonly reported cases include haematuria/haematemesis, rashes, renal toxicity and hepatotoxicity, respectively in that order. All doctors knew that nimesulide was banned in some country. Out of which 98.5 per cent said the U.S.A, 38 per cent said the E.U. Only 4 per cent knew that it was also banned in next-door neighbours, Sri Lanka and Bangladesh. 45 per cent of the doctors support the continued use of nimesulide, of which 64 per cent want it to be a prescription only drug and 34 per cent want it to be used only in emergency cases and situations. 55 per cent of the doctors did not support the continued use of nimesulide.

Interpretation & conclusions: The implications of this study includes assessment of rampant prescription of this drug (with serious side effects), especially for its antipyretic effect, that can be treated with other drugs with potentially less adverse effects and to know the various side effects of the drug and to derive methods to address this issue.

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A study of factors related to suicidal ideas in adolescents and young adults

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**Background & objectives:** The present study was conducted to assess prevalence of suicidal ideas in adolescents and young adults and to find out any correlation with personality, stressful life events and psychosocial stress, psychiatric illness, depression and alcohol abuse.

**Methods:** In this cross-sectional study, data were collected from 100 adolescents and young adults from five educational institutions in the age group from 16 - 22 yr. Socio-economic data were taken and the students were assessed for Psychosocial Stress, General Health Questionnaire, Suicidal Risk Eleven, Personality Trait Inventory, Zung Depression Scale and CAGE Questionnaire.

**Results:** Out of the total sample, 13 students reported having suicidal ideas. Of these students, 61.54, 23.08 and 15.38 per cent were from the age groups of 16 - 17, 18 - 19 and 20 - 21 yr; respectively. Of these 13 students, 61.54 per cent were females, more than three fourths were from urban localities, more than half were studying in school and majority were living with parents. Psychosocial stress was moderately high in 23.08 per cent and very high in 38.46 per cent students. Moderately high and very high stressful life events were reported by 38.46 and 15.39 per cent students, respectively. None of the 13 students reported alcohol abuse. However, 61.54 and 46.15 per cent scored positive on GHQ and Zung Depression Scale, respectively.

**Interpretation & conclusions:** There is high prevalence of suicidal ideas in adolescents and young adults. More suicidal ideas were reported in age groups 16 - 17 yr, school students, and those from urban localities. Students having suicidal ideas had psychological problems, depression, more stressful life events and psychosocial stress.

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An aetiological study: *Legionella pneumophila, Mycoplasma pneumoniae, Chlamydia pneumoniae* as the cause of community-acquired pneumonia in hospitalized patients in Mumbai

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**Background & objectives:** To study the incidence, clinical, radiological and laboratory profiles and outcomes of pneumonia caused by *L. pneumophila, M. pneumoniae, C. pneumoniae* and thus identify features differentiating these from community-acquired pneumonia caused by other organisms.

**Methods:** 34 cases of community-acquired pneumonia admitted to KEM Hospital confirming to the inclusion criteria, consented for participation in the study. Findings of clinical examination and the laboratory data of each patient were recorded. Diagnostic tests were done using immunochomatographic kits for detection of urinary antigen of *Legionella pneumophila*, and serum ELISA testing for IgM antibody titres on paired sera, for detection of *M. pneumoniae and C. pneumoniae.*

**Results:** Chlamydial and Mycoplasmal antibodies were found in 30.30 and 6.06 per cent of patients respectively. No patient tested positive for *Legionella* antigen. A higher respiratory rate (50%) and higher temperature (55.17%) at presentation were associated with more patients in the fatal group. At presentation, 50 per cent of patients with atypical pneumonia showed haemoptysis and had an arterial blood gas level of <7.35 and blood urea nitrogen value > 30 mg/dl. 3 per cent of typical group showed systolic blood pressure <90mmHg.

**Interpretation & conclusions:** There are no features that can be said to significantly differentiate between the profiles of typical and atypical pneumonias, though presence of haemoptysis, low systolic blood pressure at presentation and laboratory values like arterial pH and blood urea nitrogen could be of some use. Mortality in the patients of typical pneumonia was higher than in patients with atypical pneumonia. A past history of any disease and higher temperature and respiratory rate at presentation were near significantly associated with death as the outcome.

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Bed wetting & common habit disorders in school going children

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Background & objectives: Enuresis and common habit disorders like (thumbsucking, nailbiting, teethgrinding, stammering) in school going children are problems which are fairly and evenly distributed among children though they may be of low severity but their prevalence is very high causing extensive psychosocial suffering. The objective of the study was to (i) evaluate prevalence of enuresis and common habit disorders like (thumbsucking, nailbiting, teethgrinding, stammering) in school going children of 5-12 yr of age, and (ii) obtain details of bedwetting including frequency/treatment psycho-social implications so that burden caused due to these disorders on children and their families can be assessed.

Methods: A cross-sectional school based study was conducted in 1011 school going children of 5-12 yr age group from 10 primary schools of Lucknow. Data were collected via questionnaire completed by children. The data were fed in Statically Package for Social Sciences (S.P.S.S.) version 12.0 and analyzed. All relevant details about the objectives as well as correlation between any disorders were thus obtained. Thus prevalence of enuresis and other disorders were found.

Results: Our results showed prevalence of primary enuresis was present in 72.9 per cent of affected children and nocturnal enuresis was in 57.2 per cent (P<.001). Factors associated with enuresis were due to home conflicts in 42.9 per cent (P<.001), parental concern about the problem of children was present in only in 42.9 per cent of parents. Prevalence of other problems as teeth grinding/nailbiting/bed wetting/thumb sucking/stammering/pica was 7.9/7.9/6.9/1/0.6/13.3 per cent respectively. Children between age groups of 7-10 yr had maximum problems.

Interpretation & conclusions: Significant relationship was found between prevalence of enuresis with age, parental bedwetting, home conflicts, poor scholastic performance of children, lack of parental concern and working status of mother.

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Evaluation of antidepressant activity of Zingiber officinale roscae (ginger) on albino rats

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Background & objectives: Depression, recognized a disabling psychiatric illness with lifetime prevalence of over 10 per cent in general population, need long-term treatment which at present involves drugs that are not only expensive but also have many side effects. Ginger has been reported as an item of food, which is thought to ease depression, and therefore chosen to evaluate its antidepressant effect scientifically.

Methods: Albino rats of either sex (weight 170-220g, n=8) were randomly divided in to 10 groups and were given normal saline, imipramine (8, 16 mg/kg), fluoxetine (10, 20 mg/kg), aqueous extract of Zingiber officinale Roscoe (50, 100, 200 mg/kg), AZO + imipramine (50 and 8 mg/kg), AZO + fluoxetine (50 and 80 mg/kg) orally for 14 days. Porsolt's forced swimming test was employed and the duration of immobility in last 4 min of a 6 min test session was recorded and compared statistically using one-way ANOVA followed by Dunnett’s test.

Results: AZO (100, 200 mg/kg), imipramine (16 mg/kg), and fluoxetine (20 mg/kg), AZO (50 mg/kg) with imipramine (8 mg/kg) or fluoxetine (10 mg/kg) significantly reduced the duration of immobility as compared to control.

Interpretation & conclusions: AZO exhibited significant antidepressant activity and also augmented the same of standard drugs in this model of depression. Further study regarding the same appears justified.

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Influence of lifestyle profile on prevalence of obesity in students (12 & 14 yr) in Mumbai

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Background & objectives: With the rising prevalence of obesity amongst adolescents, especially in third world countries like India, we decided to study the influence of lifestyle trends on obesity amongst children between 12-14 yr in a government aided school located in an affluent suburb in western Mumbai.

Methods: This is a cross-sectional study with a cohort of 190 students between 12-14 yr. Their height, weight, abdominal girth and waist circumference were measured and body mass index (BMI) and waist hip ratio (WHR) were calculated. WHR>0.9 signifies central abdominal obesity. BMI for age was calculated by Indian (Agarwal et al. growth charts) and International standards (CDC-NCHS growth charts). The study group was categorised into undernourished, normal, at risk of overweight and obese using the 5th, 85th, 95th percentile values of BMI for age respectively. Data regarding socio-economic status, food and exercise habits were gathered by using students’ and parents’ questionnaire.

Results: The prevalence of obesity was 6.8 and 7.9 per cent, while that of “at risk of over-weight” was 13.7 and 19.5 per cent respectively, according to the International and Indian standards of BMI for age. The prevalence of obesity according to WHR criterion was 20.5 per cent. A positive correlation was found between obesity and food preferences of the children (lunch and dinner only) and between obesity and amount of chocolates consumed per week (P<0.05 in both cases).

Interpretation & conclusions: The age-wise mean BMI values in this study were higher than the national standards indicating an increasing BMI trend over the past few year. The prevalence of undernourished was 25.8 and 8.4 per cent respectively, according to the International and Indian standards of BMI for age. The prevalence of obesity according to WHR criterion was 20.5 per cent. A positive correlation was found between obesity and food preferences of the children (lunch and dinner only) and between obesity and amount of chocolates consumed per week (P<0.05 in both cases).

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Microalbuminuria as a predictive marker for the progression of type II diabetic retinopathy to late microvascular complications (diabetic nephropathy)

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Background & objectives: To analyze the role of urinary proteins in patients with diabetic retinopathy as a marker for microvascular complications occuring in the kidney.

Methods: It is a hospital based study conducted in Osmania General Hospital and Sarojini Devi Eye Hospital. 62 clinically conformed cases of diabetic retinopathy (NPDR and PDR) were interviewed as per pre-designed proforma and their 24 h urine was collected to analyze protein and creatinine. ACR taken has probable equivalent to microal.

Results: A total of 62 cases were studied and grouped as NPDR (28) (Males – 14, Females – 14) and PDR (34) (Males – 24, Females – 10). The mean age of sampling was 53.4 yr for males and 52.69 yr for females in the first group and 56.85 years for males and 44.60 yr for females in the second group. The mean duration of disease was 14 yr in males and females of first group and 12.10 and 63.33 years respectively in the second group. Urinary albumin was found to be 54.7 per cent more in males than females with NPDR and on the other hand 33.64 per cent more in the females than males in PDR group.

Interpretation & conclusions: In the present study a male to female ratio 1. & 2.4 were found in NPDR and PDR groups, showing male preponderance. There was no significant variation in the mean age and the mean duration of the disease between males and females with NPDR. The increased urinary albumin at 54.7 per cent in the males in the first group indicates the probable effect of
Correlation of CD4+ T-Lymphocyte counts & FNAC findings in HIV positive patients with tuberculous lymphadenopathy

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Background & objectives: Tuberculosis, being the most common opportunistic infection in HIV/AIDS patients in India, this study was performed to assess the utility of FNAC in the diagnosis of TB lymphadenitis in HIV positive patients and to correlate the cytological patterns observed with the corresponding CD4+T-cell count of the individual.

Methods: A total number of 42 patients who were diagnosed to have HIV infection and associated TB lymphadenitis by FNAC in our college, during January 2004 to July 2006 formed the study group. A detailed history, examination findings, relevant investigations, HIV test results and CD4 count status were noted. The CD4 count was available in 33 subjects only. The FNAC patterns were also reviewed. Further, the FNAC patterns and CD4 count were correlated in each patient.

Results: In patients with CD4<50 cells/ml; caseous necrosis was seen in 80 per cent of the subjects and AFB positivity was high (80%). With CD4 of 50-100 cells/ml, caseous necrosis was present in 55.6 per cent of patients and 44.4 per cent had predominant epithelioid granulomas. When CD4 was 101-200 cells/ml; 69.2 per cent had epithelioid granulomas and 30.8 per cent had caseous necrosis only. In patients with CD4>200 cells/ml; 100 per cent had predominant granulomas and no patient had exclusive necrosis.

Interpretation & conclusion: As expected, patients with high CD4 count had predominant epithelioid granulomas while those with low CD4 count had predominant necrosis with high AFB positivity (80%). Though a significant correlation was achieved \( P=0.05 \) lymph node FNAC findings in TB cannot be used to predict the possible CD4 levels as there was a wide variation in CD4 count in each pattern observed. However, the CD4 level, if known at the time of FNAC, may imply the expected pattern in the smears prepared.

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Cirrhotic cardiomyopathy-its prevalence & association with blood nitric oxide levels

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Background & objectives: To study the prevalence of cirrhotic cardiomyopathy and its association with blood nitric oxide level.

Methods: Patients with chronic liver disease, cirrhosis-compensated and decompensated diagnosed by blood investigations and ultrasonography were subjected to echocardiography by pulse wave and Doppler to screen for cirrhotic cardiomyopathy. ECG was also done. Their nitric oxide levels in blood was estimated by Ding and Nathan method (1988). Nitric oxide was also estimated in healthy individuals by the same method and the mean was determined.

Results: Pulse wave showed left ventricular dysfunction in 18.2 per cent and right ventricular dysfunction in 72.8 per cent whereas tissue Doppler showed left ventricular dysfunction in 91 per cent and right ventricular dysfunction in 91 per cent. ECG showed QTc prolongation in 27.3 per cent. Nitric oxide was significantly elevated in all the cirrhotics compared to controls.

Interpretation & conclusions: Prevalence of cirrhotic cardiomyopathy was found to be 100 per cent. Tissue Doppler was more sensitive in detecting diastolic dysfunction than conventional pulse wave. Nitric oxide was increased in all the cirrhotics, which may play a role in the pathogenesis of cirrhotic cardiomyopathy.

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Phylogeny of human smads and molecular modelling of smad 5 domains

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Background & objectives: Bioinformatic analysis of human SMAD-5 protein and specifically to (i) determine the functionally important residues of SMAD-5 protein, (ii) reconstruct the evolutionary history of SMAD family of genes, and (iii) predict the tertiary structure of the DWA, DWB domains of SMAD-5.

Methods: Bioinformatic methods employed were: Gen Bank and SWISSPROT for sequence retrieval, PSI-BLAST for database searching from homologues, ClustalW for multiple sequence alignment, GeneDoc and Jalview for MSA editing, PHYLIP package for phylogeny reconstruction, PHYLODENDRON for tree construction, SWISS MODEL for tertiary structure prediction.

Results: Gene sequence of SMAD 5 was obtained. DWA and DWB domain sequences of SMAD 5 was obtained. Multiple sequence alignments of the DWA and DWB domains were done using known homologues. Phylogenetic tree for human SMAD family was constructed. Tertiary structure of DWA and DWB domains were predicted using suitable templates. Quality images were generated using Rasmol.

Interpretation & conclusions: The multiple sequence alignment reveals all the important (highly conserved) positions in DWA and DWB, and mutations here would be deliicious. Phylogenetic tree reveals the sequence of gene duplication events that gave rise to SMAD family. The predicted tertiary structures of DWA and DWB can be further used for site directed mutation studies. Structual information of DWA binding domain of SMAD 5 will further increase our knowledge on the molecular understanding of SMAD 5 function. The predicted structure of DWB is of sufficient quality (target-template alignment identity > 95 %) to use this model for further protein- protein and protein - ligand docking studies.

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Screening for common RTIS in women attending ANC OPD, general hospital Dhule

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Background & objectives: Prevention and control of RTIs/STIs is a recognized strategy for controlling the spread of HIV. Data on RTI prevalence in rural area are lacking. This project was done to find out prevalence of RTIs, in a rural area; Prevalence and causes of P/V discharge (leucorrhoea) and treat them.

Methods: 80 attendees of ANC OPD were selected randomly. After history taking; general, genital and speculum examination, vaginal and endocervical swabs; Pap smear was taken. Vaginal pH, Whiff test, wet and 10 per cent KOH mount, Gram and giemsa stain microscopy were done. VDRL; ELISA for HIV; PCR for Chlamydia trachomatis (NIRRH). Treatment was started.

Results: 51 had P/V discharge (63.7%) 16 of them (20%) had RTI. 9 had RTI (11.5%) of 29 who had vulval pruritis (36.25%). Candidiasis in 19 (23.75%) BV in 12 (15%), Chlamydia trachomatis in 2 (2.5%), HIV in 1 (1.25%), T. vaginalis in 1, N. gonorrhoea (1), HPV 2 (2.5%). Total 38 had RTI (47.5%); 6 had multiple infection (7.5%) Attempt was made to correlate leucorrhoea with age, Hb per cent, parity, education, social status.

Interpretation & conclusions: Commonest complaint is P/Vdischarge. Multiple infections were present. Candidiasis is most prevalent RTI. Screening for common RTIs in ANC should be routinely employed.

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Comparative study of oxytocin & low dose carboprost (PGF2α) in active management of third stage of labour

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Background & objectives: To compare oxytocin and carboprost in active management of third stage of labour for amount of blood loss, duration of third stage and side effects.

Methods: 90 patients without any risk factor for postpartum haemorrhage with 37-42 wk, single gestation were included and were randomly distributed in 3 equal groups receiving injection Carboprost 125 ìg, Oxytocin 5 IU or control. After informed consent, patients of Groups I and II were given respective injections intramuscularly at the time of delivery of anterior shoulder. The cord was removed by controlled cord traction. Amount blood loss and duration of third stage were noted for each patient. The data analyzed using students’t test and c² test.

Results: In our study, the three groups were comparable for age, parity, duration of gestation, haemoglobin. Average amount of blood loss in third stage in patients given carboprost was 94 ml, oxytocin was 122.33 ml and in control group was 162.66 ml. Interpretation & conclusions: Carboprost was more effective in reducing blood loss than oxytocin or control. Oxytocin showed significant reduction in blood loss compared to control. The duration of third stage was not changed significantly by either drug treatment.

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Knowledge, attitude & practices of parents about inhaler therapy of childhood asthma

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Background & objectives: 1. To study the knowledge, attitude and practices of parents towards causation, treatment and inhaler therapy of childhood asthma. 2. To study the correlation of their knowledge with their educational standards.

Methods: A cross-sectional descriptive study was carried out over a period of 2 months in Command Hospital, Pune. Two hundred patients of up to 15 yr of age were seen in OPD. Cases with diagnosis compatible with bronchial asthma were studied using a questionnaire. Basis of diagnosis were clinical features and investigations like spirometry, PEF rates, etc.

Results: (1) Out of 100 parents with children suffering from asthma 83 per cent were aware of their child’s disease status, only 11 per cent knew what it exactly meant. (2) The average age of onset of the disease was 7.4 yr. (3) 40 per cent of parents of children suffering from asthma believed it to be contagious and 37 per cent thought it to run in families. (4) 51 per cent parents attributed the aetiology to exercise and sports, 20 per cent to exposure to hot and humid environment, 30 per cent to cold air and 33 per cent were completely unaware of the causal factors. (5) An analysis of the interventions adopted by the parents in case of an acute attack of asthma showed that a striking 69 per cent of parents were unaware of what to do. 22 per cent would call for doctor helps only 9 per cent were knowledgeable enough to give inhaler therapy before calling upon the physician. (6) Among medications used aerosol therapy (86%) was preferred over oral (14%) drugs. (7) 30 per cent of parents believed medications to be addictive and about 55 per cent thought it to have serious side effects; only 16 per cent were aware of the actual adverse effects. (8) 37 per cent of parents were aware of the indigenous systems of treatment but only 17 per cent had faith in ayurveda and 19 per cent in homeopathic remedy. (9) A majority of parents (48%) believed that treatment was only palliative, only 22 per cent of the parents thought of a permanent cure, 9 per cent were hopeful of remission of disease with age.

Interpretation & conclusions: Despite our understanding of bronchial asthma there is a need to impart knowledge regarding the aetiology, pathophysiology, management and use of inhaler therapy to all parents attending paediatric OPD. While counselling parents, eliciting common concerns and fears is a single and foremost strategy to develop a relationship of trust with the parents.
Exploiting the igloo principle & green house effect to regulate humidity & temperature

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Background & objectives: Patients with acute skin failure (toxic epidermal necrolysis, vesico bullous disorder, exfoliative dermatitis) continuously loses heat and fluid from the body. In our country, we do not have humidifiers and air conditioners (with heating facilities) in most centers. Maintaining higher temperature and humidity will decrease heat loss from the body, fluid lost from the body and also heat lost by evaporation of fluid. The objective of the project was to standardize simple, inexpensive method to regulate the body temperature and humidity in patients with acute skin failure. This study was conducted to find whether the simple hood covered with either aluminium foil or cloth can effectively maintain the temperature and humidity and thereby standardizing simple, inexpensive method to regulate the body temperature and humidity in patients with acute skin failure.

Methods: Fifteen volunteers were studied wherein, the volunteers were asked to lie on the bed with minimum clothing and a hood which was made of metal rods was placed over them. Temperature and humidity of the area around the body within the hood were measured every fifteen minutes for one h. Then, the hood was covered with green cloth and the measurements taken as before for every fifteen minutes for one h. Then, the experiment was repeated with the hood covered with aluminium foil and the readings were taken.

Results: In the experiment, there was an increase in temperature inside the hood covered by green cloth ($P=0.002$ in case of dry temperature) and also inside the hood covered by aluminium foil ($P=0.001$ in case of dry temperature) when compared to temperature inside the uncovered hood. The mean temperature values were also increased. The humidity did not vary significantly inside the covered hood when compared to humidity inside the uncovered hood. The temperature and humidity outside the hood remained almost the same without any significant increase.

Interpretation & conclusions: To conclude it is recommended that hood covered with aluminium foil and green cloth can be used to maintain and regulate temperature during the management of patient with acute skin failure. This also provides privacy to patients and it prevents contact of cloth with raw areas of the body of the patients.

Fluctuations in the blood pressure of adolescents aged 13-14 yr under the influence of stress during exams

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Background & objectives: Given the increasing stress levels in the present adolescent generation, with undue significance being given to performance in examinations, we decided to study the fluctuations it could cause in their blood pressures.

Methods: A sample population of 13-14 yr adolescents of a school was taken and all normal healthy males and females were included. The auscultatory method of measuring B.P. was used. The set of readings taken offhand were considered as baseline (control) for the corresponding readings taken during exams.

Results: Analysis showed significant fluctuations in their B.P. At baseline, for systolic B.P. in males, 23 and 0 per cent and for diastolic BP 22 and 1 per cent respectively were pre-hypertensive and hypertensive. Under stress, 33 and 2 per cent of systolic, and 28 and 4 per cent of diastolic readings respectively were in the same groups. In females however, 22 and 0 per cent of the baseline
Disability among the geriatric population in a semi-urban area of Karnataka

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Background & objectives: The increasing life expectancy and improving health services in India has resulted in a greater contribution of the geriatric population to demographic figures and rising numbers of disabled elderly in the community. This study was done to determine the prevalence and socio-demographic correlates of disability and to assess the felt and received needs of the disabled among the geriatric population in a semi-urban coastal location near Mangalore.

Methods: 120 subjects aged 60 yr and above were interviewed during house-to-house visits using a pre-tested questionnaire, after obtaining informed consent. Visual, hearing and locomotor disability was assessed using an instrument developed by the WHO. Mental disability was assessed using Indian Disability Evaluation and Assessment Scale. Data analysis was done using SPSS Version 14 and P<0.05 was considered statistically significant.

Results: Overall prevalence of disability was found to be 65.8 per cent. Common disabilities were related to speech, locomotion and hearing. There was statistically significant increase in the prevalence of disability with increasing age. Over 40 per cent of the study population had co-morbid conditions like hypertension and joint pains. There was a wide disparity between the felt needs and the received needs of the disabled elderly.

Interpretation & conclusions: The prevalence of disability was found to be much higher than national statistics of 25.6 per cent (Census 2001). This, along with other findings, brings to light the need to improve the health care services provided to fulfil specific needs of the geriatric population. More research is needed to find out occupational and other possible determinants of disability. Efforts are needed towards community based rehabilitation of the elderly.

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Effects of Panchagavya ghita on paracetamol induced hepatotoxicity in rats

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Background & objectives: Sushut Samhita mentions the use of Panchagavya ghita (PG) in the treatment of mania, epilepsy, fever and hepatitis. In an effort to correlate the ancient knowledge with the modern concepts of research in the pharmacology, we decided to study the effects of PG on paracetamol-induced hepatotoxicity in rats.

Methods: The animals were divided into four groups of 6 rats each. First two groups received PG in the dose of 1 (PG1), 2 (PG2), ml per kg of body weight for thirty days. Third group received normal saline 2 ml per kg orally. The fourth group acted as a standard control and received LIV 52 2 ml/kg body weight daily. Hepatotoxicity was induced with paracetamol 1gm/kg body weight orally once. Blood samples were collected and analyzed for liver enzymes and bilirubin. Liver was separated and estimated for various anti-oxidants (AO) in the liver tissue.

Results: PG prevented the increase in the liver enzymes like AST, ALT and alkaline phosphatase induced by the hepatotoxicity of the paracetamol. There was no significant effect on bilirubin levels. It also has AO activity in vivo as shown by the changes in the Catalase, MDA, and GSH levels.

Interpretation & conclusions: Hepatoprotective action of PG can be due to AO activity of PG, PG is a mixture of cow milk, cow ghee, cow urine, cow dung, and curd milk. Cow milk contains minerals and vitamins. Cow urine contains minerals, urea, vitamins, enzymes, and a large amount of free volatile acids. Of these, which component is responsible for AO action is difficult to comment.

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