writing should be improved. This will prepare a good background for potentially good publication. Hence training of PG guides is critical to improve the quality research and resulting high quality publications.

- Publications should be encouraged but not made compulsory before appearing for postgraduate examination.
- Role of Alumni in improving research can also be explored at the institutional level.

Conflicts of interest

All authors have none to declare.

Copyright © 2013, INDIACLEN. Publishing Services by Reed Elsevier India Pvt Ltd. All rights reserved.

<http://dx.doi.org/10.1016/j.cegh.2013.07.001>

Annual India CLEN Conference, 2nd and 3rd March 2013

King's George Medical University, Lucknow, Uttar Pradesh, India

The study of prevalence and associated risk factors for hypertension among adult (> 20 years) rural population of RTHC, Kalyanpur

Sunil Kumar, C. Roy, V. Roy
DMCH, Darbhanga, India

Background: Cardiovascular disease especially hypertension is a major public health problem in both developed and developing countries and can lead to heart attacks, strokes and cardiac and renal failure. Common risk factors for hypertension include age, sex, genetic factor, ethnicity, lifestyle modification, stress and strain, socio-economic status. Most of projected rise in hypertension is preventable.

Objective: (1) To study the prevalence of hypertension among rural adult (>20 years) population of RTHC, Kalyanpur, (2) To know the associated risk factors of hypertension among rural adult population.

Setting/Method:

Study Area: Field practice area of Darbhanga Medical College i.e. Rural Training Health Centre, Kalyanpur.

Study Design: This is a community based cross-sectional study.

Study Subjects: Both male and female adults aged 20 years and above.

Study Period: The study was conducted from April 2011 to April 2012.

The author underlined is the Presenting author.

Acknowledgments

This conference was partially co-sponsored by the Indian Council for Medical Research and the Medical Council of India. Prof. D.K. Gupta, Vice Chancellor, KGMU provided access to institutional infrastructure for the conference.

REFERENCES

1. Chalmers I, Glasziou P. Viewpoint. *Lancet*. 2009;374:86–89.
2. Editorial What is the purpose of medical research?. *Lancet*. 2013;381(9864):347.

Sample Size: The sample size required for the study was 1,160. Allowing 5% sample loss, the total sample size was calculated to be 1,210.

Results: Out of 1210 participants 217 (17.9%) were found hypertensive. Of the total 217 subjects higher prevalence rate was observed in females (21.08%) as compared with males (15.27%). Vegetarian had a lesser prevalence of hypertension than those with non-vegetarian ($p>0.5$). Alcoholics had a higher prevalence of hypertension than non alcoholics and was found to be highly significant ($p<0.001$). Proportion of Diabetics who were hypertensive was 33.83%. Multiple logistic regression analysis of risk factor of hypertension showed alcohol, smoking, tobacco, diabetes, tobacco chewing and BMI to be significantly associated with risk factor of developing hypertension.

Conclusion: Prevalence rate of 17.9% found in this study is consistent with overall increasing trend of hypertension both in India (Rural and Urban) and worldwide. This could be attributed to increase in aging population, changing life style and change in diagnostic criteria over the years.

Measuring the burden of tuberculosis in India: What data are needed?

Krycia Cowling, R. Dandona, L. Dandona
Public Health Foundation of India, New Delhi, India

Background: Despite having the greatest tuberculosis burden of any country, estimates of tuberculosis incidence,

prevalence, and mortality in India rely on data with substantial uncertainty and lack local precision.

Objective: To assess data available for measuring the burden of tuberculosis in India, identify gaps, and make recommendations to improve estimates.

Design: Literature review.

Method: We reviewed the published literature on tuberculosis burden estimation in India. We applied the World Health Organization (WHO)'s "onion" model frame work to identify data sources for assessing under-reporting at each level of the case notification system. We also explored the feasibility of conducting an inventory study in India using WHO's guidelines.

Results: In published estimates, confidence intervals for the national TB prevalence in 2010 range widely from 2 to 7 million cases. Case notifications are among the most reliable data, but have wide spread under-reporting, particularly for the significant proportion of patients treated by non-RNTCP-affiliated providers. An inventory study is feasible in India to assess the level of under-reporting and under-diagnosis of tuberculosis cases and the proportion of patients treated by non-RNTCP-affiliated providers. Furthermore, a national tuberculosis prevalence survey should be considered.

Conclusion: Our recommendation of an inventory study is timely given the current scale-up of web-based tuberculosis case reporting and unique patient identification numbers, which greatly facilitate this type of study. Given that the last national tuberculosis prevalence survey was done sixty years ago, a new national survey would address important data gaps for more informed planning of tuberculosis control efforts in India.

Incidence of hepatotoxicity in Indian patients receiving standard multidrug anti-tubercular therapy without risk factors

Vivek V. Bhosale, A. Tyagi, M. Shrivastava, S.P.S. Gaur
CSIR – Central Drug Research Institute, Lucknow, India

Background: Anti-tuberculosis drug-induced hepatotoxicity (ATDH) causes substantial morbidity and mortality and diminishes treatment effectiveness. The incidence of ATDH during standard multidrug TB treatment has been variably reported as between 2% and 28%. This rate depends on the investigators' definition of hepato-toxicity, population studied, risk factors and regional characteristics.

Objective: To find out the incidence of hepato-toxicity without risk factors in patients receiving standard anti-tubercular multidrug therapy.

Design: This was prospective, two centered, clinical study.

Setting: This current study is conducted at outpatient department of pulmonary medicine at KEM Mumbai and King George Medical College, Lucknow.

Method: Total 616 patients were screened and 182 patients were enrolled in the study. Patients were excluded if they had history of jaundice in the past 6 months or received any drug from the non allopathic systems of medicine in the past 3 months. Patients with severe hepatic, renal or cardiac

disease or history of consuming alcohol daily were also excluded. Pregnant and lactating women were not allowed in the study. The development of hepato-toxicity was assessed based on clinical and biochemical examination. Drug induced injury was assessed according to the Councils for International Organizations of Medical Sciences (CIOMS) based criteria.

Results & Conclusion: Total 12 patients developed drug induced liver injury. The incidence of anti-tubercular drug induced hepato-toxicity was found to be 6.6% in this study.

Prevalence and outcome of gestational diabetes mellitus and impaired glucose tolerance amongst rural population in a block of Assam

Tulika Goswami Mahanta, A. Deuri, P. Bordoloi, B.N. Mahanta, R. Rasaily, J. Mahanta
Assam Medical College, Dibrugarh, Assam, India

Background: Glucose intolerance during pregnancy predisposes offspring with increased risk of developing glucose intolerance in the future.

Objective: To assess the prevalence of GDM and IGT and to compare pregnancy outcomes of cases and controls.

Design: A prospective cohort study with a nested case control design.

Setting: Rural block of Assam.

Method: From the cohort, 193 cases and 579 matched controls were taken with age and gestational week matching.

Results: From 930 enrolled; 858 (92.3%) followed in second trimester, 777 (83.5%) in third trimester with outcome measurements. Mean age was 23 years. Incidence of GDM was 3%; while IGT was 23.2%. Family history of DM was more in cases (2.1%) than controls (0.5%)(OR 4.06, 95% CI 0.90 – 18.32). Obesity was more amongst the cases (OR 2.40, 95% CI 1.21 – 4.73, $p=0.01$). Amongst cases 20.2% developed gestational hypertension as against 26.4% of controls (OR: 0.70, 95% CI 0.474 – 1.04). A significantly higher number of cases delivered by LSCS ($p=0.009$). Preterm delivery occurred in 30.9% of cases and 29.7% of controls. A higher number of macro-somic babies were delivered by the cases (OR 9.74, 95% CI 2.85 – 33.30). Baby care in NICU for >2 days was required for cases (3.1%) as against controls (0.9%) (OR 0.27, 95% CI 0.08 – 0.91).

Conclusion: The populations living in rural areas are mostly at low risk to develop GDM. There is increased maternal and foetal morbidity in terms of caesarean section rate, admission to a NICU among women who had GDM during pregnancy.

Serum adip-nectin levels in diabetic retinopathy

Riddhi Jaiswal, S. Saxena, S.M. Natu, M.M. Goel
King George's Medical University, Lucknow, UP, India

Background: Diabetic retinopathy (DR), as a complication of diabetes mellitus, is a major cause of blindness in India. Progression from Non-Proliferative diabetic retinopathy

(NPDR) to Proliferative (PDR) is associated with variations in levels of several cytokines, one of which is ADIPONECTIN. Adiponectin modulates glucose regulation and fatty acid catabolism. It is secreted exclusively from adipocytes and normal serum level ranges from 5-10 microgram/ ml. Studies have shown a decrease in adiponectin levels in diabetics as compared to non-diabetics.

Objective: The association of serum adiponectin with the severity of diabetic retinopathy may lead to an early detection and prevention of deterioration of the condition. The aim of this study is to find out the association between serum adiponectin levels with type 2 diabetes mellitus and to investigate whether adiponectin proves to be putative biomarker in screening for progression of severity of diabetic retinopathy.

Design: Case control study.

Sample size – 63 subjects in each of the two primary groups: diabetics and non-diabetics. STATA 10.1 software has been used to calculate the sample size to test the hypothesis that the mean adiponectin level in diabetic subjects is 0.5 units lower than that in control subjects.

Method: 10 ml fasting serum samples of cases and controls (of similar age, sex and body mass index) were collected under aseptic conditions and the sera separated. A part of serum samples was used for biochemical tests including blood sugar, urea, creatinine, and lipid profile and the remaining stored at minus 80°C for Adiponectin ELISA (as per manufacturer's instructions; Human Adiponectin, Orgenium Laboratories, Finland) which was later carried out in duplicate.

Results: Statistically significant differences between the groups were thus studied using Kruskal Walli's/ Mann Whitney test which revealed: (1) Controls have the highest adiponectin levels which are statistically different from that of the diabetic cases, (2) There is statistically significant difference in adiponectin levels between diabetic without retinopathy and the PDR (higher grade of DR) subgroups.

Conclusions: (1) Diabetics show a lower serum adiponectin level than non-diabetics, (2) Control group adiponectin levels are not statistically different from the PDR subgroup implying a rise in adiponectin level with the progression of retinopathy from non-proliferative to proliferative.

Obstructive sleep apnea syndrome and its impact on Quality of Life (QOL)

Abhishek Dubey, S. Kant, S. Tiwari, S.P. Agarwal, A. Mehadi, S. Agarwal

Department of Pulmonary Medicine, Physiology, ENT and Biochemistry, King George's Medical University, Lucknow, UP, & Department of Medical Genetics, SGPGIMS, UP, India

Background: The effects of Obstructive sleep apnea syndrome (OSAS) on the quality of life (QOL) have been documented in the literature. Excessive sleepiness and other associated symptoms may negatively affect ability to learn, employment, and interpersonal relations, and directly degrade QOL.

Objective: The objective of the present study was to evaluate the impact of OSAS on QOL.

Design: Observational, Hospital based study.

Setting: Study was carried out in 190 index subjects in poly somnography unit of Department of Pulmonary Medicine.

Method: Over night sleep study was carried out in All subjects in poly-somnography unit of Department of Pulmonary Medicine, KGMU, UP and Hindi version of HRQOL tool SF-36 was used to evaluate Physical Functioning (PF), Role Physical (RP), Bodily Pain (BP), General Health (GH), Vitality (VT), Social Functioning (SF), Role Emotional (RE), Mental Health (MH), Physical Component Summary (PCS) and Mental Component Summary (MCS) in these subjects.

Results: PCS was found to be associated with Aging, BMI, Neck Circumference, Blood Pressure, Hypopnea and number of total De-saturation fall events below 5% while MCS was found to be associated with BMI and Hypopnea events in these subjects.

Conclusion: Physical Component Summary (PCS) and Mental Component Summary (MCS) are related with sleep related events in these subjects thus improvement in these parameters through various treatment modalities can be used to improve QOL in this population.

Development of a psychosocial stress for antenatal women

Nirmala C

CERTC, Trivandrum, India

Background: In spite of 100% antenatal care and institutional deliveries in Kerala, preterm birth, low birth weight and other adverse pregnancy outcomes remains a major problem. Because of the social and health transition in Kerala, Psychosocial stress in pregnancy is postulated as potential risk factor for the adverse pregnancy outcomes. Measuring psychosocial stress in pregnancy is a challenge due to lack of a culturally appropriate & locally relevant scale.

Objective: To develop a culturally appropriate and locally relevant scale for measuring psychosocial stress among antenatal women.

Design: Cross-sectional study.

Setting: Teaching hospital, secondary level maternity government hospital and major maternal hospital in private sector.

Method: Sample size 190. For item generation, initial construct developed by literature review. In-depth interviews conducted among antenatal women, experts, gynecologists and psychiatrists. And focus group discussions continued until no new stressors were identified (sample to redundancy) 70 items generated & 45 items evolved. By rank ordering, items reduced to 29. Pilot testing and item reduction to 10 point psychosocial stress scale developed. Factor analysis for construct validity. Reliability assessment done. Stressors identified were pregnancy related, hospital/provider related, work related and spouse related.

Results: The final 10 item Psychosocial stress assessment scale for antenatal women had an internal consistency coefficient (Cronbachs alpha) 0.733, which is equal to acceptable level of 0.7. Test-retest reliability 0.98(95% CI 0.96-0.99) inter rater reliability 0.98 (95% CI -0.96-0.99).

Conclusions: 10 item tool is a simple, reliable, valid easy to administer tool to assess psychosocial stress in pregnancy.

Determinants of stress among final MBBS students of Government Medical Colleges in Kerala – A case control study

Sathi Devi.V.K, R. Pisharody

Govt. Medical College, Thrissur, and Govt. Medical College, Thiruvananthapuram, India

Background: Research observations suggest an increase in stress during the course of medical education. For an outcome like stress with multiple causes, a case control study to identify the risk factors is essential. This knowledge will help in executing appropriate intervention strategies to reduce the burden. So there is a need to identify stressors in order to intervene effectively.

Objective: To determine the risk factors of stress among final MBBS students of Government Medical Colleges in Kerala.

Design: Case Control Study - unmatched.

Setting: Government Medical Colleges in Kerala (3- Thiruvananthapuram, Thrissur & Calicut).

Method: Study Population is final MBBS students of Govt. Medical Colleges in Kerala; Study Period is 2011- 2013; Sample Size is 186 Cases & 186 Controls for 1:1 ratio of cases & controls, 95% confidence limits, 80% power with 20% prevalence of stressors in the population for an expected Odds Ratio 2. The sample is selected proportionately from the 3 settings. There are 200 + 200 + 150 final MBBS students in these 3 colleges. So proportionately 68 + 68 + 50 cases & controls were selected randomly. Selection Definition of Cases & Controls – Case ascertainment was done using Perceived Stress Scale scores. Students with high PSS score above 20 were ascertained to Case group. Students with PSS score below 20 were selected as Controls.

Results and Conclusions: Will be presented in the conference.

Research protocol for standardization and clinical evaluation of siddha formulations for urolithiasis

K. Rajalakshmi, M. Logamanian, D. Shantharam

Department of Siddha, The TN Dr. MGR Medical University, Chennai, India

Background: Urolithiasis is still a major challenge. The prevalence and relapse is quite high. Many herbal formulations have the potency to dissolve & disintegrate or expel the stones and prevents relapse. In this thiruvananthapuram area *sindhu vallathy mezhu* and *Kalladaippu kudineer* are the two Siddha classical herbo-mineral formulations chosen for clinical evaluation.

Objectives: Primary: To assess the clinical efficacy of the study drugs.

Secondary: (1) Drug standardization (2) To observe the adverse effects if any.

Methods:

Clinical study protocol: Pilot study -10 patients, Phase –I study -20 normal subjects. Phase –II study – 50 urolithiasis patients.

Study design: Open, non-randomized and non-comparative Phase –I and Phase-II clinical study.

Sampling Method: Purposive sampling.

Sample size calculation: Sample size has been calculated based on the global and Indian prevalence. Based on the global prevalence – N=77 (Prevalence 15%, precision 8% and CI 95%). Considering with Prevalence in India – N=71 (Prevalence 10%, precision 7% and CI 95%). 85 subjects will be included for this study.

Study area and Study population: Patients who are attending the OPD of National Institute of Siddha, Chennai -47 are included.

Study Period: 45 days.

Inclusion criteria: Age > 18 years, both gender, diagnosed ultra-son graphically / radio-graphically with visible calculi of >5 mm size and with or without clinical symptoms.

Exclusion criteria: Patients with severe pain and not responding to pain killers, Bilateral Calculi obstruction requiring immediate surgery, Existing renal failure, Pregnant and lactating women, Age < 18 years, known hepatic and cardiac diseases, Subjects those who are not willing to give informed consent, Women those who are planning for pregnancy.

Ethical clearance: Ethical clearance is obtained from IEC of The Tamil Nadu Dr. M. G.R. Medical University.

Informed consent: Obtained from the participants.

Description of Intervention

Dosage/Dosage regimen/Route of administration/Frequency of administration.

Sindhu vallathy mezhu – 500 mg capsules twice daily, *Kalladaippu kudineer* -130 ml decoction twice daily-per oral for 45 days.

Data collection procedures and data analysis: Data are collected with the semi-structured questionnaire and from the investigation reports. Data will be entered in Excel and imported to SPSS. It will be coded and cleaned. Statistical analysis will be done by using SPSS.

Expected Outcomes:

Primary: Expulsion of stones, Reduction in the number and size of the stones. Prevention of stone forming factors with in the study period.

Secondary: Relief from symptom score, reduction in pain score, Changes in other investigations

Proportion of oesophageal cancer amongst persons with (previous) head and neck cancer attending a tertiary care hospital of upper Assam

Bhupendra Narayan Mahanta, T.G. Mahanta, B.D. Goswami, A. Sarma, R. Rosaily, J.C. Mahanta

Assam Medical College, Dibrugarh, India

Background: Oesophageal cancer occurs at very high frequencies in Assam. Heavy consumption of alcohol and tobacco is responsible for synchronous and meta-chronous primary malignancies in the upper aero-digestive tract. When a second oesophageal malignancy develops in a patient with previous head and neck cancer (HNC), the prognosis is determined by the oesophageal cancer, and unfortunately it is poor.

Objectives: To determine the proportion of Oesophageal cancer in patients with (previous) head and neck cancer attending AMCH.

Design: Hospital based cross sectional study.

Methodology: All consented consecutive patients with (previous) head and neck cancer were screened for oesophageal cancer by video-oesophagoscopy with chromo endoscopy and biopsy specimens was taken from suspected lesion during chromo-endoscopy and Low- or high-grade squamous cell dysplasia was looked for histologically. Presences of dysplasias are diagnosed synchronously with the head and neck cancers. Oesophageal squamous cell carcinoma and any other carcinoma are also looked into in addition.

Results: Total 55 cases of head and neck cancer were enrolled and subjected to Chromo-endoscopy of oesophagus. 55 age and sex matched subjects without head and neck cancer are also screened with Chromo-endoscopic study as a comparative group. Majority were men (47/ 55). Chromo- unstained lesions was found in 19 out of 55(34.54%). Oesophageal squamous Dysplasia confirmed in 7 (12.73%) biopsy specimens.

Conclusion: Oesophageal dysplasia and other changes are common in patients with HNC attending in upper Assam. Chromo-endoscopic screening of oesophagus in persons with HNC is a helpful tool for excluding early changes and is cost effective.

Role of CYP2E1 genetic polymorphism in development of oral leukoplakia among tobacco users

Shalini Gupta, D. Kumar, S. Srivastava, B. Roy, R.R. Paul

Department of Oral Pathology, King George's Medical University, Lucknow. U.P & Department of Oral Pathology, R. Ahmed Dental College & Hospital, University of Kolkata, India

Genetic alterations in the genes expressing drug metabolizing enzymes can make an individual susceptible to leukoplakia. The Oral leukoplakia, a common premalignant lesion among smokers, is defined as a chronic white mucosal which cannot be characterized clinically or pathologically as any other disease and not associated with any physical or chemical causative agent except the use of tobacco. This study detects the polymorphism at CYP2E1 genes in a section of tobacco users and determines the susceptibility to oral leukoplakia. In this case-control study one hundred and two leukoplakia patients were genotyped to detect the CYP2E1 polymorphism. Ninety six healthy controls were also

included. Genotypes were determined using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) approach. The frequencies variants genotype at polymorphic sites *DraI* homozygous and heterozygous (CC + CD) was not significantly deferent (odds ratio adjusted OR= 1.4, 95% confidence interval, CI=0.7-2.5). But the deference in the frequency (CC + CD) genotypes was significant when light smokers (<23 Pack-Year, PY) of leukoplakia patients and control (OR=3; 95 (CI) = 1.0 -9.0). The frequency of heterozygous and homozygous (c1/c2+c2/c2) genotypes at *PstI* and *RsaI* of CYP2E1 gene were very low and similar in patient and control population (3% and 1% respectively). No significantly deference in distribution of (c1/c2+c2/c2) was observed (odds ratio, OR= 2.8, 95% CI=0.3-71.0) in leukoplakia patients and control. The result indicates that the rare C allele at the *DraI* polymorphic site of gene may enhance susceptibility to leukoplakia among tobacco users in the population. Finally the study with large numbers of samples will provide better understanding of the risk of the leukoplakia in relation to CYP2E1 polymorphism.

Evidence on efficacy of two routes of vaccine administration for post exposure prophylaxis in rabies prevention – A meta analysis

Sara Varghese, R.M. Pillai, M. Nair, T. Mathew, R. Jose
R-CERT, Trivandrum, India

Introduction: India has the highest incidence of rabies related deaths-20,000 per year. An estimated 25,000 persons die of hydrophobia every year in this country and approximately 500,000 undergo post-exposure prophylaxis. Kerala is now in a transitional stage of providing the vaccine from the standard practice of Intramuscular to the newer technique of providing it through the intra-dermal route. Though there are many studies proving the efficacy and effectiveness of modern cell culture vaccine, the variation in effect size, sample size and setting has led me to plan a Meta analysis to obtain a pooled estimate with maximum precision.

Objective: To do a Meta analysis of clinical trials done on efficacy of Intramuscular versus Intra-dermal route of administration of Anti-rabies Cell Culture vaccines.

Method – Meta Analysis: The quantitative analysis of selected studies was done using the software Rev Man of Cochrane collaboration. A total of 133 studies were identified of which ten studies were finally included after applying the inclusion criteria. As there was wide variation in the outcome measure, the log values of these were taken and entered in the table provided in Rev Man and the result was computed as the Forest Plot.

Results: The Forest Plot shows the summary effect size of individual studies and also pooled effect estimate of all ten studies included. Heterogeneity between the studies was also tested during the process.

Conclusion: This Meta analysis shows that there is no difference in the immune-genecity of Cell Culture vaccines when administered through either the intra-muscular or the intra-dermal route.

Low parental education is associated with Discharge against medical advice in female pediatric patients from a tertiary care center in Lucknow

S. Awasthi, Nitin Pandey

Department of Pediatrics, King George's Medical University, Lucknow, UP, India

Background: Hospitalized patients who leave before completing diagnostic and therapeutic procedures are referred as discharge against medical advice (DAMA). DAMA is associated with adverse patient outcome as well as increased health care costs.

Objective: To determine reasons and socioeconomic factors associated with DAMA, stratified by gender, in pediatric patients.

Design and setting: Prospective study in Department of Pediatrics, KGMU, Lucknow, after obtaining institutional ethical clearance.

Method: Included were patients aged 1 month to 12 years, who were DAMA and whose caregivers consented for interview. Preformed pilot tested questionnaire was administered by trained resident doctor on duty. Clinical and socioeconomic characteristics of the patient and reasons for DAMA were recorded using structured and semi-structured questions. Reasons were classified into three subcategory- financial, terminal illness and family commitments.

Results: From August 2011 to November 2012 of 4394 admissions [66.6% males (n=2942)], 5.6% cases (n=245) were DAMA of which 79 patients (64.5% males, 91.1% from rural area) were recruited. Decision for DAMA was taken by father in 73.4% (n=58) cases. Reasons for DAMA were financial in 39.2% (n= 31), family commitments in 35.4% (n=28) and terminal illness in 25.3% (n=20) cases. For male child terminal illness was statistically significantly associated with DAMA (OR= 4.16; 95% CI, 1.10-15.77, p= 0.02). Risk factors for taking female patient DAMA were parental education below fifth standard (Maternal- OR= 5.83; 95% CI, 1.57-21.86, p= 0.01 & Paternal – OR= 2.78; 95% CI, 0.97-8.02, p= 0.05), and joint family structure (OR= 4.78; 95% CI, 1.57-14.54, p= 0.01).

Conclusion: Since female patients, of parents with low educational status are at risk for DAMA hence parental counseling for completion of treatment should begin early in hospitalization.

Etiological profile of unconjugated neonatal hyperbilirubinemia with special reference to Rhesus (Rh) D, C, E incompatibility

Tahazzul Mohammad, S. N. Singh, S. Kumar, M. Kumar, C. Tulika, A. Kumar

Department of Pediatrics, Transfusion Medicine & Pathology, King George's Medical University, Lucknow, UP, India

Background: Cause of neonatal hyper bilirubinemia may remain obscured in many. Limited data is available on Rh incompatibility, especially Rh-C & Rh-E in causation of neonatal hyperbilirubinemia.

Objectives: To evaluate cause of neonatal hyperbilirubinemia, its severity with special reference to Rh-D, C, E in-compatibility.

Design: Prospective observational study.

Settings: Done over one year at tertiary care neonatal unit.

Method: Subjects were neonates with un-conjugated hyperbilirubinemia, requiring phototherapy &/or exchange transfusion as per AAP guidelines 2004 and Cashore et al 1999 (N=200). Neonates investigated for blood group status (ABO & Rh-D, C, and E), G-6PD deficiency, serum bilirubin, complete blood count, reticulocyte count, peripheral blood smear, blood culture, and coomb's test.

Results: Of 200 hyperbilirubinemia cases investigated, ABO incompatibility was the commonest cause 64(32%), followed by sepsis 42(21%), Rh-D incompatibility 28(14%), Rh-C 28(14%), Rh-E incompatibility 6(3%), G-6-PD deficiency 1(0.5%), while in 31(15.5%) no cause could be ascertained. Evidence of severe hemo-lysis was maximum with Rh-D incompatibility 10(35.7%), followed by Rh-C 5(17.9%). Feature of bilirubin encephalopathy were maximum in Rh-D incompatibility 4(14.3%), followed by ABO 6(9.4%). Exchange transfusion required in 16(57.1%) with Rh-D incompatibility, 16(25%) with ABO, 4(14.3%) with Rh-C incompatibility and 1(2.4%) with G-6-PD deficiency. Mean duration of phototherapy was longest for Rh-D incompatibility (8.25±1.45 days), followed by Rh-C (8.06±2.29), ABO (7.17±1.76), Rh-E (7.17±2.04) and sepsis (7.02±1.56 days).

Conclusion: The most common cause of neonatal hyper bilirubinemia was major blood group in-compatibility (ABO and Rh-D in-compatibility). Rh-C and Rh-E incompatibility was observed in 1/4th of neonates. This may have implication in Rh-C and Rh-E disease prophylaxis in neonates.

Keywords: Neonatal, Un-conjugated hyper bilirubinemia, Rhesus (Rh) D, Rh-C, Rh-E in-compatibility.

Serial peripheral blood and bone marrow changes in childhood acute lymphoblastic leukemia patients on therapy

Rashmi Kushwaha, A. Kumar, A. Kumar, K. Aggrawal, N. Nigam, U.S. Singh

Department of Pathology and Pediatrics, King George's Medical University, Lucknow, UP, India

Background: ALL is most curable of all pediatric malignancies. In this study sequential peripheral blood and bone marrow changes in patients of ALL on chemotherapy were studied. Changes in cellularity and blast percentage as compared to the pre-therapy marrow indicate variable response to chemotherapy.

Aim: To assess the therapy related serial bone marrow changes in patients of ALL.

Study design and setting: Prospective study, carried out in Lymphoma- Leukemia Lab, Department of Pathology, K.G.M.U from 2011 march to 2012 march. 60 cases were studied.

Materials and methods: History, complete hemogram, bone marrow examination at pre-therapy (D-0), intra-therapy (D-14) and end of induction chemotherapy (D-28/42) levels was done. Peripheral blood smears were evaluated at regular interval to assess clearance of blast cells.

Results: Incidence of ALL-L1 (46.7%) and ALL-L2 (53.3%) was equal. ALL-L2 patients had poor survival.

D-0 bone marrow was hyper-cellular with flooding of marrow by leukemic cells. High levels of tumor load at D'0' were associated with poor survival. 14th day of Induction phase showed significant decrease in hemoglobin and TLC as compared to D '0' parameters. D28 showed marrow regeneration.

Cellularity, Blast%, Leukemic Index showed significant drop from day '0' to day 14 due to myelo-suppression where as regeneration reflected by increased cellularity as per day 28 marrow.

Lymphocytosis (> 20%) at end of induction chemotherapy had better survival and longer remission.

Risk of mortality was directly proportional to blast clearance and was a major independent prognostic factor for achievement of complete remission.

Conclusion: A bone marrow examination at the end of induction chemotherapy provides information whether patient has achieved remission with regeneration of cells or still has residual leukemia. If the patient is in remission, maintenance treatment is started and if not more intensive chemotherapy or bone marrow transplantation may be embarked upon.

An observational study to evaluate the outcome of admitted children of severe acute malnutrition in nutrition rehabilitation center Darbhanga (Bihar)

Abhay Kumar, S. Kumari, V. Roy, S.D. Singh, C. Roy
DMCH Darbhanga, India

Background: According to NFHS-3 50%, 33% & 55% children in Bihar are Stunted, Wasted & Underweight respectively. Nutrition rehabilitation centers (NRCs) are working in 34 districts of Bihar state to control severe acute malnutrition (SAM) of children aged 6 months to 5 years and to decrease its prevalence. NRC Darbhanga is one of those, where more than 750 SAM children have been managed till date.

Objective: To evaluate the outcome of admitted cases of SAM children in NRC.

Methods: Study Design: Observational study. Study Subjects: Admitted SAM children at NRC Darbhanga. Sample Size: 80 Duration: From March 2012 to September 2012. Data collection: From the NRC and mothers. Mothers of the children were interviewed on health issues and feeding practices at NRCs using pretested semi-structured interview schedule. Data analysis: Using Med-calc and Microsoft-Excel.

Results: The study consisted of 35 boys and 41 girls following a dropout rate of 5%. Most of them were from rural area and lower socioeconomic status. Mean difference of mid upper arm circumference (MUAC) at admission and discharge was 1.9618 and was statistically significant ($t=37.57$, $P<0.0001$). The average weight gain during the stay at the

center was 9.9105 ± 1.3872 g/kg/day. The number of SAM children decreased from 76 to 34 following the stay at NRC. Dropout rates during the 4 follow-up visits, conducted 15 days apart after discharge for the study group were 7.9%, 11.8%, 17.1%, and 30.26%. The mothers of the children had inadequate knowledge on health issues and feeding practices during admission. The improvement was not statistically significant at the time of discharge.

Conclusion: NRC has great contribution in reducing the prevalence of SAM children but improvement in the knowledge and practices of the mothers are not adequate. IEC and BCC activities must be conducted for better results.

CRHR1 gene SNPs, rs242939 (A > G) and rs242941 (G > T) association with response to systemic corticosteroids in Northern Indian asthmatic children during acute exacerbation: A hospital-based cross-sectional study

S. Awasthi, Sarika Gupta, S. Agarwal, N. Sharma

Department of Pediatrics, King George's Medical University, Lucknow, UP & Department of Medical Genetics, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, UP, India

Background: Systemic corticosteroid therapy is used primarily to treat asthma exacerbations. There is inter-individual variability in responses to pharmacotherapy which might be due to genetic variability. Corticotrophin releasing hormone receptor 1 (CRHR1) gene is identified as a potential marker for steroid responsiveness. It is hypothesized that a relationship is expected to exist between genetic variation of CRHR1 gene and response to exogenous corticosteroid.

Objective: The present study aimed to find out association of CRHR1 gene SNPs, rs242939 (A>G) and rs242941 (G>T) with response to systemic corticosteroids in Northern Indian asthmatic children during exacerbation.

Design: This was a hospital based cross-sectional study.

Method: Included in the study were 68 asthmatic children aged 1 to 12 years presenting to pediatric emergency with acute exacerbation of asthma. GINA guideline, 2008 was used to classify severity of acute exacerbation of asthma and treatment. As per GINA guidelines, 2008 children who had good response to injectable corticosteroid were classified as "Corticosteroid Responder" (CR). Rest of the children who had incomplete or poor response were classified as "Corticosteroid Non Responder" (CNR).

Results: Among 68 hospitalized children, 45 (66.17%) children were CR whereas 23 (33.83%) children were CNR. On analyzing as dominant model children with one or two copy of mutant allele of SNP rs242941 had statistically significant association with response to systemic corticosteroid as compared to children with no mutant allele (OR=5.00; 95% CI=1.32-19.64; $p=0.013$).

Conclusion: In conclusion we found CRHR1 gene SNP rs242941 to be associated with response to systemic corticosteroid in Northern Indian asthmatic children during acute exacerbation.

Evaluation of indirect sepsis markers in the diagnosis of neonatal sepsis

S.K. Namdeo, S.Kar, Irfana Pharveen, B.C. Das, S.C. Das, A. Tiwari

KIMS CEU, Bhubaneswar, India

Background: In India, neonatal sepsis is responsible for one fourth to nearly half of the neonatal deaths. Neonatal sepsis is defined as a clinical syndrome characterized by signs of generalized bacterial infection and documented by positive blood culture during the first month of life. Though, the gold standard for diagnosing neonatal sepsis is positive blood culture, it requires at least 48-72 hrs for confirmation. Therapy cannot wait this long in a critically sick neonate. So to rationalize therapy in neonatal sepsis, certain indirect early markers of neonatal infection have been identified. Use of this indication along with the clinical judgments has made the approach to the management of neonatal sepsis more logical.

Objective: To find out the Role of Different Indirect Markers in diagnosis of Neonatal Sepsis.

Design: Hospital-based, Cross Sectional Observational Study.

Setting: NICU, KIMS Bhubaneswar from May 2010 to May 2012.

Method: All the newborns admitted to NICU with suspicion of infection were included. All the cases were categorized into three groups. 1st Group (Proven Sepsis) included those with blood culture and other relevant investigation positive. 2nd Group (Probable Sepsis) in which blood culture negative but other relevant investigation positive. 3rd group (No Sepsis)- in which blood culture negative and other relevant investigation also negative. From history and clinical finding 80 cases are suspected as sepsis out of 26 cases labeled as (Group-1), 38 cases as (Group-2) and 16 cases as (Group-3).

Results: It was observed that C Reactive Protein (CRP) had maximum sensitivity and GAC (Gastric Aspirate Cytology) had maximum specificity. Again in two test combination we found CRP+B/N (Band/Total Neutrophil Count) had highest sensitivity where as CRP+GAC had highest specificity in proven sepsis cases.

Conclusion: The accurate diagnosis of Neonatal Sepsis is often difficult as the sign and symptoms are subtle or vague. But early diagnosis and prompt treatment is necessary for reducing neonatal mortality. Combinations of two tests are better than individual test. CRP+B/N (Band/Total Neutrophil Count) are most sensitive where as CRP+GAC are most specific. Three test combinations have no added advantage than two test combination. So if two or more tests are positive then the neonates should be treated for the presumptive diagnosis of neonatal sepsis.

Childhood tuberculosis types and BCG vaccination status – A study in RNTCP centres in Chennai

E. Rajalakshmi, S. Valarmathi, S. Parameswari, D. Shantharam

Department of Epidemiology, TN Dr. MGR Medical University, India

Background: Childhood tuberculosis remains a major health problem in India. India is the highest TB burden country accounting for 1/5 (21%) of the global incidence. Until very recently childhood TB has not been a priority health and has remained essentially a hidden pandemic.

Objectives: To study the types of tuberculosis and BCG vaccination status in RNTCP centers in Chennai.

Design: Cross sectional study.

Setting: 10 Tuberculosis Units (TU) which comprises 42 DOTS centres in Chennai.

Methods: Socio demographic details, body weight, type of tuberculosis, BCG vaccination status and the investigation reports are collected.

Results: Totally 185 cases were reported, 87(47%) male and 98(53%) female. 56(30.3%) < 5 years and 129(69.7%) >5 years. 155(83.8%) were underweight. BCG vaccinated 172(93%) and non- vaccinated 13(7.0%). 55(29.7%) had household contacts, 20(10.8%) had neighborhood contacts. Pulmonary 50 (30.3%) and extra-pulmonary 135 (73%). Among extra-pulmonary Lymphatic 88(47.6%), CNS 15(8.1%), pleural effusion 9(7%), Bone and joint 6(4%), and Abdomen 2(1%). Eye, cutaneous and the subtypes not specified contributed 19 (14%). Chest X-ray evidence present in 97(52.4%). Positive results: Sputum smear in 8(4.3%) and mantoux in 97(52.4%). Chi-square resulted that there is no significant ($p=0.817$) association between BCG vaccination status and the type of TB with a weak positive correlation (0.025).

Conclusion and Recommendations: The distribution of gender is almost equal. The disease is frequently seen in >5 years. Extra-pulmonary was common. BCG vaccinated children also affected by the meningeal and CNS TB. Hence there is a need for proper identification, treatment of infectious cases, new diagnostic tools and novel vaccine trials.

Situational analysis of post graduate research in a tertiary level hospital attached to Medical college and measures that should be taken to improve it

Rohan Nanda

Geetanjali Medical College and Hospital, India

Background: PG research in India is very important to focus on new ideas, new inventions and to test the efficacy of intervention measures for the benefit of community at large, but there are many constraints which are left unaddressed due to which pg students don't find themselves in a comfortable zone to carry out quality research work and just end up with compilation of some data to fulfill the requirement for completing their dissertation to obtain a degree.

Objective: To lay emphasis on the issues related to PG research and publication Design. Issues and problems related to research and publication were being asked from first, second and third year residents of each department (Both Clinical & Non clinical) in RNT Medical College Udaipur.

Setting: Hospital setting.

Method: Questionnaire method.

Results: Not enough facilities and good conditions exist for PG students to accomplish good quality research work due to lack of interest of Government in providing facilities as per MCI norms, shortage of faculty, lack of infrastructure, lack of interdepartmental coordination not enough funds and resources for conducting research.

Conclusion: Current status of Post graduate medical research is not satisfactory. It requires involvement of government in providing basic infrastructure, good laboratory support, adequate funds, motivation for the faculty and interdepartmental coordination.

To determine the Know Do Gap's for inadequate practice of proper hand washing techniques among health professionals in indoor wards of Pediatrics and Medicine in Darbhanga Medical College, Laheriasari

Rishabh Kumar Rana, C. Roy, V. Roy

DMCH Darbhanga, India

Background : Hand washing properly (as per WHO guidelines of 2 min 6 Steps) is the single most cost-effective and practical measure to reduce the incidence of healthcare-associated infection and the spread of antimicrobial resistance across all settings—from advanced health care systems to primary healthcare centers. In spite of being a very simple action, compliance with hand hygiene among health care providers is poor mandating this study.

Objective: To determine the know do gaps for inadequate practice of proper hand washing techniques among health professionals in indoor wards of Pediatrics and Medicine in Darbhanga Medical College, Laheriasari.

Design and Setting: A cross sectional, Hospital based study with health professionals being observed on the spot.

Method: An Unnamed Questionnaire designed in the Department of Community Medicine, Darbhanga Medical College, Laheriasari.

Results: Overload of the number of patients, understaffing and lack of water supply 24*7 were few of the important factors causing the know do gaps.

Conclusion: Multifaceted and dedicated efforts must be undertaken to successfully and effectively implementing the proper hand washing techniques.

An evaluation of workshop on research methods for first-year post-graduates at SMVMCH, Pondicherry

Dongre A.R, Kalaiselvan G, Murugan V, Ghorpade A.G

SMVMCH, Pondicherry, India

Objective: To assess the participants (first year post-graduates) reactions to the workshop on research methods.

Material and Methods:

Settings and design: A quantitative feedback from 32 first-year post-graduate participants of Pre-clinical, Para-clinical and Clinical disciplines admitted to SMVMCH, Pondicherry.

Exposure to short course: Participants were exposed to three days interactive workshop on basics of quantitative research methods. The workshop curriculum was tailored to address their needs to write a thesis protocol. The topics covered were study designs, sample and sampling, searching the literature, designing a questionnaire, errors in measurement, how to cite the references, malpractice in thesis/publications, ethical issues in human/ animal experiments and how to write a research proposal. Sessions were facilitated by a team of trained faculties using structured faculty guides.

Data collection and analysis: At the end of course, a retrospective post-then-pre self-assessment of students' skills acquired was obtained using a six-point Likert scale to know their perceptions of their abilities within the course content before and after participation (Kirkpatrick's level 1). Apart from this, a pre-test and post-test was done.

Results: The post-exposure median scores were significantly higher for perception such as getting sensitized to above mentioned topics than its pre-exposure median scores ($p < 0.05$). The mean pre-test score ($3.7 \pm 2.9SD$) improved significantly to ($18.5 \pm 6.1SD$) in post-test ($p < 0.05$) assessment.

Conclusions: Overall, all the sessions at our sensitization workshop were well received. It is expected to benefit them in developing a needs-based, scientific and ethical research proposals leading ultimately to publication of their thesis work.

Study of knowledge regarding mobile phone hazards among interns and post graduates of Darbhanga Medical College

Vijay Kumar Chaudhary, V. Roy, C. Roy

Department of PSM, DMCH, Darbhanga, India

Background: Taking a major step in the favour of public health, the government has directed the telecom players to follow the new guidelines of radiation, which has come into effect from September 01, 2012. Government has ordered to mobile manufacturing companies to follow the new standard level of Specific Absorption Rate (SAR) which has been set at 1.6 watt per kg. There is concern that with their use sleep disturbance, memory problems, headaches, nausea, and dizziness have been observed.

Objective: To know the current state of knowledge about the use and effect of mobile phone on human health.

Design: Observational study.

Setting: Study was conducted on Interns and Post Graduates of Darbhanga Medical College.

Method: Participants were interviewed through Pre tested semi structured questionnaire.

Results: Only 15% participants having knowledge about SAR, <10% participants use text over voice calls where possible, 25% say that they try to limit length of mobile calls, only 8% participants Hold the cell phone away from the body to the extent possible. 5% prefer to talk via headset or Bluetooth. 33% of participants prefer to keep the phone over ear after the call being received. Metal and water are good conductors of radio waves so only 2% participants avoid using a mobile phone while wearing metal-framed glasses or with wet hair.

Conclusion: IEC & BCC activities regarding Hazards of Mobile use and safety measures are needed first among medical professional and then among the masses.

Health status and personal hygiene among food handlers working at food establishments in an University setting of Bhubaneswar city

S. Kar, S. Priyabadini, D. Pattnaik, A. De, Abhishek Tiwari, R.R. Jha, S.S. Panda, I. Pharveen, S.C. Das

KIMS CEU, Bhubaneswar, India

Background: Bhubaneswar, Odisha has seen appreciable growth in rise of World class Universities offering technical courses. There has been a rise of residential establishments with in-house canteen facility. Ease of stay and availability of food inspires most students to avail such facilities for prolonged periods.

Term *food safety* is increasingly being used in place of *food hygiene* and encompasses a whole range of issues that must be addressed for ensuring the safety of prepared food. High incidence of food borne illnesses has led to an increase in global concern about food safety (Van Tonder, 2007).

Current study is being initiated to assess the health status and hygiene practices of food handlers within KIIT University, an umbrella encompassing 22 schools.

Objective: To asses- (1) Health status of food handlers in study area, (2) Food handlers hygiene behavior, practice and working environment and analyze any association with their morbidity status, (3) Microbiological infections by testing of samples, (4) To impart health education to the food handlers on basics of food safety.

Design: Cross- Sectional study; 3 months.

Setting: Kalinga Institute of Medical Sciences; Departments of Community Medicine & Microbiology Major Canteens of KIIT University.

Method: KIIT's 20 major canteens which cater to more than 100 people at a time with at least 10 people employed for services were included in the study. Food handler was defined as a person who handles food regardless of whether he prepares or serves it and currently employed at a canteen within the University premises. A pretested questionnaire was used to collect the demographic details of the food handlers; information related to personal hygiene, personal habits, history of illness; individual's knowledge about prevention of food borne

illnesses, food hygiene and attitude towards measures for control & prevention of food borne illnesses. An observational checklist was employed to assess environmental hygiene, cleanliness of food, and food handling practices. General, systemic examination, nail scrapings, hemoglobin (Sahli's method) and stool samples for culture was collected of all of the study participants as per WHO guidelines ensuring asepsis.

Results: A total of 170 canteen workers participated in the study; Males were 78%; average age was 33.5 years; 70% were high school educated. Checklist results- 20% canteens had no soap in hand washing area; flies found in 75% canteens; 80% of servers not wearing appropriate clothing and none of the toilets were clean. 24% were addicted to pan, 15% had elevated BP with no prior testing and moderate anemia detected in 16%; 40% males and females respectively. Nail scrapings culture grew *S. aureus* in 32% of samples and stool cultures were positive 23.7% for *E. coli*. None of participants were immunized for Typhoid or Hepatitis A and had poor idea about Food borne illnesses.

Conclusion: Study brings out strongly the need of health education among the food handlers regarding food security and also regular health check-ups for this group. The Knowledge would also help them serve better and safe food for the huge student mass.

Reproductive health survey among unskilled workers in a hospital setting in Bhubaneswar

Sai Chandan Das, B.C. Das, S. Kar, I. Pharveen, A. Tiwari

KIMS CEU, Bhubaneswar, India

Background: Holistically the physical and emotional well-being of adults in the context of reproductive health includes their ability to remain free from early or unwanted pregnancy, unsafe abortion, STDs including HIV/AIDS, and sexual violence and coercion. Several studies have already hinted at poor Reproductive and Sexual Health (RSH) among underserved sections of the society with low levels of education and income and influenced by peer and working environment.

The given study attempts to explore the level of awareness of RSH among both unskilled men and women who are employed a Medical college in Bhubaneswar.

Objective: To asses- (1) Study population for their RSH behavior, (2) Their health seeking behavior, (3) To derive any significant epidemiologic correlates between the behavior and their socio demographic profile.

Design: Cross-sectional study; 3 months.

Setting: Kalinga Institute of Medical Sciences; Department of Community Medicine & Hospital.

Method: The study population comprised of all the workers employed with KIM's medical college for cleaning and maintenance activities. Ethical clearance and permission was sought from the competent higher authorities. The inclusion criteria was-

- Worker should have been employed with KIMS by the requisite supervisor since at least 3 years
- Engaged in any unskilled labor within the college premises
- 18–49 yrs of age (select the most productive age group)
- Willing to participate in the study.

Exclusion criteria was: not willing to participate
Chronically ill with systemic involvement

Predesigned semi structured questionnaire was used to elicit information on general socioeconomic profile, addiction, awareness regarding reproductive sexual health along with awareness on HIV/AIDS and also their health seeking behavior. The opportunity was used to impart them health education and refer appropriately. Anonymity of the respondent was assured.

The data was compiled and analyzed using SPSS software for any statistical significance.

Results: A total of 168 workers were recruited in the survey, with 68% females; 68% were married; 52% within 31–54 years; 56% had substance abuse of which 44% used gutka; 32% felt they were not reproductively healthy out of which only 58% sought medical help in spite of being working in the medical college out of which only 20% went to indigenous college. 24% of those who sought help were non compliant with therapy. Spouses (52%) were key confidantes. Both among females (48%) and males (68%) complained of burning micturition. 18% reported having never heard of HIV/AIDS and benefits of condoms against the disease were unknown to nearly 47%. Unmet need of contraception was nearly 43%. Education of self and spouse was seen to have a strong association with the RSH.

Conclusion: Reproductive and Sexual Health is an identified taboo subject yet neglected in all sections of the society. The study shows dismal levels of awareness and health seeking behavior even in a cohort that works in close proximity with health providers. This hints that other sections might be even worse affected and in need of dire intervention. Counseling and screening of such workforce at regular intervals would be a good solution.

Prevalence of hypertension among private school teachers in Chennai – A cross sectional study

J. Carl Lewis, S. Valarmathi, J. S. Sundar, S. Parameswari S, D. Shantharam

Department of Epidemiology, The Tamilnadu Dr. MGR Medical University, India

Background: Hypertension is reported to be the 4th & 7th contributor to premature death in developed and in developing countries respectively. Recent reports indicate nearly 1 billion adults had hypertension in 2000, it is predicted to increase to 1.56 billion by 2025. Hypertension is considered as an important independent predictor of cardiovascular disease, cerebro-vascular accidents and death.

Objectives: To estimate the prevalence of hypertension and find the associated risk factors among BT (Bachelor of Teaching) and PG (Post Graduate)-assistant teachers.

Design: Cross Sectional Study.

Setting: Private School from Educational Zones of Chennai.

Methods: A sample of 179 teachers participated in the survey. After obtaining informed consent socio-demographic details, food habits, physical-activity, anthropometric measurements and family history were collected. Blood Pressure was measured at 0, 5 & 30 minutes, using digital apparatus and average of three readings was taken as BP of the Individual.

Results: Among 179 teachers males (18%) and females (82%). The prevalence of hypertension: overall-12.8%, BT-assistant-9.3%, PG-assistant-17%. Chi-square-test resulted that there was a significant ($p < 0.05$) association between hypertension and Age, BMI, Physical activity. Backward multiple logistic regression resulted Age, BMI, Food habits, Aerated-drinks are significant risk factors. Hosmer and Lemeshow test for goodness of fit was used to assess the multiple logistic regressions. It resulted in a non-significant value which is an indicative that the model predicts the population fairly well.

Conclusion: Hypertension was high among PG-assistant compared to BT-assistant. Life-style modifications, increased physical activity, diet modification is recommended to reduce emergence, prevalence of hypertension and thereby reducing the risk of cardiovascular disease.

Copyright © 2013, INDIACLEN. Publishing Services by Reed Elsevier India Pvt Ltd. All rights reserved.

<http://dx.doi.org/10.1016/j.cegh.2013.04.003>

Original Article

Profession of barbering: Unexplored issues in HIV/AIDS

Bhola Nath^{a,*}, Ranjeeta Kumari^b, Tanu Midha^c, Narain Das Vaswani^d, Seema Lekhwani^e

* Corresponding author. Tel.: +91 8528463091.

E-mail addresses: bhola_2001@sify.com, bholanath75@yahoo.co.in (B. Nath).