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Diabetes Nepal is a non-profit public health organization to increase awareness of problem that can occur with diabetes in Nepal.

Diabetes Nepal has been working hard to make general public and health care professionals aware of Diabetes.

Diabetes Nepal is proud to organize the International Annual Professional Conference on 15th February 2014 at City Hall (Rastriya Sabha Griha), once again showing that diabetes is a global epidemic. The estimated number of adults living with diabetes has soared to 366 million, representing 8.3% of the global adult population. This number is projected to increase to 552 million people by 2030, or 9.9% of adults, which equates to approximately three more people with diabetes every 10 seconds. Diabetes is undoubtedly one of the most challenging health problems in the 21st century. A large number of adult populations in Nepal are suffering from diabetes. Diabetes has become one of the major health problems in Nepal and it is increasing day by day. There are estimated 800,000 people with diabetes in Nepal who spend about 10 billion rupees in their treatment. Diabetes if not treated properly can lead to complications like heart attack, stroke, gangrene, blindness, kidney failure etc which can cause early death and ill health. People with diabetes die on average 13 years earlier. Many people are dying unnecessarily at their prime economically productive age due to diabetes and its related complications.

More than 50 percent people are unaware of their condition and its prevention measures. On the other hand government and public health planners still remain largely unaware of the current magnitude, or, more importantly, the future potential for increases in diabetes and its serious complications in our country. They are still giving priority to prevent communicable diseases. Regarding this fact, Diabetes Nepal provides platform for the professionals to achieve new and well information for the management of diabetes and get chance to exchange of views among participants and experts which is very helpful in promoting diabetes awareness and understanding.

On behalf of Diabetes Nepal, I would like to express my profound gratitude to the experts who contributed their valuable time and their expertise to the conference, to the sponsors for their generous support, and to appreciate the participants being with us, in the International Annual Professional Conference.

Let’s work together to ensure the commitments made at the conference are turned into actions, not just for the millions who have diabetes today, but for the millions yet to come.
3 Falgun, 2070 (15th Feb. 2014)

4th Diabetes Nepal Annual Professional Conference
City Hall, Kathmandu

09:00 - 17:00 : Exhibition

- Diabetes Education, Sugar test
- Foot Education, Biothesiometer test
- Diet Education, Plate Model
- Healthy Snack Stall
- Healthy Food Stalls
- Postures on Scientific work
- Pharmaceutical Industry stalls
- Other diabetes related exhibitions eg. Diabetes Foot wear
  Glucometers
  Insulin Delivery Devices
  Exercise Equipments

Session 1 For Medical personnel (Chair: TBC) Hall No. 1
09:00 - 09:30 : Diabetes Education (Bill Stephens)
09:30 - 10:00 : Diabetes in children- poor control of diabetes in adults
  (Prasanna Kumar)

Session 1 For Diabetes Patients/Genera Public Hall No. 2
09:00 - 10:00 : Diabetes Education/Awareness/Prevention
  (Ajay Pradhan/ Pradeep Krishna Shrestha)

10:15 - 11:30 : Inauguration

11:30 - 12:00 : Break & Exhibition

Session 2 For Medical personnel (Chair: TBC) Hall No. 1
12:00 - 12:30 : Newer agents in the treatment of type 2 DM
  (Jiten Vora)
12:30 - 13:00 : Diabetes & BP Management in Developing countries
  (John Widing)

Session 2 For Diabetes Patients/Genera Public Hall No. 2
12:00 - 13:00 : Foot care in Diabetes (P. Shrestha/Ishwori
  Khanal/Satyam Rajbhandari)

13:00 - 13:15 : Break & Exhibition

Session 3: For Medical Personnel (Chair: TBC) Hall No. 1
13:15 - 13:45 : Treatment of Type 2 DM (Jyoti Bhattarai)
13:45 - 14:15 : Cardiovascular complications in Diabetes
  (Dina Shrestha)
14:15 - 14:45 : Human Metabolism: Food, Fat and Energy Expenditure
  (Milan Piya)

Session 3 For Diabetes Patients/Genera Public Hall No. 2
13:15 - 14:45 : Diet in Diabetes (Nani Shova Shakya/Jaya Pradhan)

14:45 - 15:00 : Break & Exhibition

Session 4: (Chair: TBC) For All Groups. Hall No. 1
15:00 - 16:00 : Open sessions with International experts

16:00 - 16:15 : Break & Exhibition

Session 5: For All Groups. Hall No. 1 (Chair: TBC)
16:15 - 16:30 : Poster Prizes, Diabetes Prevention in Nepal
  (Pradeep K Shrestha)
16:30 - 17:00 : Prize Lecture (Khem Karki, SOLID NEPAL)
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Invited Speakers

**Professor John Wilding** is Head of the Department of Obesity and Endocrinology at the University of Liverpool, UK. He has published over two hundred papers, chapters and review articles related to his clinical and laboratory research interests in type 2 diabetes and obesity. His clinical research focuses on the pathophysiology of obesity and diabetes and evaluation of new treatments. He is Chair of the UK National Clinical Research Network Metabolic and Endocrine Speciality Group. He leads specialist services for severe obesity at University Hospital Aintree - recently designated as a Centre for Obesity Management by the European Association for the Study of Obesity.

**Dr Bill Stephens** has been Consultant Physician responsible for diabetes care in Trafford since 1985. He led the development of the new Trafford Diabetes Centre, including the successful £500,000 fund-raising appeal for the new build, which opened in 2008. He led Trafford to the finals of the ‘Diabetes Team of the Year Award’ in 2007. He is President of the local branch of Diabetes UK and has taken part in many charitable events raising money for Diabetes UK. He is champion for structured education programmes for Type 1 & Type 2 diabetes, and for the greater use of insulin pumps.

**Professor Jiten Vora** is Consultant Physician/ Professor at the Royal Liverpool University Hospital and the University of Liverpool. He has served on many advisory panels, the National Institute for Clinical Excellence, and the Diabetes and Renal National Service Frameworks. Prof Vora has ongoing research interests in the development of/ screening for/ treatment of diabetic retinopathy; renal haemodynamics/ function and hypertension in Type 2 diabetes, the prevention of renal disease in diabetes and the physiological aspects of treatment of Type 2 diabetes. He has published extensively in these fields.
**Professor Prasanna Kumar** has 3 decades of experience in his field and has held distinguished positions with a number of professional bodies, like Research Society for the Study of Diabetes in India, Diabetes India, and Endocrine Society of India. He is the Hon. Professor and Head of Department at M. S. Ramaiah Medical College, India. He is also consultant endocrinologist at Centre for diabetes & endocrine care, Bangalore Diabetes Hospital & Director of PRIMER-an organisation dedicated to innovation in medical education and research.

**Dr Milan Piya** is a native of Nepal and NIHR Clinical Lecturer at University of Warwick as well as University Hospitals of Coventry & Warwickshire NHS Trust. After completing his MBBS in BPKIHS, Dharan, he worked in Bir Hospital for a year. He has been a Specialist Trainee in Diabetes & Endocrinology and he has recently done his 3 year’s PhD in obesity, inflammation and energy expenditure. He has published a number of papers, review article and book chapters in diabetes and obesity and inflammation. Some of his work were featured in a popular television series in the UK. He is the chair of Young Diabetologist and Endocrinologist Forum (YDEF), national organisation of the trainees of the UK.

**Professor Satyan Rajbhandari** is a native of Nepal and Honorary Clinical Professor at the University of Central Lancashire, UK. He is also a Consultant Diabetologist at Lancashire Teaching Hospitals (UK) where he leads Diabetes Research Unit. His special interest is Diabetes Foot Disease. He is General Secretary of Health Exchange Nepal (UK), which is a charity promoting health care professional training in Nepal. Health Exchange Nepal has been supporting Diabetes Nepal since its start.

**Dr Dina Shrestha** graduated from Tianjin China with merit and did her MD in Endocrinology from Dalian, China. She undertook numerous clinical attachments in the UK and Norway and has been working as a consultant endocrinologist at various hospitals in Nepal since 2006. She is the president of Diabetes and Endocrine Association of Nepal and vice president of South Asian Federation of Endocrine Society. She has published extensively in the field of diabetes and endocrinology.
Dr Ajay Pradhan  
MBBS, MD (INT. MED),  
Fellowship in Diabetology (RGUHS)  
Consultant Diabetologist at  
Blue Cross Hospital,  
Janamaitri Hospital  
Clinic At Four Diagnostic & Research Center

Jaya Pradhan is associate professor of Tribhuvan University, Food and Nutrition Department, Central Department of Home Science and executive member of Diabetes Nepal. 'Formulation of dietary pattern according to RDA – based on locally available foods' is one of her recognized research works. She has been doing PhD, entitle 'Effectiveness of Structured Dietary Education in Type 2 Diabetes' from Tribhuvan University and she has been awarded full-scholarship from UGC for her PhD program. She is a regular columnist of health magazine 'Sadhana Health Magazine' since, 2004.

Dr Jyoti Bhattarai graduated from IOM, Nepal and undertook training in Endocrinology in the USA. She is Visiting Associate Professor at Trivuwan University Teaching Hospital(TUTH), Institute of Medicine (IOM), Kathmandu Nepal and consultant at Nepal Thyroid Diabetes and Endocrine Centre at MetroPolyclinic. She is the Founding President of Diabetes Endocrinology Association of Nepal. She is President of America Nepal Medical Association. She is actively involved in teaching and research. She has published in peer reviewed journals.

Ishwori Khanal is Supervisor at TUTH medicine department. She has been involved with diabetes clinic at this hospital since it started. She is an advocate of patient education and takes active part in it.
Pradeep Krishna Shrestha is Professor of Medicine at TU teaching hospital. He was instrumental in setting up diabetes clinic there. He was also the lead clinician for Astha Nepal and was responsible for training lot of doctors and setting up clinics in various locations of Nepal. He has published papers in diabetes and supervises MD students for their research.

Nani Shova Shakya is a senior dietician at Dept of Dietetics, TU Teaching Hospital. She is also a senior dietician with ASTHA Nepal. She has been involved in diabetes education for a long time.
Every year Diabetes Nepal awards the Prize Lecture to a prominent Nepalese worker, who has made significant contribution to the improvement of health of Nepalese people in the field of diabetes and other non-communicable diseases. This year we are proud to honour Dr Khem B Karki for his work in improving community health in Nepal.

Dr. Khem B Karki received his Master's degree in Public Health after his graduation in Medicine and Surgery (MBBS) from IoM, TU. He has also received his Post Graduate Diploma in Journalism from Nepal Press Institute and MA in English Literature from TU. He is the Executive Director of Society for Local Integrated Development Nepal (SOLD Nepal), a pioneer NGO working to end child marriage and improve sexual and reproductive health outcomes in conjunction with EU, PSR-Finland, MAMTA India. He worked as a Principal Investigator for an operational Research on Human Resource for health in 2012, and as a Co-Principal Investigator for conducting a National Survey to identify Major Risk Factors for Non-communicable Diseases in Nepal, 2008. He has continuously worked in communities to prevent diabetes and other non-communicable diseases through health promotion and social mobilisation. He believes that doctors should also work out of the walls of the hospitals for healthy citizen and a prosperous country.

Dr. Karki was involved in various policy-making sectors as a Lead Consultant to draft and formulate national policies, plans and toolkits on SRH, HIV/AIDS and NCDs. He is a pioneer resource person for Sex, Sexuality, Sexual and Reproductive Health & Rights, HIV, gender etc. He is a member of Health and Physical Education Subject Committee, in Curriculum Development Centre, MOE; member in Steering Committee for 'Assessment of Decentralized District Health System' under MOHP. He was a Co-Principal Investigator of a study carried out on NCD Hospital profile for Institute of Medicine in conjunction with WHO Nepal 2007. He was a member in Scientific Committee in International conference on disability, 2007; a member of Technical Committee for NDHS, 2006 etc.

Dr. Karki has more than 30 publications in the form of books, manuals, research articles on sexual and reproductive health, child marriage, NCDs etc. in national and international journals.

**Previous Prize Lecture given by**

2011: Prof Sanjib Sharma. “Preventing Diabetic Nephropathy with community involvement”

2013: Dr B R Marasini “Addressing the Challenge of Non-Communicable Disease in Nepal”
Background:
Diabetic peripheral neuropathy (DPN) is the most common microvascular complication of diabetes and causes serious morbidity and mortality. Distal symmetrical polyneuropathy is the commonest manifestation with involvement of small and large fibers. Due to the alarming rise in foot complications there is a need for efficient tools to screen and detect neuropathy in resource poor health settings in Nepal. Though, NCS is considered gold-standard in the diagnosis of DPN, these tests are not feasible to diagnose DPN in the Nepali context.

Aim:
This study intends to compare the efficacies of Michigan Neuropathy Screening Instrument (MNSI) with Nerve Conduction Study (NCS) in detecting Diabetic Peripheral Neuropathy (DPN) in patients with diabetes mellitus.

Materials and Methods:
A cross sectional observational descriptive study was conducted at the outpatient clinics of Endocrinology and Neurology at Tribhuvan University Teaching Hospital (TUTH) between July 2012 and June 2013. A total of 116 patients with diabetes mellitus who met the selection criteria treated were evaluated by MNSI (questionnaire and physical examination) and NCS (for detecting sensory defects in bilateral sural nerves) for presence or absence of neuropathy. NCS was the gold standard used in this study to establish the diagnosis of DPN. Validation tests were carried out to test the reliability and accuracy of MNSI.

Results:
Out of the 116 patients of diabetic patients studied, 54 patients were diagnosed as DPN by MNSI. When compared with the NCS, the gold standard used in the study, the sensitivity of MNSI was 87%, specificity was 80%. The positive and negative predictive values were found to be 74.1% and 90% respectively. The prevalence of DPN in this study population was 34.48%. The mean age of the entire diabetic population in this study was 51.91 ± 13.54 years with sex ratio of 1:1.15. The mean duration of diabetes was 5.32 ± 3.75 years. Both age and duration of diabetes had a significant association. Similarly, the mean BMI of 23.63 ± 3.11, mean HBA1C of
8.10 ± 1.84, mean urine microalbumin of 56.34 ± 85.48 and mean TG of 3.46 ± 1.41 had a significant association with presence of neuropathy. Smoking, presence of hypertension and diabetic retinopathy also had a significant association with the occurrence of neuropathy.

**Conclusion:**

From this study, MNSI has shown to be an effective tool in the diagnosis of DPN. The application of this tool may also have an advantage over nerve conduction studies in achieving the diagnosis of small-fiber neuropathy and occult neuropathy. The use of this tool in resource limited settings and primary peripheral centers of Nepal can help in screening for DPN as a measure of primary prevention of foot complications.
Aims & Objectives:
Subjects with diabetes often have concerns about complications. The aim of this study was to analyse and quantify ‘Concerns’.

Methods:
Patients with diabetes waiting for any clinic appointment were approached and asked about their ‘Concerns’ on a 100 mm visual analogue scale for complications of eyes, kidneys, feet, heart and stroke.

Results:
132 subjects with diabetes [mean age 70.4 (+/- 11.9); duration 8.1 (+/- 7.1) years] were studied. Majority (76.5%) were Caucasians (76.5%) and females (56%). No differences were observed in ‘Concerns’ between various ethnic groups or genders. ANOVA showed a higher (P=0.02) level of ‘Concerns’ regarding complications of eyes (52.3 +/-33.3), feet (55.9 +/- 59.8) and the heart (50.6 +/- 32.9) in comparison to stroke (40.7 +/- 29.0) and kidneys (40.6 +/- 31.1). There was no increase in ‘Concerns’ if their acquaintances had complication, however, if patient had any complication, their level of ‘Concerns’ was two to three fold high (p< 0.05). Regression analysis showed a higher level of correlation between the duration of diabetes and ‘Concerns’ about feet (r = 0.76), kidney (r = 0.89) and stroke (r = 0.97) but not for eye (r = 0.4) or heart (r = 0.4).

Conclusions:
Our study shows that the level of ‘Concerns’ about various complications is not influenced by acquaintances, but by personal experience. The level of ‘Concerns’ was low during early diabetes without complications. Further studies are needed to see if this is due to the lack of information or due to a good patient education.
A number of plants from tropical, temperate and sub-alpine region of Nepal had been screened for anti-diabetic properties. The selection of plants was based on ethnopharmacological information. The experimental works were carried out in bio-medical research work of BIRDEM lab in Dhaka under the collaboration and fellowship of ANRAP. The screening of biological activities of ethanolic extracts were carried on streptozotocin induced diabetic rats. Biological screening showed positive results in all the selected plants which revealed the possession of anti-diabetic values. Further efforts could generate the lead molecules for the development of new drugs.
Background & Aim:

Diabetes is a common condition worldwide and its prevalence is rising day by day. About 25% people with diabetes experience painful neuropathy. It is a distressing condition and affects physically and emotionally. Our aim is to measure the emotional distress in subjects with diabetes painful neuropathy (DPN) in comparison with random diabetes subjects using Hospital Anxiety and Depression Scale (HADS Scale).

Method:

25 adult subjects (mean age 52, standard deviation (SD) 10) years, male 15, female 10) selected randomly attending diabetes painful neuropathy clinic for follow ups at Chorley Hospital and 25 adult subjects (mean Age 51, SD 14 years, male 14, female 9) with diabetes selected randomly when attending General Practitioner Surgery. Both groups completed Hospital Anxiety and Depression Scale questionnaire.

Results:

There are 13 subjects (52%) out of 25 diagnosed Anxiety in DPN group, mean score 7.28 and SD 3.42. In diabetes group 5 subjects (20%) diagnosed Anxiety, mean score 4.72 and SD 4.34. (P = 0.0378). There are 15 subjects (60%) out of 25 diagnosed Depression in DPN group, mean score 8.36 and SD 4.05. In diabetes group 11 subjects (44%) diagnosed with depression, mean score 6.60 and SD 4.16 (P= 0.3961).

Conclusion:

Diabetes painful neuropathy is a distressing condition and causes significant emotional distress. Anxiety was significantly associated with DPN group. Depression was found 16% more prevalent in DPN group, however due to the small sample, the data for depression was not statistically significant.
Introduction:
Diabetic retinopathy is the commonest micro vascular complication in patients with diabetes and remains a leading cause of blindness in people of working age group.

Study Method:
The study is a hospital based cross sectional study conducted at Eye department, Institute of Medicine. The study was conducted to find out association of glycemic control, dyslipidemia and nephropathy in patients with diabetic macular disease. It is a single institutional study of 220 eyes of 110 diabetic patients. Diabetic Retinopathy (DR) was graded according to International Clinical Diabetic Retinopathy Severity Scale and CSME was defined according to Early Treatment Diabetic Retinopathy Study (ETDRS) system. The patients were grouped as Group I (CSME group) as those with DR and CSME and Group II (Non- CSME group) as DR without CSME. Level of glycosylated hemoglobin (HbA1C), serum total cholesterol, triglyceride (TG), Low density lipoprotein (LDL), High Density Lipoprotein (HDL) and urine for albumin were studied in both groups.

Results:
Mean age of the patients was 53.5 years with standard deviation of 10.8 years with male predominance (67.27%) than female (32.72%). Mean duration of known diabetes was 9.69 years. CSME was present in 36% of patients with diabetic retinopathy, which showed positive association with poor glycemic control and high total cholesterol level (p<0.005). Even though there was high LDL, TG and low HDL level in patients with CSME as compared to Non- CSME, no statistical significance was found. The awareness about ocular complications due to diabetes was present in 63.6% of the patients.

Conclusion:
The importance of metabolic control of blood sugar and lipid in DR is highlighted by this study. Hence, oral hypoglycemic agents, insulin and lipid lowering agents have beneficial role in DR, especially in those with CSME.
Factors affecting Nonadherence to Diet and Physical Activity among Type 2 diabetes patients in Nepalgunj Area of Nepal

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¹Dept of Community Medicine, Nepalgunj Medical College Teaching Hospital, Nepal, ²Dept of Community Medicine, Nepal Army Institute of Health Sciences, Nepal, ³Dept of Biochemistry & Cell Biology, Bangladesh Institute of Health Sciences (BIHS), Dhaka, Bangladesh.

Nonadherence to diet and physical activity is a major problem in the management of diabetes mellitus and its complications. The present study was undertaken to measure the proportion of nonadherence to diet and physical activity and also factors affecting nonadherence among a group of Nepalese type 2 diabetic patients attending a tertiary care hospital.

An analytical cross-sectional study was conducted at NGMC Teaching Hospital, Koholpur. The type 2 diabetic patients of both sexes were interviewed with pre-tested questionnaire. Information on sociodemographic characteristics, health care delivery system, clinical characteristics and proportion of nonadherence were collected. Dietary history was taken by three days recall method and physical activity was assessed by using Compendium of Physical Activity and GPAQ scoring. Adherence was measured by compliance to the advice given to individual subjects. Those with >=75% of the total score, they were good adherent, 50-75% poor adherent and <50% were nonadherent.

A total number of 385 type 2 diabetes patients were enrolled where female-male proportion of 51.4% and 48.6% respectively. Among the total patients 87.5% were nonadherent and 12.5% were poorly adherent to dietary advice while 42.1% were nonadherent, 36.6% partially adherent and 21.3% were good adherent to physical activity. Adherence level was higher in males than females (M±SD, 33±16.7 vs 27±15.5, p=0.001). With increasing age, level of dietary advice adherence decreased (p=0.06). Respondents from nuclear family were more adherent to dietary advice than joint and extended (p=0.001) ones. Adherence level was higher among those staying nearer to hospital than far from hospital (M±SD, 32±18.6 vs 28± 13.5, p=0.013). Adherence level was positively correlated with the knowledge about diabetes mellitus score (r=0.115, p=0.024). Adherence level of dietary advice was higher among those advised by physicians than others (p=0.001). Physical activity adherence level was higher in the respondents with positive family history of diabetes compared to those with no family history (M±SD, 74±24.2 vs 65± 23.6,
Respondents from rural area had higher level of adherence than urban and semiurban ones (p=0.004). Upper middle socioeconomic class respondents had higher adherent level to physical activity than lower class ones (p=0.047). Respondents belonging to extended family had higher level of nonadherence than those from nuclear or joint family (p=0.041).

In conclusion, vast majority (87.5%) of type 2 diabetic patients of Nepalgunj area are nonadherent to dietary advice and even the remaining ones are only poor adherent. Adherence to physical activity in the same population is much better (with corresponding nonadherence of 42.1%), but still only one-fifth (23.1%) of the population have good adherence level and the remaining (36.6%) are only poorly adherence. Female gender, increasing age, joint or extended family members, far distance from the hospital, lack of knowledge about diabetes mellitus and advice by the professionals other than physicians seem to be the most important determinants of nonadherence to dietary advice. Nonadherence to physical activity seems to be mainly influenced by negative family history of DM, divorced status, urban or semiurban residential area, lower socioeconomic class.
Dietary counseling is an integral part of diabetes self management education (DSME). It provides individualizing nutritional care to encourage modification of eating habits and to develop healthy eating practices. Healthy eating is one of the seven self-care behaviors addressed in DSME. Appropriate dietary practices are a basic and integral part treating diabetes mellitus and may reduce the development of disease complications by improving risk factor profiles.

Objectives - The objectives of the study was to assess the nutritional status and contributing risk factors including reversible and irreversible factors for developing type 2 diabetes, to determine the daily total calorie requirements from carbohydrates, proteins and to evaluate the effectiveness of dietary counseling in type 2 diabetes patients. Evaluation of the effectiveness of dietary counseling was carried out on the basis of recorded data from baseline and post survey as the measure of various outcome variables. Anthropometric measurements (BMI and WHR), Biochemical assessment (fasting glucose, postprandial glucose), Clinical examination (blood pressure) and Dietary information (24- hours dietary recalled) – ABCD approaches were used to assess the nutritional status of the selected respondents at baseline and after six months of the study.

Methodology - Patients diagnosed with type 2 diabetes for at least one year and aged 30 to 60 years were selected purposively. The total 150 sample was then divided into educational group or control group with their consent. Based on baseline information, the respondents of educational group received individual dietary counseling and control group got usual health-care from their physician. Data was summarized using standard descriptive techniques such as frequencies, percentage, means and standard deviations (SD) were used to calculate difference within and between group at baseline and at the end of the study. The paired t-test was used to compare outcome variables within and between two groups. Statistical significance was assessed at a level of less than 0.05.

Result – Overall no difference was found between groups at baseline survey. There was a mean reduction in BMI, systolic bold pressure, diastolic pressure, fasting glucose level, triglyceride, LDL, cholesterol of educational group compared to control group but the differences did not reach statistically significant within and between groups. However, WHR (p = 0.006) and
HDL \( (p = 0.004) \) were statistically improved in educational group. The baseline mean total calorie intake of educational group was decreased from 1771.4 to 1487.7 calories whereas, in control group decreased from 1607 to 1503.3 calories. There was a statistically significant improvement in total calorie intake within educational group \( (p = 0.006) \) and also between two groups \( (p = 0.001) \). The result also showed a significant improvement in mean calorie from carbohydrate \( (235.8 \text{ to } 213.3 \text{ grams, } p = 0.07) \) and fat \( (56.3 \text{ to } 38.5 \text{ grams, } p = 0.03) \) in educational group.

Conclusions – The result of the study depicted the positive impacts of dietary counseling on dietary pattern particularly, total calorie intake, calorie from carbohydrate, protein and fat. The recorded data showed that except the values of HDL and PP glucose level, there was no statistically improvement in other physiology as well as biochemical variables, but the results were in the direction of an improvement.
About 10% of all hospital beds in the UK are occupied by people with diabetes.

Patients with diabetes stay longer irrespective of the cause of admission thereby increasing financial and health resources burden to the NHS. Any strategies to reduce the inpatient stay would provide considerable benefits for patients and the NHS.

We commenced weekly inpatient diabetes ward since July 2008 to help manage diabetes and its complications & to lessen inappropriately longer stay in people with diabetes.

Retrospective audit of the patients admitted with diabetes in the year 2008 was conducted to study the impact of the inpatient diabetes ward round. Data was collected electronically. Of total number of 1727 patients with diabetes mellitus, 1062 day attendee’s were excluded from the study. 11% had Type 1 Diabetes Mellitus and 89% had Type 2 Diabetes Mellitus. Average length of stay of the remaining 665 patients in the year 2008 was 8.06 days (1 to 135 days). Inpatient diabetes ward round was effective in reducing average length of stay from 8.45 days in the 6 months prior to inpatient ward round to 7.63 days in 6 months period after the intervention. The decreasing trend of length of stay continues in the year 2009 as well. Average lengths of stay for common conditions were: Diabetic ketoacidosis: 5 days; Hypoglycaemia: 7 days; Septicaemia: 32 days; Diabetic foot ulcer: 28 days.

Our observation shows that length of stay of patients with Diabetes can be reduced in the hospital but this is still associated with significantly excess length of stay and therefore needs further specialist coordinated strategies to reduce the burden.
MRSA infection is common in diabetic foot clinic and our 2002 audit showed its prevalence to be 33.3%. We implemented changes such as restrict use of antibiotics, universal use of disposable gloves, apron and hand wash after each patient contact. In 2006/07 re audit, we found that the overall prevalence of MRSA reduced to 15% of subjects with ulcers and 18.7% of total positive cultures. Of 133 patients with foot ulcers seen during this time 19 did not have diabetes and were excluded. MRSA was isolated from 19 (14.3%) of the remaining 114 subjects (71 male & 16 type 1 DM). There were no difference in age, sex, diabetes type, HbA1c, presence of cardiovascular disease, serum creatinine and total cholesterol between subjects with and without MRSA. Serum albumin was lower in MRSA subjects (39.6 +6.4 vs 32.9 +8.6; p <0.001). Only 42.9% of ulcers with MRSA healed by 6 months in comparison to 80.9% of ulcers without MRSA (p <0.05). There was higher mortality (31.6% vs 11.6%; p<0.05) and amputation (35.7% vs 11.3%; p<0.05) amongst MRSA subjects. Our observation shows that MRSA can be reduced in foot clinic but its presence is still associated with higher morbidity and mortality.
Discontinuation of treatment in patients with painful diabetic peripheral neuropathy

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Clinical trials for the treatment of painful diabetic peripheral neuropathy (PDPN) do not always reflect real patient. In order to investigate what happens to real life patients we studied treatment given to patients with PDPN and evaluated its response.

In this retrospective study, 128 case records (84 males) of PDPN patients between 2003 – 2009 were analysed. Mean age (SD) was 62.7 (± 12.4) years of which 15% had type 1 diabetes. The severity of pain using visual analogue scale (VAS) was 8.3/10 (± 1.6) at presentation.

Mean HbA1c was 8.7 (± 2.5)% and the median follow up was 26 weeks duration. Out of these, 15 subjects did not need any treatment apart from reassurance. 40 (31.3%) patients had good response and 41 (32.0%) had tolerable pain with treatment. 13 (10.2%) did not respond to treatment. There was no difference in the response to treatment between males and females (P=NS) or those above and below 60 years of age (p=NS). Amitriptiline was prescribed in 71 cases and was continued on 49.3% of these cases. Pregabalin was prescribed in 61 cases with 37.7% continuing it and duloxetin prescribed in 33 cases with 51.5% continuing it.

Our study shows that two third of patients with PDPN have satisfactory response to treatment however, there is a need to try various medications until a favourable outcome is achieved. The withdrawal rate of various treatments may be more than 50% when treating patients with PDPN in real life.
Case History:
18 year gentleman presented with 10 month of being unrousable in the morning requiring his parents to feed him. He found himself in the kitchen in the middle of night eating and not knowing how he got there. He was expelled from school due to poor attendance performance. Insulinoma was suspected as he had a family history of MEN1. Unfortunately he had not had predictive genetic testing as his parents had not discussed the father’s diagnosis with him.

Investigations and method:
He underwent a 48 hour fast, becoming hypoglycaemic at 8 hours (blood glucose: 1.7 m mol/l, Insulin: 98pmol/l, Proinsulin: 13pmol/l, C peptide: 1114pmol/l). Fasting gut hormones were normal, Corrected calcium 2.38mmol/l, Parathyroid Hormone 79ng/l (14-72), IGF-1: 62.4nmol/L, Prolactin 166mU/ mU/l. MRI pancreas demonstrated a hyper vascular lesion in the tail of pancreas, but endoscopic ultrasound of pancreas demonstrated a 2 cm mass adjacent to the splenic hilum, with the rest of the pancreas diffusely abnormal suggestive of further lesions. FNA cytology of the 2cm lesion confirmed it to be a pancreatic endocrine tumour. He underwent pancreatic angiogram with insulin stimulation which confirmed a 12mm area of early arterial blush at the distal third of the pancreatic body and insulin secretion from this lesion. Genetic Testing was positive for MEN 1 gene: 1022G>A (p.Trp341X) gene mutation.

He had multiple episodes of hypoglycaemia whilst on the wards and it was deemed unsafe to discharge him prior to surgery. He did not tolerate diazoxide and required overnight 10% dextrose infusion to prevent hypoglycaemia. He underwent distal pancreatectomy and splenectomy which revealed a well differentiated pancreatic endocrine tumour (Stage T1N1) microadenomatosis and a lymph node metastasis. On a positive note after appealing to the LEA informing them of his medical condition and hypoglycaemia to which we attribute his difficulties at school, we are pleased that he has been readmitted to school and is starting A levels with a view to studying medicine.

Conclusions and points for discussion:
We illustrate a case of young male with MEN 1 who has a metastatic insulinoma,
and a remaining pancreas with multiple residual neuroendocrine tumours. Currently he is asymptomatic but is at high risk for developing further symptomatic insulinomas as well as non-functioning neuroendocrine tumours. He has metastatic disease so he is at risk of developing further metastases. Currently there are no adjuvant therapies recommended. We will discuss the management dilemmas we faced and the potential options for further treatment including further surgery, somatostatin analogues as potential treatment of hypoglycaemia and tumour stasis, targeted radionuclide therapies and newer biological agents currently being used in the management of pancreatic NETs. This case also highlights the impact of insulinoma and MEN1 in a young person and the dilemmas within a family of revealing one member has a hereditary disease.
We report the analysis of 27 patients with Type 1 diabetes, aged 16 to 25 years, attending the Young Persons Diabetes Clinic, using both an electronic database and hospital notes. Mean age was 20 years, mean age at diagnosis 11 years (range 2 to 20 years), 59% males (n=16) and 41% females (n=11), 22% with family history of diabetes, Type 1 diabetes (n=26) and Type 2(n=1), mean duration of diabetes: 8 years (range 3 to 16 years). Mean weight was 72 kg, increasing in both males (from 73.6 to 82 kg) and females (from 62 to 85 kg) with age, mean Body mass Index(BMI) 24 kg m(-2) increased from 22.5 to 27.3 with age and mean HbA1c 9.4% improving to 8.8% with age. Insulin requirement decreased (from 1 to 0.5 unit/kg) in males but increased (from 0.6 to 0.9 unit/kg) in females with age. Prevalence of hypertension was 22% (n=6), cholesterol >4mmol/L: 59% (n=16), LDL >2mmol/L: 18% (n=5), micro albuminuria: 15 %( n=4), proteinuria: 11% (n=3). 15% had suffered from diabetic ketoacidosis (50% within the last year). 48.1% suffered from hypoglycaemia (mild 70%, moderate 23%, severe 7%).

Glycaemic control improved through young adult years despite weight gain especially in young women but efforts need to be intensified towards control of weight, hyperglycaemia, hypertension, hyperlipidaemia and early detection of nephropathy in adolescence.
We studied the lifestyle and social factors in 27 patients with Type 1 diabetes, aged 16 to 25 years attending the Young Persons Diabetes Clinic, using both electronic database and hospital notes. 59% were males (n=16) and 41% females (n=11), mean weight 72 kg, increasing in both males (from 73.6 to 82 kg) and females (from 62 to 85 kg) with age, 37% driving, 59% consumed alcohol/week (18%>20 units, 18%:10 to 20 units, 56%:<10 units), 22% smoking, 60% were physically active, 27% used contraception, 59% in education, 77% employed, blood glucose monitoring performed by 52%>3times/day (5% thrice, 10% twice, 26% once, 5% never), only 7% of patients had mental health problems and 2% requiring psychology input, 33% had areas of conflict with parents, 81.4% confident in their ability to manage their diabetes, 22%(n=6) seen the dietician, 77.7% diabetes specialist nurse. 74% of patients were on basal bolus insulin, 11% twice daily insulin, 7.4% 3 injections/day, 15% omitted insulin frequently, 7.4% were taking ACE inhibitors, 3.7% Metformin, 3.7% statin. 44.44% did not attend (DNA) the clinic since referral (50% once, 25% twice, 25% thrice).

Advice regarding alcohol, smoking, contraception and weight loss, incorporating structured education should be considered so that young people with diabetes are able to adapt their lifestyle and consequently improve in self management skills, glycaemic control and attendance rates.
Birth to designation -
A safe multidisciplinary bariatric service

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Aims/Objectives
Bariatric surgery is an effective, safe and cost-effective treatment for obesity. Most published data is from large volume surgical centres. Our centre had a multi-disciplinary obesity service, and bariatric surgery was introduced with an experienced mentor. Our aim was to evaluate the safety and efficacy of bariatric surgery through our development into being designated a bariatric surgery centre in November 2010.

Methods
Case notes and biochemical data were reviewed for all procedures performed since 2007 when bariatric surgery was first performed.

Results
Until August 2011, 120 bariatric procedures were performed, 86% laparoscopic gastric bands (LGB). 45% were NHS funded, 86% women, with mean age 44.1±11(sd). BMI 46.4±10kg/m² reduced by 8.0±3.6kg/m²(p<0.001). 27% had type 2 diabetes. Pre-operative HbA1c of 8.0±1.9% reduced to 6.5±1.6%(p=0.016). Fifteen LGB were performed in 2008, with 42 procedures already performed in 2011 before August. All but two operations until March 2011 were LGB/gastric balloons. One biliopancreatic diversion, four gastric bypass and five sleeve gastrectomy operations have now been performed. Laparoscopic/endoscopic surgery was performed in 98% of cases. There have been no mortalities or conversion of laparoscopic to open surgeries. One patient developed port site infection, and two patients had post-operative pneumonia.

Conclusions/Summary
The development of bariatric centres is necessary to meet the increasing demand for bariatric surgery. The development of our unit as a bariatric centre has been safe and effective, with the effort of a multidisciplinary team and experienced mentor over several years. This may serve as a model for further centres trying to achieve designation as bariatric surgery centres.
Aims:
The aim of the study was to see if there were any differences in characteristics of patients between predominantly Muslim and Hindu urban Indian population from Bangalore.

Subjects and Methods:
General public were invited for health check up including capillary blood glucose tests during public events performed in the mosque and the community centre in Bangalore. Simple history, anthropometric data, blood pressure and random blood glucose were measured. Only those subjects above the age of 30 were analysed.

Results:
367 predominantly Muslims were screened in the mosque out of which 326 were above the age of 30. In the community centre 102 predominantly Hindus were screened of which 86 were above 30. Subjects who were known to have diabetes (DM) were analysed separately from those who were not known to have diabetes (non-DM). Uncontrolled blood pressure (> 160/90 mm Hg) was more prevalent amongst Muslim population both in DM (51.2% vs 27.3%; p < 0.01) and non-DM (51.2% vs 27.7%; p <0.01) group. Overweight (BMI > 25) was common in subjects with diabetes in both communities (71.3% vs 69%; p= NS). There were no differences (p>0.05) in age, BMI and proportion of diabetes patients but more males were screened in the mosque.

Discussion:
Our data shows that overweight is common in both communities, however, uncontrolled blood pressure was two-fold high amongst Muslims. Diabetes is often associated with hypertension, which can be influenced by a number of factors. Religious belief is possibly one of them and further studies are needed to explore it.
Risk factors other than neuropathy cause increased prevalence of high risk feet in newly diagnosed elderly type 2 diabetes subjects

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Chronic complications are often present at diagnosis of type 2 diabetes (T2D). In UKPDS 36% newly diagnosed T2D subjects had retinopathy, 1.9% had proteinuria and 11.5% had raised vibration threshold, however there is paucity of data on various risk factors for foot ulceration in this or other studies. We analysed the foot screening data of 292 newly diagnosed T2D subjects and classified into high, medium and low risk categories depending upon previous foot ulcers, neuropathy, ischaemia, deformity and vision. History of ulcers were present in 4.1%, impaired 10gram monofilament sensation in 8.2%, impaired pin prick sensation in 20.9%, ischaemia in 26.7%, foot deformity in 34.6% and poor vision in 11.1% of subjects. Increasing age was significantly (p=0.005) related to ‘at risk feet’ with 15% [mean age 66.7 ± 11.9 years] having high risk, 29.5% [mean age 66.4 ± 10.6 years] having medium risk and 55.5% [mean age 61.6 ± 11.1 years] having low risk feet. Age was positively associated with ischaemia (p=0.018), deformity (p=0.002), visual problem (P=0.002) and living alone (P=0.001) but not with previous ulcers or neuropathy. Our data confirms the need for foot screening of all newly diagnosed T2D subjects with special attention to elderly.
Study of occurrence of amino acid mutation (ala98val) of HNF1α in association with type II diabetes in diabetic population of Kathmandu

Sandeep Aryal, Ritambhara Aryal, Lalita Mazgaeen, Anit Shah, Bishnu Joshi, Dr. Basant Pant, Praphul Shakya*

*SANN International College in collaboration with Annapurna Neurological Institute and Allied Sciences.

Maturity onset diabetes of the young [MODY] type 3 is a monogenic form of diabetes. Gene defects in the Hepatocyte Nuclear Factor -1 alpha (HNF1α) have been found to cause MODY3. HNF1α gene located in the chromosome (12q24.2) codes for a transcription factor which helps in signaling of insulin exocytosis in pancreatic Beta cells. A prevalent amino acid mutation at codon 98-Ala98Val (exon 1) of the HNF1α was shown to be associated with diabetes in the South Indian population. The study was designed to investigate the occurrence of amino acid polymorphism at codon 98- Ala98Val of HNF1α in association to type II diabetic population of Kathmandu. DNA samples were randomly collected from 12 non-diabetic and 56 diabetic patients. The DNA samples were amplified using Polymerase Chain Reaction (PCR). Restriction Fragment Length Polymorphism (RFLP) was carried out to identify the occurrence of the mutation. During the study, 16.17% of Ala98Val mutation was observed among 68 samples.
Utility of Berlin and Epworth Sleepiness score questionnaires in screening for Obstructive Sleep Apnoea in South Asians with Type 2 Diabetes

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BACKGROUND:
Berlin and Epworth Sleepiness Score (ESS) questionnaires are commonly used to screen for Obstructive Sleep Apnoea (OSA) but their validity in South Asians (SA) with Type 2 Diabetes (T2DM) has not been examined.

AIMS:
To examine the validity of ESS and Berlin questionnaires in screening for OSA in SA with T2DM.

METHODS:
Patients were recruited randomly from diabetes clinic in a tertiary UK centre. Berlin and ESS were completed and OSA was assessed by a portable multi-channel device (Alice PDX, Philips Respironics, USA). Data are presented as mean±SD or Median (IQR). ESS≥10 and a high Berlin score were considered suggestive of OSA. The sensitivity (Sn), specificity (Sp), positive predictive value (PPV) and negative predicative value (NPV) were calculated for ESS and Berlin for OSA diagnosis.

RESULTS:
62 patients were included, 61% were men and 36% had OSA. Patients' characteristics (OSA+ vs. OSA-)(AHI>5=OSA): Age 57±11 vs 50±12yrs, p=0.03, diabetes duration 13yrs (6-17) vs 10yrs (9-20), p=0.1, HbA1c 8.8±1.7 vs 8.5±1.6%, p=0.5, systolic BP 124±15 vs 125±15mmHg, p=0.9, diastolic BP 74±10 vs 78±9, p= 0.2, body mass index (BMI) 31.5±5.4 vs 29.6±4.3, p=0.13, waist circumference 109±14 vs 102±12cm, p=0.06, neck circumference 40.4±4.1 vs 38.6±3.5cm, p=0.07, ESS 10(3-15) vs 4(1-9), p=0.04.

The Sn, Sp, PPV and NPV of Berlin and ESS are summarised in

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CONCLUSIONS:
OSA is common in SA with T2DM. ESS is poor screening method while Berlin has a high NPV, but the Sp and PPV are poor. Thus, better methods to screen for OSA in SA with T2DM are needed.
Obstructive sleep apnoea (OSA) is common in type 2 diabetes (T2DM). Since OSA is associated with oxidative stress and inflammation, factors which are also important in the development of diabetes complications, our aim was to assess the relationship of OSA to diabetic peripheral neuropathy (DPN) in T2DM patients.

Methods:
Subjects were recruited randomly from the out-patients of a tertiary centre in the UK. Patients with known respiratory disorder (including OSA) were excluded. DPN was diagnosed using the Michigan Neuropathy Screening Instrument (MNSI). OSA was assessed by a home-based portable multi-channel respiratory device (Alice PDX, Philips Respironics, USA). An apnea-hypopnea index (AHI) ≥ 5 events/hour was the cut off to diagnose OSA. Data are presented as mean±SD.

Results:
One hundred patients were included. 45% had OSA (49% mild, 33% moderate, 8% severe). Participants’ characteristics (OSA+ vs. OSA-): Age 61±9 vs. 53±12 years, p=0.001; diabetes duration 13±8 vs. 12±7 years, p=0.4; body mass index (BMI) 33.9±5.5 vs. 33.4±8.4 Kg/m², p=0.7; HbA1c 8.4±1.7 vs. 8.4±1.4%, p=0.9; total cholesterol (TC) 3.6±0.7 vs. 4.2±1.3, p=0.003; blood pressure (BP) 129±16/77±9 vs. 125±17/77±9 mmHg, p=0.8; smokers 8 vs. 17%, p=0.3; alcohol 76 vs. 24%, p<0.001, men 77 vs. 44%, p=0.001.

The prevalence of DPN was significantly higher in OSA+ patients (64 vs. 36%, p=0.006). In logistic regression model, OSA remained a significant predictor of DPN (OR: 5.73, 95%CI 1.12-29.27, p=0.036) after adjusting for age, gender, diabetes duration, HbA1c, cholesterol levels, renal function, alcohol intake, smoking, BP, BMI, waist circumference, diabetes treatments, antihypertensives and lipid lowering therapy. There was no significant relation between OSA severity and DPN.

Conclusion:
We conclude that OSA is associated with DPN in subjects with T2DM. Larger subject numbers are being analysed in order to confirm our findings, control for other potential confounders and examine the underlying mechanisms.
Contrasting relationships between sleep duration and central obesity in South Asians and White Europeans with Type 2 diabetes

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Birmingham, UK

Background:
Disorders of sleep have been linked to obesity in the non-diabetic population, however this relationship has not been studied in type 2 diabetes (T2D). Our aim was therefore to assess the relationship between sleep duration and central obesity in patients with T2D.

Methods:
A cross-sectional study of consecutively recruited patients from the diabetes clinic of a secondary care hospital. Sleep duration was based on total sleep time (TST) recorded during a multichannel cardio-respiratory study (Alice PDX, Phillips Respironics) to assess the apnoea hypopnea index (AHI). TST was defined as sleep duration minus arousals/awakenings. Central obesity was assessed using waist circumference (WC). Data was analysed in White Europeans (WE) and South Asians (SA) separately.

Results:
120 WE [mean age 59.3±10.4 years, diabetes duration 11.5±7.4 years, BMI 36.8±8.5 kg/m², WC 119.4±15.8 cm, men 59.2%] and 99 SA [age 54.9±12.3 years, diabetes duration 13.0±7.9 years, BMI 30.7±5.5 kg/m², WC 106±12.7 cm, men 55.6%] were included in the analysis. TST was similar in WE and SA (398.4±108.2 vs. 388.9±98.8 minutes, p=0.5). TST correlated with WC positively in SA (r=0.22, p=0.03) and negatively in WE (r= -0.24, p=0.008). After adjustment for age, gender, diabetes duration, AHI, smoking, alcohol intake, insulin treatment, and incretin-based therapy, TST remained independently associated with WC in SA (B= 0.03, p=0.04) and WE (B= -0.03, p=0.02).

Conclusions:
Shorter sleep duration in WE and longer sleep duration in SA are independently associated with increased central obesity in T2D. The reasons for the ethnic differences need to be studied. Whether sleep duration manipulation would impact central obesity remains to be examined.
Our patient is a 40-year-old man with a 22-year history of type 1 diabetes. His control had been consistently poor but he had minimal end organ damage. There was no significant past medical history or family history. He was a C1 driving licence holder, and the DVLA was aware of his diagnosis of type 1 diabetes.

In January 2007 he unexpectedly lost 8kg in weight and found he required less insulin. He had frequent hypoglycaemic episodes, but did not seek medical attention.

Five months later he was involved in a road traffic accident that was fatal to the other driver. The paramedics found him to be hypoglycaemic. This resulted in a custodial sentence, and lifetime driving ban.

He was subsequently admitted to hospital to investigate his hypoglycaemia. Thyroid function and synacthen tests were normal. Coeliac serology was negative and he was mildly anaemic. His HbA1c was elevated at 10.4% (90mmol/mol). He was discharged without cause found.

A month later he was readmitted with breathlessness. He was severely anaemic with an Hb of 7.8g/dl, and was referred for gastroscopy. This demonstrated hyperplastic gastritis of the stomach, with altered blood present. Duodenal biopsies were taken and showed subtotal villous atrophy with a patchy increase in intraepithelial lymphocytes and crypt hyperplasia. The findings were consistent with coeliac disease. The patient was referred to a dietician for advice on a gluten-free diet. His haemoglobin normalised and a DEXA scan excluded osteoporosis.
Higher prevalence of undiagnosed glucose intolerance in urban adult Indian population than in South Asians living in the UK

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1. Diabetacare, India 2. University of Bolton, 3. Lancashire Teaching Hospital

Aims:
Glucose intolerance is common amongst South Asian (SA) adults in the UK and urban population of India. The aim of the study was to find differences between adult SA population in the UK and Bangalore.

Subjects and Methods:
General public were invited to come for check up including capillary blood glucose test during events held at public places. Invitations were sent by advertisement in local media, pamphlets in public places and word of mouth. Simple history, anthropometric data, blood pressure and random blood glucose were measured. Only those subjects above the age of 30 and SA ethnicity were analysed.

Results:
230 adult of SA origin in the UK and 412 in Bangalore were screened at various events. In the UK 14.6% and in India 42.7% (p<0.001) were already known to have diabetes. Amongst those not known to have diabetes, 8.5% in the UK and 21% in India (p<0.01) had impaired blood glucose (> 7.8 mmol) and 2.3% in the UK and 9.1% in India had possible diabetes (> 11.1 mmol). Amongst people with diabetes, 22.7% in the UK and 52.8% in India (p <0.01) had high blood pressure (> 160/90 mm Hg).

Discussion:
In the UK the proportion of subjects with known diabetes was low and their blood pressure were better controlled possibly due to universal NHS. There is no screening programme for detection of diabetes in both countries, despite which there were more cases of undiagnosed impaired glucose tolerance and possible diabetes detected in India.
Higher prevalence of abnormal clinical cardiac markers in long standing diabetes is not related to retinopathy status

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(1) Dept of Diabetes, (2) Dept of Pathology, Lancashire Teaching Hospital

A number of cardiac risk factors such as hypertension, abnormal lipid profile and long duration of diabetes are related both to the development of proliferative diabetic retinopathy (PDR) and cardiac disease.

Aims:
The aim of this study was to assess the prevalence of abnormal clinical cardiac results in subjects with and without PDR.

Methods:
Subjects who had undergone laser therapy for PDR and subjects without retinopathy (NDR) were recruited from various clinics and underwent clinical examination and blood taken for highly sensitive Troponin T (Ref range below <14ng/L), NTproBNP (Ref range < 75ng/L) and CRP (Ref range below 5mg/L). Fischer Exact test was used to compare the prevalence of abnormal test result.

Results:
37 subjects [Mean age 57.9 (± 12.5) years & diabetes duration 17.3 (± 11.1) years] were studied over 6 months. 5 subjects with PDR and 1 with NDR had previous cardiac episodes and were excluded from further analysis. There was no difference (p > 0.05) in age, duration of diabetes, HbA1c, creatinine, cholesterol and HDL between these two groups. All clinical markers were non-significantly raised in PDR in comparison to NDR (Troponin T 33.3% vs 23.1%, p = 0.4; NTproBNP 61.1% vs 38.5%, p = 0.1 & CRP 22.2% vs 15.4%, p = 0.3).

Summary:
Our study suggests that there is higher prevalence of raised Troponin T NTproBNP and CRP in asymptomatic subjects with long standing diabetes and there is no difference between subjects with or without proliferative retinopathy.
Study of the correlation of status of cardiac autonomic neuropathy to prolongation of QTc duration in diabetes mellitus

Parmatma Parajuli, Prof. Pradeep K. Shrestha
TU TH, Nepal

Objectives To assess the degree of correlation of status of cardiac autonomic neuropathy to the duration of QTc in diabetes mellitus. To assess the utility of prolonged QTc in screening cardiac autonomic neuropathy in diabetes.

Design/Setting Prospective observational study based on Tribhuvan University Teaching Hospital (TUTH), a tertiary referral center in Kathmandu, Nepal, starting May 2010 to May 2011.

Subjects 60 cases of diabetes mellitus attending the medical OPD in TUTH and Manmohan Cardiothoracic Vascular and Transplant Center.

Methods All included cases were subjected to a battery of cardiovascular reflex tests to assess the status of cardiovascular autonomic neuropathy (CAN) as per Ewing’s method. QTc was obtained from recent ECG in all the cases. Statistical analysis was done to assess the degree of correlation of the severity of CAN to QTc duration, and, sensitivity, specificity and predictive values of prolonged QTc in screening CAN was obtained.

Results The prevalence of CAN in the study population was 71.3%. There was a statistically significant positive correlation of the severity of CAN to the duration of QTc intervals (p<0.01, 95%CI). QTc > 460 msec as a screening test for cardiac autonomic neuropathy had a sensitivity of 86.4%, a specificity of 82%, and a positive predictive value of 92.4%.

Conclusion The prevalence of CAN is high in diabetes mellitus. Duration of QTc in the ECG correlates strongly to the severity of CAN. And, QTc may be utilized as a screening tool to detect CAN in diabetes mellitus.
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