

## Clinical Studies I

Chairpersons: A McCaw-Binns and N Duncan

## (O – 01)

**The burden of sight-threatening diabetic retinopathy***L Mowatt<sup>1</sup>, G Gordon-Strachan<sup>2</sup>**<sup>1</sup>Department of Surgery, Radiology, Anaesthesia and Intensive Care and <sup>2</sup>Health Research Resource Unit, Faculty of Medical Sciences, The University of the West Indies, Kingston 7, Jamaica*

**Objective:** To determine the frequency of diabetic retinopathy, its visual impairment and risk factors in diabetic patients attending the eye clinic at the University Hospital of the West Indies (UHWI).

**Method:** Prospective cohort study of diabetic outpatients at the UHWI Eye Clinic. Data were collected on age, gender, diabetes mellitus type (DM I/II), diabetic retinopathy, visual acuity, blood glucose and blood pressure.

**Results:** One hundred and four patients (208 eyes) were recruited for this study. There were 58.6% (61/104) females (mean age  $53.6 \pm 11.9$  years) and 41.4% (43/104) males (mean age  $61.7 \pm 12.1$  years). Type II DM (68.3%) was more common than Type I DM (31.7%). The blood glucose ranged from 4.9–27.6 mmol/L (mean  $12.7 \pm 5.9$ ) in Type I DM and 3.4–23.6 mmol/L (mean  $10.7 \pm 4.9$ ) in Type II DM. Blood pressure  $> 130/80$  mmHg was present in 82.7% of patients. The mean visual acuity was 20/160 (logMAR  $0.95 \pm 1.1$ ). Diabetic retinopathy was present in 78%, of which 29.5% had background retinopathy. Proliferative diabetic retinopathy (PDR), which can cause significant visual loss, was present in 50.5% of eyes. The odds ratio of developing PDR was 1.88 (95% CI 1.02, 3.3) for Type I DM compared to 0.74 (95% CI 0.55, 0.99) for Type II DM. Proliferative diabetic retinopathy was more prevalent in females ( $\chi^2$ ,  $p = 0.009$ ) in both Types I and II DM.

**Conclusions:** Jamaica has a high incidence of sight-threatening diabetic retinopathy. This is more common in Type I diabetics and females and is associated with poor glucose and blood pressure control. Early diabetic eye screening test and treatment can reduce this morbidity.

## (O – 02)

**Chronic kidney disease among patients attending a specialist diabetes clinic in Jamaica***TS Ferguson<sup>1</sup>, MK Tulloch-Reid<sup>1</sup>, NO Younger-Coleman<sup>1</sup>, RA Wright-Pascoe<sup>2</sup>, MS Boyne<sup>1</sup>, AK Soyibo<sup>2</sup>, RJ Wilks<sup>1</sup>**<sup>1</sup>Tropical Medicine Research Institute and <sup>2</sup>Department of Medicine, Faculty of Medical Sciences, The University of the West Indies, Kingston 7, Jamaica*

**Objective:** To estimate the prevalence of chronic kidney disease (CKD) among patients attending the University Hospital of the West Indies (UHWI) Diabetes Clinic and to determine the proportion of patients at high risk for adverse outcomes.

**Methods:** We conducted a cross-sectional study among a sample of UHWI Diabetes Clinic patients between 2009 and 2010. Trained nurses administered a questionnaire, reviewed docketts, and performed urinalyses. Estimated glomerular filtration rate (eGFR) was calculated using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation. Albuminuria was assessed using urine test strips for protein and microalbumin. Chronic kidney disease was defined as an eGFR  $< 60$  ml/min/1.73 m<sup>2</sup> or albuminuria  $\geq 30$  mg/g. Risk of adverse outcome (all-cause mortality, cardiovascular disease and kidney failure) was determined using the Kidney Disease: Improving Global Outcome (KDIGO) 2012 prognosis grid.

**Results:** Participants included 100 women and 32 men (mean age,  $55.4 \pm 12.9$  years, mean duration of diabetes,  $16.7 \pm 11.7$  years). Twenty-two per cent of participants had eGFR  $< 60$  ml/min/1.73 m<sup>2</sup>. Moderate albuminuria (30–300 mg/g) was present in 20.5% of participants and severe albuminuria ( $> 300$  mg/g) in 62.1%. Overall prevalence of CKD was 86.4% (95% CI 80.4–92.2). Based on KDIGO risk categories, 50.8% were at high risk and 17.4% at very high risk of adverse outcomes.

**Conclusion:** Most patients at the UHWI Diabetes Clinic had CKD and thus had high or very high risk of adverse outcomes. Further studies are required to determine the burden of CKD in other clinical settings and to identify the best strategies for preventing adverse outcomes in developing countries.

**(O – 03)**

**Perceived quality, adequacy and value of dietetics/nutrition in the medical curriculum**

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**Objective:** To ascertain the perception of medical students, doctors, lecturers on nutrition/dietetics content in the medical curriculum and the skills relevant to the delivery of care.

**Methods:** As part of a product evaluation, a convenient sample of 97 medical students (M = 35%, F = 62%), 134 doctors (M = 40%, F = 56%), and 25 medical school lecturers (M = 34%, F = 64%) was administered questionnaires to assess their perception of the adequacy of, and satisfaction with, the quality of nutrition instructions, as well as the value they placed on nutrition in medical training. They also indicated the level of inclusion of selected nutrition skills in training and the services they (doctors) provided.

**Results:** Most respondents (84.4%) valued dietetics/nutrition in medical training (average – 40.6%, a lot – 43.8%). However, most were unsatisfied with both the quality (57.4%) and adequacy (52.7%) in training. Nine of ten dietetics/nutrition skills instructions were deemed ‘adequate’ by most respondents. Adequate skills included: interpreting signs and symptoms (78.5%), diagnosing nutrition related conditions (70.7%), physical examinations (62.9%), including nutrition/diet therapy in health maintenance (62.1%), and interviewing patients (60.5%). Between 15% and 57% of respondents reported absent/inadequate instructions in these areas with the majority identifying the recording of nutrition data (56.6%). Of six services reported, most doctors offered written referral (88.1%) but written diet prescriptions (18.9%) and individualized diet plans (26.4%) were amongst the services least provided.

**Conclusion:** Although valued by most respondents, the overall adequacy and quality of the dietetics/nutrition content were deemed unsatisfactory. Despite reporting adequate exposure to most nutrition skills, related services offered by doctors were limited.

**(O – 04)**

**Intrathecal magnesium for postoperative analgesia: a randomized, controlled study in patients undergoing elective orthopaedic surgery at the Kingston Public Hospital**

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**Objective:** To determine if the addition of intrathecal magnesium sulphate will improve postoperative pain relief and decrease opioid consumption in patients undergoing elective orthopaedic surgery.

**Methods:** A single centre, randomized controlled trial was conducted to compare the quality of postoperative analgesia in patients that underwent elective orthopaedic surgery under spinal anaesthesia. With a power of 80 and  $p$ -value of  $< 0.05$ , a sample size of at least 18 patients in each group was calculated. Thirty-nine patients were randomized, 19 in the control and 20 in the test group. All patients received a standardized protocol for spinal anaesthesia while patients in the test group also received adjuvant intrathecal magnesium sulphate. Pain scores were evaluated using the Numerical Rating Scale (NRS). Total opioid consumption and side effects up to 48 hours post operatively were recorded. Data storage and statistical analysis was performed using SPSS version 18.0.

**Results:** Total analgesic consumption was significantly greater in the test group ( $320 \pm 130.9$  mg pethidine compared to  $207 \pm 104.4$  mg;  $p = 0.04$ ). However, patients in the test group had statistically significant lower pain scores on postoperative day 1 (median  $\pm$  IQ range,  $3 \pm 2$  vs  $5 \pm 4$ ;  $p = 0.035$ ). The two groups did not differ significantly in terms of characteristics of the spinal block, intra and post-operative side effects or the time to first analgesic requirement.

**Conclusion:** Although safe to use, adjuvant intrathecal magnesium sulphate did not decrease the requirement for opioid consumption postoperatively and its routine use in patients undergoing elective orthopaedic surgery is therefore not recommended.

**(O – 05)**

**Investigating the role of sleep duration and TV time on infant overweight/obesity: a cross-sectional study of Caribbean children**

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**Objective:** To examine the association of infant sleep duration and TV time with overweight/obesity at one year of age.

**Methods:** A total of 380 mothers of children from Jamaica, Antigua and St Lucia from a parenting intervention study were interviewed when their children were approximately one year old. They reported the amount of time their children slept and spent in front of a television in a 24-hour period. Weight and length at one year from clinic records were used to determine the infants' body mass index (BMI) Z-scores. Those with a Z-score  $\geq +1$  were classified as overweight/obese. Multilevel linear and logistic regressions were used to investigate the relationship between hours of sleep and TV time on infant BMI.

**Results:** Mothers reported that their children slept an average of 12 hours. The median hours of TV time [25<sup>th</sup>–75<sup>th</sup> percentiles] was highest in Jamaica (8.25 [3.5–11.5]) and lowest in St Lucia (2.0 [0–11]);  $p \leq 0.01$ . Increased TV time was associated with reduced sleep time ( $p < 0.01$ ). The prevalence of overweight/obesity was 35.4% in Antigua, 28.6% in Jamaica and 25.7% in St Lucia ( $p = 0.32$ ) and lowest in the children in the highest sleep duration quartile. On univariate logistic regression analysis, duration of sleep adjusted for birthweight was inversely associated with odds of overweight/obesity ( $\beta = -0.14$ ; 95% CI = -0.28, -0.01) and remained unchanged after adjusting for maternal education, maternal weight, maternal occupation and socio-economic status. TV time was not associated with overweight/obesity.

**Conclusions:** Shortened sleep duration may be a risk factor for increased BMI in Caribbean infants.

#### (O – 06)

##### **Misalignment of perceived weight with actual body mass index in The Bahamas**

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**Objectives:** To assess the correspondence of weight perception versus actual body mass index (BMI) category.

**Methods:** A prospective case notes review of adults in an internal medicine practice was done from April 2007 to May 2008. Quantitative analysis used a current version of the Statistical Package for the Social Sciences.

**Results:** Of 674 patients, 64.5% were female. Age was not statistically significantly different from males; overall the mean age was  $54.1 \pm 14.7$  years; 98.4% of 674 reported their age. Despite gender ( $p = 0.23$ ), 8.7% claimed "obesity", 45.2% "overweight", 1.1% "big boned", 43.3% "normal" and 1.7% "underweight". Mean BMI was  $30.4 \pm 6.8$  kg/m<sup>2</sup> and was unrelated to gender or age; 40.6% of the

variance in participants' actual BMI was explained by self-perceived BMI ( $r_{sp} = -0.637$ ,  $p < 0.001$ ,  $n = 609$ ). Of 53 morbidly obese, 32.2% claimed obesity, 58.5% overweight, 1.9% big boned and 7.5% normal. Of 230 obese, 11.3% claimed obesity, 70.0% overweight, 1.3% big boned and 17.4% normal weight. Of 174 overweight, 2.9% claimed obesity, 41.4% overweight, 1.7% big boned and 54.0% normal. Of 145 with normal BMI, 11.0% said overweight, 83.5% normal and 5.5% underweight. Of seven underweight, 14.3% claimed obesity, 71.4% claimed normal weight, 14.3% underweight. The mean waist circumference for males was  $40.1 \pm 0.4$  inches and  $37.1 \pm 0.3$  inches for females ( $p < 0.001$ ).

**Conclusions:** Patients predominantly underestimated BMI. A significant number was in fact overweight, obese or morbidly obese.

#### (PO – 01)

##### **The impact of high tempo music on walking time in sedentary university students**

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**Background:** Previous studies have examined how music affected speed, mood, perception and heart rate of subjects performing physical activities like cycling, aerobics and work tasks with variable results.

**Objective:** This study examined how high tempo music would affect time to perform a 1000 m/1500 m walk.

**Method:** Subjects who led a sedentary lifestyle, were over 18 years of age and attended The University of the West Indies (UWI), Mona campus, were recruited for the study.

They were required to complete a 1500 m walk on two separate occasions, once walking while listening to high tempo music (135.11 bpm) and the other without music. They were timed at the 1000 m mark, as well as the end of the 1500 m.

**Results:** Of the 50 students who participated, 18 were male and 32 were female. Their ages ranged from 19 to 30 years old. The data analysis for 1000 m revealed that students had a longer walking time without music ( $9.49 \pm 1.14$  minutes) than while listening to music ( $9.21 \pm 0.91$  minutes),  $p = 0.0001$ , and showed that the participants completed the 1500 m walk in a shorter time when listening to high tempo music ( $13.85 \pm 1.51$  minutes) than when they were walking without music ( $14.27 \pm 1.62$  minutes). In both instances, there was statistical significance ( $p < 0.005$ ).

**Conclusion:** High tempo music improved walk time, and hence high tempo music may be used to improve performance and participation in endurance exercise.