Young Researchers

Chairpersons: M Fredericks, M Thame

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Reversing Type 2 Diabetes in the Caribbean: Preliminary findings from a feasibility study in Barbados

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Objective: In a high proportion of persons recently diagnosed with Type 2 diabetes, a short (2–3 months) very low calorie diet is able to restore normal glucose and insulin metabolism. The objective of this study is to determine the feasibility of this approach in Barbados.
Subjects and Methods: Twenty-five individuals aged 20 to 69 years with Type 2 diabetes diagnosed within the past six years, not on insulin, and body mass index (BMI) > 27 $kg.m^{-2}$ were recruited. Hypoglycaemic medication was stopped on commencement of the eight-week liquid (760 calorie) diet, during which participants were assessed weekly. Findings from the liquid diet phase and the following three months are presented.
Results: The study participants comprised 10 men and 15 women (mean age 48 years, range 26–68 years). Mean (SD, range) BMI was 34.2 $kg.m^{-2}$ (6.0, 27.0–52.8) and fasting plasma glucose (FPG) was 9.2 $mmol.l^{-1}$ (2.2, 6.7–14.6). Over the eight-week intervention, mean weight loss was 10.1 kg (4.7, 1.5–20.8) and waist circumference loss 10.9 cm (4.0, 5.1–20.8). Fasting plasma glucose fell by 2.2 $mmol.l^{-1}$ (range 1.5–7.9). At eight weeks, FPG was < 7 $mmol.l^{-1}$, the diagnostic cut point for diabetes, in 15 participants compared to three at baseline ($p = 0.004$). At three months post liquid diet, 17 had FPG < 7 $mmol.l^{-1}$ (still off medication).
Conclusion: There was substantial weight loss and fall in FPG in the majority of participants, sustained at three months follow-up. Data on changes in pancreatic function are being analysed. These findings will inform a larger, pragmatic, multi-centre Caribbean trial.

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The efficacy of premarin *versus* ketoconazole on prostate-specific antigen responses in castrate-resistant prostate cancer in Jamaica

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Objectives: Premarin and ketoconazole are affordable secondary hormonal options available for castrate-resistant prostate cancer (CRPC) in Jamaica. The aim of this study was to compare the relative efficacy of both drugs to decrease prostate-specific antigen (PSA) in CRPC in a population of patients of predominantly African descent.
Subjects and Methods: This study retrospectively identified patients with CRPC that presented to the University Hospital of the West Indies (January 1, 2009–December 31, 2013) and patients from a private urology clinic (November 2, 2005–June 3, 2015). The primary endpoint was to identify the proportion of patients with a decline of ≥ 50% in PSA level after treatment. The relative efficacy was assessed by the time to progression (TTP), an increase in PSA of 25% above nadir with PSA progression defined by Prostate Cancer Clinical Trials Working Group 2 criteria.
Results: Thirty-five patients diagnosed with CRPC were identified; 32 initially treated with premarin and three with ketoconazole. Nine of the patients initially on premarin were crossed over to the ketoconazole treatment group, bringing to twelve the patients treated with ketoconazole. Decline in PSA of ≥ 50% was observed in 43.8% (14 of 32) and 25% (3 of 12) of patients on premarin and ketoconazole, respectively. The median (95% CI) TTP for patients treated with premarin was 24.00 (19.28, 28.724) months and ketoconazole was 13.54 (1.66, 25.41) months with no statistically significant difference between the groups ($p = 0.107$; log rank test).
Conclusion: The study did not identify differences in the relative efficacy between premarin and ketoconazole in treating patients with CRPC.

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Analysing the HIV care cascade: A site-level examination of viral load suppression in Kingston, Jamaica

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Objective: To analyse the HIV care cascade at the site level at the University Hospital of the West Indies, Kingston, Jamaica.
Subjects and Methods: This was a retrospective analysis of the national HIV treatment database for all entries between the years 2010 and 2013 identifying the key steps in the HIV care cascade with an increased focus on parameters influencing viral load suppression. Proportions by classic cascade denominator and new denominators were calculated. Equality of proportions, with corresponding *p*-values and confidence intervals, was used to assess cascade step differences.
Results: Total enrolment in the clinic increased over the period (from 1206 to 1472 patients), as did number of patients receiving antiretroviral therapy [ART] (from 879 to 1199). Using the classic denominator approach, significant increases were seen for patients on ART (8.4%, 95% CI 0.053, 0.127) and significant declines were seen in viral load samples collected (-5.1%, 95% CI -0.099, -0.001) and viral load results returned (-12.1%, 95% CI -0.164, -0.056). No significant changes were identified in patients engaged in care (p = 0.885) or viral load suppression (p = 0.124). New denominator analysis showed significant changes in patients on ART engaged in care, -9.4% (95% CI -0.116, -0.072), as well as viral load suppression for patients on ART, 7.9% (95% CI 0.009, 0.148).
Conclusion: Site-level data can increase the detail included in the HIV care cascade and avoid limitations of the classic cascade. Site-level analysis can provide greater insight into the factors affecting patient outcomes and furnish the required data for tailoring and monitoring of future interventions.

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Anaemia in young children living in the Surinamese interior: The influence of age, nutritional status and ethnicity

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Objective: Anaemia may lead to poor motor development and impaired neurocognitive function and affects 43% of children 1–5 years worldwide. Currently, there is little information on the prevalence of anaemia in young children living in the interior of Suriname. This study investigates the prevalence of anaemia in these children and the influence of the associated factors of age, nutritional status and ethnicity.
Subjects and Methods: Haemoglobin levels and anthropometric measurements of children aged 1–5 years were collected, after informed consent was provided, in three different interior regions of Suriname in the period September–October 2015. World Health Organization (WHO) standards for anaemia and underweight assessment were applied. Logistic regression models were computed to examine independent associations between the anaemic and non-anaemic groups and were expressed as odds ratios (OR) with 95% confidence intervals (95% CI).
Results: Six hundred and six children were included: 330 (55%) very young (1–3 years) and 276 older (4–5 years). Younger age was associated with anaemia (OR = 2.45; 95% CI 1.75, 3.45). Anaemia was less prevalent in Amerindian than in Maroon children (OR = 0.51; 95% CI 0.34, 0.76). Haemoglobin level was not influenced by nutritional status.
Conclusions: The prevalence of anaemia in children 1–5 years old living in Suriname's interior is high (55%) compared to similar aged children in Latin America and the Caribbean (4–45%). Children 1–3 years of age were more affected than 4–5-year old children, as were Maroon children compared to Amerindian children. Nutritional status was not of influence. These findings call for further studies and may support adaptation of anaemia prevention and control programmes in young children in Suriname.