

## Internal Medicine, Sickle Cell Disease and HIV

Chair: T Thompson and T Clarke

### (O – 01)

#### A review of autoimmune hepatitis at the University Hospital of the West Indies over a ten-year period

*D Reid, MG Lee, M Mills, B Hanchard, MF Smikle  
Departments of Medicine, Pathology and Microbiology,  
University Hospital of the West Indies, Kingston 7, Jamaica*

**Objective:** This study determined the demographics, clinical features, pathological and immunological data and treatment outcomes of patients with autoimmune hepatitis (AIH) over a ten-year period at the University Hospital of the West Indies (UHWI).

**Methods:** A retrospective review of all cases of autoimmune hepatitis at the UHWI between 2002 and 2012 was performed. The clinical features, histological findings, laboratory data and outcome were analysed. Autoimmune hepatitis diagnosis was confirmed by applying the simplified diagnostic criteria (2008) of the International Autoimmune Hepatitis Group.

**Results:** Of the 47 cases studied, 11 (23.4%) were male and 36 (76.6%) were female (female to male ratio was 3.27 to 1). The mean age at diagnosis was 30.7 (median 25) years.

The paediatric population made up 27.7% of the cases with most of these cases diagnosed between ages nine to 13 years. Clinical presentation varied from asymptomatic disease to acute fulminant liver failure, jaundice (68.1%), splenomegaly (44.7%), anaemia (57.4%), ascites (36.2%), oesophageal varices (36.2%) and hepatomegaly (4.3%). Twenty-seven (57.4%) cases were antinuclear antibodies (ANA) positive, 38 (80.9%) were smooth muscle antibody (SMA) positive and 6.4% antimitochondrial antibodies (AMA) positive. Liver biopsy was performed in 16 (34%) and cirrhosis was present in one-third. There were six (12.1%) deaths, with the predominant cause being fulminant hepatic failure.

**Conclusion:** Autoimmune hepatitis is relatively uncommon and predominately affects females; however, it may be under-diagnosed in Jamaica. The overall prognosis of treated autoimmune hepatitis is good. Further studies are needed on a more wide scale basis to determine the prevalence.

### (O – 02)

#### Assessing baseline disease knowledge among Jamaican adolescents with sickle cell disease

*M Grindley<sup>1</sup>, A Barton-Gooden<sup>2</sup>, M Asnani<sup>1</sup>, JM Knight-Madden<sup>1</sup>*

*<sup>1</sup>Sickle Cell Unit, Tropical Medicine Research Institute and  
<sup>2</sup>The UWI School of Nursing, The University of the West Indies, Kingston 7, Jamaica*

**Objective:** To determine baseline knowledge regarding heritability and treatment of sickle cell disease (SCD) among affected adolescents in Kingston, Jamaica, immediately prior to utilizing an educational intervention.

**Methods:** A longitudinal randomized controlled intervention study was initiated at the Sickle Cell Unit (SCU) in Kingston, Jamaica, among 150 adolescents (ages 13–19 years) attending for routine health maintenance check-ups. Knowledge data regarding the heritability and treatment of SCD from the questionnaire administered prior to the interventions were analysed using SPSS version 12 for Windows with correlation, Chi-squared and Mann Whitney U tests.

**Results:** There were 76 girls and 74 boys with mean age  $16.1 \pm 1.9$  years. Most had homozygous SS disease (77%), urban residency (68%), post-primary education (64%), visited the SCU at least annually (93%) and had less than one episode of painful crisis monthly (69%). Mean knowledge score was  $14.3 \pm 4.3$  (range 5–23). The majority knew that the disease was inherited from both parents (75%), that the trait is diagnosed by a blood test (60%) and that SCD is not an infection (89%) or contagious (95%). However, only 43% knew that SCD cannot be cured by antibiotics or transfusions and 40% were aware of common SCD complications. More questions were correctly answered by older than younger adolescents ( $r^2 = 0.41, p < 0.001$ ), those with post-primary education than those with only primary education ( $z = -4, p < 0.001$ ) and urban compared with rural dwellers ( $z = -2.2, p = 0.03$ ).

**Conclusions:** Adolescents with SCD were moderately knowledgeable of the disease cause and diagnosis, but had deficient knowledge about complications and possibilities of a cure.

**(O – 03)**

**Transcranial Doppler ultrasonography in children with sickle cell disease: the Jamaican experience**

*N Morrison-Levy<sup>1</sup>, A Rankine-Mullings<sup>1</sup>, M Reid<sup>1</sup>, D Soares<sup>2</sup>, L King<sup>1</sup>, K Aldred<sup>1</sup>, M Wisdom-Phipps<sup>1</sup>, T Baker<sup>1</sup>, JM Knight-Madden<sup>1</sup>*

<sup>1</sup>Tropical Medicine Research Institute and <sup>2</sup>Department of Surgery, Radiology, Anaesthesia and Intensive Care, The University of the West Indies, Kingston 7, Jamaica

**Objective:** To determine whether there was an association between transcranial Doppler (TCD) velocities and haemoglobin and/or oxygen saturation in children with sickle cell disease (SCD). The effectiveness of hydroxyurea (HU) in children with abnormal TCD velocities was also assessed.

**Method:** During a retrospective review of medical records of all children who had TCD studies done between 2011 and 2013 and who were not part of a previous trial, haemoglobin, oxygen saturation and TCD values were extracted. Maximum TCD values were categorized as normal (< 170 cm/s), conditional (170–199 cm/s) and abnormal ( $\geq$  200 cm/s). Regression analysis was done.

**Results:** Among the 326 patients eligible for the study, there were 385 scans, 50% of the patients were males and 96% had haemoglobin HbSS genotype. The mean age at initial TCD was 7.54 ( $\pm$  2.69) years. The mean initial timed maximum velocity was 142.11  $\pm$  28.46 cm/s. Transcranial Doppler velocities were normal in 86% of the patients, conditional in 8.5% and abnormal in 5.5%. High TCD velocity was independently associated with low haemoglobin and oxygen saturation. Of the 18 patients with abnormal TCD values, three consented to start HU. None of these three patients experienced HU toxicity. One patient with abnormal TCD velocity achieved normal TCD on HU, one patient had persistently abnormal, though lower, TCD velocity after six months of HU and the third discontinued therapy.

**Conclusion:** Children with low haemoglobin and/or oxygen saturation are more likely to have higher TCD Velocities. There was low uptake of HU therapy, but no associated toxicity.

**(O – 04)**

**HIV-1 resistance in antiretroviral experienced patients in the largest outpatient treatment facility in Jamaica**

*G Barrow, T Hylton-Kong, N Rodrigues, Y Yamamura, JP Figueroa*  
Centre for HIV/AIDS Research, Education and Services (CHARES), Department of Medicine, University Hospital of the West Indies, Kingston 7, Jamaica

**Objective:** To determine the prevalence and risk factors for human immunodeficiency virus-1 (HIV-1) resistance in

antiretroviral therapy (ART) experienced patients receiving care at the Comprehensive Health Centre in Kingston, Jamaica.

**Methods:** A cross-sectional survey was performed between January 1 and April 30, 2011 on adults 18 years and older. Patients' dockets were reviewed, blood samples taken for viral load and CD4 count, and a semi-structured questionnaire administered. Both univariate and multivariate analyses were performed.

**Results:** There were 142 consecutive treatment experienced patients enrolled. Viral load assessments performed before genotypic analysis revealed 70/107 (65.4%) had elevated viral loads above the limit of detection (above 40 copies/mL). However, of these, only 51/70 (72.8%) were amplifiable and 42/51 (82.3%; 95% CI 71.9, 92.7) had resistance associated mutations. Clinically significant mutations were most commonly found related to non-nucleoside reverse-transcriptase inhibitors (NNRTIs), 38/42 (90.4%), followed by nucleoside reverse transcriptase inhibitors (NRTIs), 30/42 (71.4%) and protease inhibitors (PIs), 2/42 (4.8%). The proportion of cases with clinically significant mutations that had been exposed to ART for less than one year was 11/42 (26.2%). On multivariate analysis age, gender, initial or most recent CD4 counts and duration of ART were not significantly associated with HIV-1 resistance; however, a short-term (seven day) composite score of self-reported adherence was inversely associated ( $p = 0.01$ ).

**Conclusion:** Human immunodeficiency virus-1 resistance to ART is an important reason for treatment failure. Improved measures of adherence and increased access to HIV-1 genotype testing will be useful in addressing this emerging phenomenon.

**(O – 05)**

**“A secret is not a secret if you tell somebody else”:  
exploration of factors affecting HIV disclosure in intimate relationships**

*S Matthews, S Jarrett, G Barrow*  
The University of the West Indies, Kingston 7, Jamaica

**Objective:** Human immunodeficiency virus (HIV) status disclosure is linked to adherence to antiretrovirals, improved psychological well-being of persons living with HIV (PLHIV), improved intimacy and support between intimate partners, and reducing risky sexual behaviour. The current study was undertaken to explore the external (relationship) and internal (emotional) factors affecting HIV status disclosure among PLHIV in established intimate relationships.

**Methods:** Qualitative interviews were conducted with a convenience sample of 15 individuals (five males and 10 females) from an HIV clinic in Kingston, Jamaica. All par-

ticipants had been diagnosed with HIV for at least one year and have had to decide whether or not to disclose their HIV status to a main partner.

**Results:** Relationships ranged from six months to 17 years and 13 of the 15 participants had disclosed to a main partner. Participants reported the following as relationship factors affecting disclosure: partner temperament and interaction style, expectations of negative disclosure outcomes, feelings of forced disclosure and negotiating partner's desire for unprotected sexual interactions. The emotional factors identified were desire to protect partner, internal framework created by prior disclosure experiences, personal integrity and disclosure reciprocity.

**Conclusions:** Relationship factors and situational factors were prominent and primarily negative during the disclosure process, which highlights the environment of disclosure as integral to facilitating the act of disclosure. The focus on contextual variables further calls to attention the social climate within which PLHIV face disclosure decisions. These findings can guide healthcare workers in preparing PLHIV to contend with fears that prevent appropriate disclosure.

#### (O – 06)

##### **A short-term project of routine, provider-initiated, HIV testing and counselling in the Department of Medicine, University Hospital of the West Indies: success and challenges**

*G Barrow, N Palmer-Mitchell, EN Barton, MG Lee  
Centre for HIV/AIDS, Research, Education and Services (CHARES), Department of Medicine,  
University Hospital of the West Indies, Kingston 7, Jamaica*

**Objective:** To investigate the potential impact and challenges of human immunodeficiency virus (HIV) provider-initiated testing and counselling (PITC) of adults aged over 18 years within the Department of Medicine at the University Hospital of the West Indies (UHWI) between September 1 and November 30, 2013.

**Methods:** A three-month analysis of routine HIV testing and counselling was performed. An opt-out, provider-initiated approach was utilized. A project-based intervention was designed to assess the capture (diagnosis and linkage to care) of HIV positive cases and to identify potential challenges to the expansion and long-term continuation of this intervention.

**Results:** Over 50 healthcare workers were trained in HIV PITC. Cadres of healthcare workers included medical doctors, public health and ward nurses and administrators. A total of 1485 patients were invited to participate and 1203 (81.0%) agreed to participate with 157 (10.6%) opting out.

A total of 837/5355 (15.6%) inpatients and 247/1108 (22.3%) outpatients were captured over the three-month period. The prevalence of HIV identified was 1.54 (95%

CI), the median age of HIV positive cases was 43.0 (IQR 26.0–57.0) years with a male:female distribution of 1.0:0.9. Of the nine incident cases, eight (88.8%) were linked to care. On average, initial CD4 analyses were 325.1 cells/mm<sup>3</sup> (range 74–551), performed 9.5 days from the time of diagnosis.

**Conclusion:** Routine HIV testing and counselling at the UHWI represents an excellent point for this intervention. However, achieving its full potential will require greater patient capture through interdepartmental collaboration and routinizing of services.

#### (O – 07)

##### **Maternal determinants of infant feeding styles in Caribbean women**

*AS Wright, MK Tulloch-Reid, SM Chang, SP Walker  
Epidemiology Research Unit, Tropical Medicine Research Institute,  
The University of the West Indies, Kingston 7, Jamaica*

**Objective:** Non-responsive (restrictive, indulgent, uninvolved and forceful) compared to responsive feeding of infants may increase the risk of childhood obesity. We investigated the effects of maternal depression and receptive vocabulary on infant feeding styles in a cohort of Caribbean mothers.

**Methods:** Data from mothers involved in a parenting intervention study conducted in three Caribbean islands were analysed. Sociodemographic data was collected at recruitment. Maternal depression was assessed using the Center for Epidemiologic Studies (CES)-Depression Scale questionnaire and vocabulary with the Peabody Picture Vocabulary Test (PPVT-4) at recruitment. A feeding questionnaire was used to assess caregiver feeding styles when infants were 12 months old. Factor analysis was used to identify the feeding styles. Associations between maternal characteristics and infant feeding styles were assessed using multilevel mixed model linear regression accounting for country and clinic.

**Results:** Data from 405 mothers (mean age 25.82 ± 7.01 years, 56% high school graduates, 33% unemployed) were analysed. After adjusting for maternal age, socio-economic status and education, higher depression scores were associated with more uninvolved ( $\beta = 0.40$ , 95% CI = 0.16, 0.64), restrictive ( $\beta = 0.34$ , 95% CI = 0.10, 0.58) and forceful ( $\beta = 0.29$ , 95% CI = 0.06, 0.53) feeding styles and inversely related to responsive feeding ( $\beta = -0.29$ , 95% CI = -0.53, -0.05). Higher vocabulary scores were inversely related to uninvolved ( $\beta = -0.31$ ; 95%CI = -0.57, -0.06), restrictive ( $\beta = -0.26$ ; 95% CI = -0.51, -0.02), indulgent ( $\beta = -0.51$ ; 95% CI = -0.75, -0.27) and forceful ( $\beta = -0.52$ ; 95% CI = -0.77, -0.27) feeding styles. However, no association was seen between vocabulary and responsive feeding.

**Conclusion:** Maternal vocabulary and depression were important determinants of non-responsive feeding styles. Identifying depressed mothers and improving maternal education may be important approaches to tackling childhood obesity.

(PO – 01)

**Rapid diagnosis of enteric adenovirus using a commercial enzyme immunoassay at The University of the West Indies**

*B Josepht<sup>1</sup>, D Taylor<sup>2</sup>, J Carr<sup>1</sup>, W Waugh<sup>2</sup>, V Morris<sup>1</sup>, G Mignott<sup>1</sup>, IE Vickers<sup>2</sup>*

*<sup>1</sup>The University of Technology, Jamaica and <sup>2</sup>Department of Microbiology,*

*The University of the West Indies, Kingston 7, Jamaica*

**Objective:** To investigate the prevalence of enteric adenovirus infections using a rapid commercial enzyme-immunoassay (EIA) for the detection of human adenovirus serotype 40/41 antigen.

**Methods:** This study was conducted using a cross-sectional design with random selection of 46 stool samples from a

total of 185 received over a six-month period from March to November, 2011. The Premier Adenoclone EIA (Meridian Biosciences, USA) was used to detect adenovirus antigen. The Premier Adenoclone kit affords a rapid same day availability of results when compared to tissue culture.

**Results:** The stool samples were obtained from 46% (21/46) females (median age 16 months; range 2 weeks to 10 years) and 54% (25/46) males (median age 18 months; range 1 month to 25 years). Thirteen per cent (6/46) of patients presented with gastroenteritis while 35% (16/46) were diagnosed with respiratory tract infections. The prevalence of adenovirus serotype 40/41 was 6.5% (3/46). The patients that had positive stool samples included a 17-month old infant, a nine-year old child with sickle cell disease and a 25-year old male patient with HIV-infection.

**Conclusions:** The study confirms the prevalence of adenovirus infection in Jamaica as 6.5%. Although this study was limited by its small sample size, the prevalence obtained is consistent with the reported prevalence (2–31%) of enteric adenovirus infection in developing countries. A larger study is recommended to evaluate the performance of the Premier Adenoclone EIA against the gold standard tissue culture method.