**Poster symposium**

### PS-078 CLINICAL RELEVANCE OF GAMMA-GLUTAMYL TRANSPEPTIDASE IN CHILDHOOD OBESITY

**Background and aims** Metabolic risk leads to severe comorbidities in obesity. We evaluate the relationship between the values of gamma-glutamyl transpeptidase (GGT), a marker of hepatic involvement, and cardio metabolic risk factors in obese children.

**Methods** A prospective cross-sectional study of 147 children (aged 7 to 16 years) was carried out. Ninety-five children were obese with a body mass index standard deviation score (SDS-BMI) ≥2 and 52 children were normal weight. Patients with endocrine disease or syndromic obesity were excluded. We have analysed clinical parameters of adiposity (fat mass by bioelectrical impedance, waist and hip circumference), blood pressure, and classical biochemical parameters indicative of metabolic risk (lipid profile, glucose and insulin). Additionally, novel parameters related to metabolic risk such as uric acid, retinol binding protein (RBP4), cystatinC, homocysteine, thyrotropin, ultrasensitive C-reactive protein (CRP) and GGT were also determined. Statistical analysis was made ANCOVA test and Pearson partial correlation adjusting for gender, age, Tanner stage, and BMI.

**Results** GGT was higher in the children with SDS-BMI >4 with respect children with SDS-BMI between 2 and 4(16.3 ± 5.8 vs 18.4 ± 8.8 IU/L, p = 0.025). Both groups were statistically significant with respect normal weight (12.2 ± 2.9 IU/L, p < 0.0001 and p < 0.001 respectively). GGT was correlated with SDS-BMI (p < 0.0001), waist circumference (p < 0.001), percentage of fat mass (p < 0.01), SDS of systolic blood pressure (p < 0.010), total cholesterol (p < 0.0001), LDL cholesterol (p < 0.0001), triglycerides (p < 0.0001), RBP4 (p < 0.047), thyrotropin (p < 0.019) and CRP (p < 0.044).

**Conclusion** GGT is a marker associated with several metabolic risk factors, which highlights the importance of considering hepatic impairment as a component of this syndrome.

### PS-079 WITHDRAWN

### PS-080 PREVALENCE OF OVERWEIGHT IN PAEDIATRIC INFLAMMATORY BOWEL DISEASE IN SAUDI ARABIA

**Background and aim** Excess weight in inflammatory bowel disease (IBD) represents an additional morbidity, and yet the prevalence has been rarely reported. The aim of this report is to establish the prevalence of overweight in children with IBD in the Kingdom of Saudi Arabia (KSA).

**Methods** Data from a cohort of children in the KSA diagnosed with IBD were analysed retrospectively. Growth parameters were recorded at diagnosis and body mass index (BMI) was calculated using the formula (weight/height²). The KSA charts were used as reference. Excess weight categories were defined as overweight (BMI-for age ≥85th to <95th), obesity ≥95th to <97th), and severe obesity ≥97th percentile. Chi-square test was used and p-value of <0.05 was considered significant.

**Results** There were 417 children from birth to 18 years of age, including 133 ulcerative colitis (UC) (32%), and 284 Crohn disease (CD) (68%). The prevalence of excess weight was 12/133 (9%) in UC and 23/284 (8.1%) in CD (p = 0.063) much lower than in Western reports. However, the more common prevalence of excess weight in UC than CD, although not significant (p = 0.063), was similar to patterns from other population. The commonest form of excess weight was overweight 20/35 (57%), followed by obesity 9/35 (26%), and severe obesity 6/35 (17%).

**Conclusion** The pattern of excess weight in KSA children with IBD is similar to Western literature. However, a much lower prevalence is demonstrated. Identification of factors associated with the low prevalence of overweight and obesity is needed.
Conclusions The experimental results showed that probiotics effectively attenuated Salmonella-induced intestinal inflammation in human intestinal CaCO2 cells via TGF-β1/Smads and TGF-β1/miR21 signalling pathway.

PS-082 COEXISTENCE OF COELIAC DISEASE AND ATOPIC DERMATITIS

Q Uibo, 1 K Res, 1 A Annus, 2 U Putnik, 3 K Luts, 3 J Uibo. 1 Department of Pediatrics, Children’s Clinic of Tartu University Hospital, Tartu, Estonia; 2 Department of Immunology, Institute of Biomedicine and Translational Medicine, Tartu, Estonia; 3 Department of Pediatrics, Tallinn Children’s Hospital, Tallinn, Estonia

10.1136/archdischild-2014-307384.378

Coeliac disease (CD) is an autoimmune disorder of the small intestine with highly variable clinical presentation, frequently associated with various diseases and conditions, autoimmune and non-autoimmune.

We aimed to study the association of childhood CD and atopnic dermatitis (AD) in Estonia studying the frequency of AD cases in newly diagnosed CD patients and CD cases in active AD.

Methods We investigated 152 consecutive children with CD (45% boys, mean age 2.3 years) and 351 consecutive children with AD (57% boys, mean age 5.8 years). CD diagnosis was made according to the ESPGHAN diagnostic criteria and AD was diagnosed by UK Working Party’s Diagnostic Criteria for AD.

Results Among CD patients, AD was diagnosed in 8 (5.3%) children, and in the AD group CD was confirmed in 5 (1.4%) patients. All patients with both diseases had histologically characterised small intestinal damage as Marsh IIIa-IIlc stages, two of them had silent CD. The risk for developing CD was revealed to be four times higher in AD patients (OR = 4.18; 95% CI: 1.12–15.64) when compared to general children population in Estonia (frequency 0.34%; Lillêmäe et al., Eur J Gastroent Hepatol 2012). Two patients with CD and AD had no symptoms to suspect CD, in spite of extensive histological changes in small intestinal mucosa.

Conclusions CD and AD coexist more frequently than could be expected. Therefore, our study emphasises the need for evaluating the cost-effectiveness for CD screening of AD patients along with other immune-mediated diseases in order to diagnose CD in time.

PS-083 WITHDRAWN

PS-084 DIFFERENTIAL REGULATION OF INTERLEUKIN-8 AND HUMAN BETA-DEFENSIN-2 IN INTESTINAL EPITHELIAL CELLS TO PSUEDOMONAS INFECTION

H Fu-Chen, Pediatrics, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University, Kaohsiung, Taiwan

10.1136/archdischild-2014-307384.379

Background and aims Pseudomonas aeruginosa (Paeruginosa), carries the highest case fatality rate of all gram-negative infections and antimicrobial therapy has not been demonstrated to improve clinical outcome. Moreover, the emergence of multidrug resistant P. aeruginosa has become a major concern in the hospital setting. Fever and diarrhoea were the2 most common initial symptoms in P. aeruginosa sepsis in previously healthy infants and children. This implied that intestinal epithelial cells (IECs) contacting with the pathogen may play an important role on innate immunity to Paeruginosa infection. Therefore, we aim to investigate the intestinal epithelial IL-8 and hBD-2 expression to P. aeruginosa infection and its regulators.

Methods We applied ELISA for IL-8 andhBD-2 protein secretion, RT-PCR for IL-8 and hBD-2 mRNA expression, Western blot for signal pathway as well as inhibitors and siRNA to investigate the involved proteins in P. aeruginosa-induced IL-8 and hBD-2 expression in SW480 cells.

Results We demonstrated after prolonged infection by P. aeruginosa, secreted IL-8 protein was suppressed but hBD-2 protein was enhanced though both mRNAs were increased in SW480 cells. Interactions between the PI3K/Akt pathway and ERK kinase result ultimately in post-transcriptional effects that decrease P. aeruginosa-induced IL-8 production while NOD1 protein is involved in Pseudomonas-induced hBD-2 expression in SW480 cells.

Conclusions P. aeruginosa induced pro inflammatory response and antimicrobial peptide in IECs. The antimicrobial peptide in IECs has been shown to continuously protect the host against prolonged infection while modulation of pro inflammatory response prevents the host from the detrimental effects of overwhelming inflammation.

Hematology and Oncology

PS-085 CLINICAL CHARACTERISTICS AND TIME TO DIAGNOSIS IN CHILDREN WITH SHWACHMAN DIAMOND SYNDROME (SDS)

S Sheik, 1 S Kinsey, 1 Puntis. 1 Department of Paediatrics, Leeds General Infirmary, Leeds, UK; 2 Department of Paediatric Haematology, Leeds General Infirmary, Leeds, UK; 3 Department of Paediatric Gastroenterology, Leeds General Infirmary, Leeds, UK

10.1136/archdischild-2014-307384.380

Shwachman Diamond syndrome (SDS) is a multisystem disorder with heterogeneous clinical presentation. We examined medical records of 11 patients (now age 9–30 years, with confirmed SBDS gene mutation) attending SDS multidisciplinary clinic in Leeds (UK) to understand their clinical characteristics, time to diagnosis and progression over time.

Results Seven children in our group had one affected SDS relative; all had variable presentation, severity and progression; genotype-phenotype correlation did not exist even within affected siblings in same family. Median age at initial presentation was 3 months (0–7 m) with median delay to clinical diagnosis at 17 months (2 m–12 yr). Failure to thrive or steatorrhea together accounted for initial concern in 81%. Most (7/11) had documented negative sweat test at an early age with proven exocrine pancreatic insufficiency (EPI) in 3/11, yet suspicion of SDS was not raised despite SDS being the second commonest cause of EPI after cystic fibrosis. The severity of symptoms at presentation and rate of progression influenced the recognition and suspicion of the condition.

Over time, all patients developed recurrent infections, haematological abnormalities, dental/skeletal abnormalities and neuro-psychological/ developmental issues. During follow up, growth and pancreatic insufficiency improved, bone marrow became dysplastic in 30% with decrease in the frequency/severity of