GP211 POSITIVE CORRELATION OF SERUM ALKALINE PHOSPHATASE AND SERUM ALANINE TRANSAMINASE WITH THE ABUNDANCE-BASED INDICES OF THE MICROBIOTA IN OBESE ADOLESCENTS

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Introduction Obesity is a multifactorial disease with genetic, psychological, nutritional, biochemical, and microbiological causes. In previous studies, obesity has been linked to a different composition of the gut microbiota. The gut microbiome composition might be described by several alpha diversity metrics: OTU (operational taxonomic unit) number, Chao1 and ACE (abundance-based coverage estimators), and Shannon and Simpson indices (richness and evenness estimators). On the other hand, recent studies demonstrate a correlation of elevated serum biochemical markers with obesity. Consequently, the linkage between biochemical markers and diversity indices of gut microbiome in obesity might be important and indicative. So, the aim of this study is to check correlation between alpha diversity metrics and obesity-associated metabolic risk factors, such as serum alanine transaminase (ALT) and serum alkaline phosphatase (AP), at patients with obesity and normal weight.

Methods Sixteen subjects were obese adolescents (BMI=33.07±4.03 kg/m²), 19 subjects were healthy adolescents (BMI=20.18±1.76 kg/m²). These two groups were comparable by ethnicity (100% participants are Caucasians), gender (20 males, 15 females), and age (mean age 14.7 ±1.69 years).

Metagenome sequencing of V3–V4 regions of 16S rDNA, raw data analysis, OTU clustering, species annotation, and estimation of alpha diversity indices were done by Novogene Company (China). Concentration of serum ALT and AP were measured using Mindray Automatic Biochemistry Analyzer. Data were analyzed using the STATISTICA 8.0 software package. Statistical significance was accepted at the p<0.05 level.

Results AP data from 11 obese patients, and 7 adolescents with normal weight were included in this study. ALT and OTU number, Chao1, ACE, Shannon and Simpson indices were measured for all respondents (n=35). The Wilcoxon-Mann-Whitney test didn't show significant differences between the obesity and control groups, despite the fact that alpha diversity metrics and AP were higher in the control group (p>0.05). However, ALT was higher, but not significant in the obesity group (p>0.05).

Spearman's rank correlation coefficient showed significant correlations for AP and ACE □ Chao1 (rs=0.93) in the obesity group, but not with Shannon and Simpson indices (rs=0.26). The strong positive correlation also were observed for AP and OTU number (rs=0.85). Either, we observed small, but significant correlations between ALT and ACE, Chao1 □ OTU number (rs=0.4). There were no significant relationships between ALT and AP with alpha diversity metrics in the control group (rs≤0.3).

Conclusion The study shows a positive relationship between alpha diversity metrics of intestinal microbiota and serum AP and ALT in adolescents with obesity.

GP212 22Q11 DELETION SYNDROME IN IRELAND – REVIEW OF MENTAL HEALTH NEEDS IN CHILDREN FROM A NEWLY ESTABLISHED CLINIC

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Background 22q11 Deletion Syndrome is a complex, multi-system disorder with a prevalence of 1 in 2000 to 4000 people. Affected children may present with a diverse range of medical conditions and they are extremely vulnerable to psychiatric illness throughout their lifespan. This population are widely known to be at risk of developing psychotic illness with 10% of adolescents and over 25% of adults with 22q developing psychotic disorders. Studies have also shown that up to 57.7% experience social anxiety and up to 50% are diagnosed with Autistic Spectrum Disorder.

Aims To review the mental health needs of children with 22qDS at the time of their first dedicated tertiary clinic review and establish if a dedicated clinic can identify and address unmet needs within this population.

Methods Retrospective audit of outcomes of all first clinic appointments since the establishment of the new dedicated 22qDS paediatric clinic from October 2017 to January 2019. Previous mental health service input along with referrals made were recorded.

Results In the first 14 months of the 22q11DS clinic 43 children were assessed. 11 children (26%) had been seen by mental health services previously. Of those, 5(45%) children had anxiety, 1(9%) ADHD, 1(9%) both anxiety and ADHD, 1(10%) both anxiety and autism, 2(%) not specified and 1(9%) had a normal assessment.

Overall 22(48%) children have been referred from the clinic for psychiatric input. 11(24%) have been seen to date with 55% of those seen having a diagnosis of anxiety and 27% a diagnosis of ADHD. A further 11(24%) children are currently waitlisted for assessment.

Conclusion Significant mental health needs were identified in this group of children. Early assessment and intervention to address these needs at an appropriate time in their development could prevent deterioration and use of crisis and acute services in this vulnerable population and help maintain well-being and quality of life for children and families.

GP213 THE EFFECT OF STRUCTURED PHYSICAL ACTIVITY ON SLEEP AND MENTAL HEALTH IN SEVERE AUTISTIC CHILDREN

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Introduction Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterizing deficits in social communication skills and restricted repertoire of interests, behaviors and atypical sensory reactivity (APA 2013). Children with ASD suffer from sleep problems, particularly insomnia, at a higher rate than typically developing children (Cortesi F et al, 2010). It is