Plenary

O1 FAECAL VOLATILE ORGANIC COMPOUNDS IN PAEDIATRIC INFLAMMATORY BOWEL DISEASE

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10.1136/flgastro-2021-bspghan.1

Faecal volatile organic compounds (VOCs) result from the metabolism of the intestinal mucosa, gut microbiota and the environment. Profiling of faecal VOCs in children with different IBD sub-types and disease distribution and activity may shed light on underlying disease mechanisms.

Method We assessed faecal VOCs by gas chromatography-mass spectrometry in a prospective, observational study of children with suspected inflammatory bowel disease (IBD) attending 3 specialist clinics. We tested whether the abundance of faecal VOCs differed according to IBD versus other gastrointestinal disorders, IBD subtype and response to treatment in IBD.

Results We characterised faecal VOCs in 132 children in whom IBD was diagnosed and 132 non-IBD controls. 162 (61.4%) were boys. Mean age was 12.2 years (SD 3.0). In total 214 (81.1%) were white, 35 (13.3%) were Asian and 15 (5.7%) of other ethnic background. There were 78 (29.5%) children with Crohn's disease (CD), 38 (14.4%) with ulcerative colitis (UC) and 16 (6.1%) IBD-unclassified. The most common diagnosis in controls was a functional gastrointestinal disorder.

The mean abundance of 16 VOCs was significantly lower in IBD than controls whereas phenol and propan-1-ol were higher in IBD ($p=0.001$). Some short chain fatty acids (butanoic, pentanoic and hexanoic acids) were lower in IBD than controls ($p<0.03$).

The two compounds that were more abundant in IBD than control (propan-1-ol and phenol) returned to control levels post-treatment (figure 1).

Within IBD, the subtype (CD versus colitis (UC and IBD-unclassified)) described a small amount of variation (3%, $p=0.006$), with three faecal VOCs (6-methylhept-5-en-2-one; benzaldehyde; 4-methylphenol) significantly different in abundance between CD and colitis (t-test, $p<0.05$).

Conclusion/interpretation Propan-1-ol and phenol, higher in abundance in IBD than controls and returning to control levels post-treatment, may indicate abnormal amino-acid metabolism in pre-treatment IBD; phenol may be pro-inflammatory. Further analysis of VOCs may provide insights into underlying disease mechanisms in paediatric IBD.

O2 LONG-TERM OUTCOMES OF PAEDIATRIC LIVER TRANSPLANTATION USING ORGAN DONATION AFTER CIRCULATORY DEATH (DCD); COMPARISON BETWEEN FULL AND REDUCED GRAFTS

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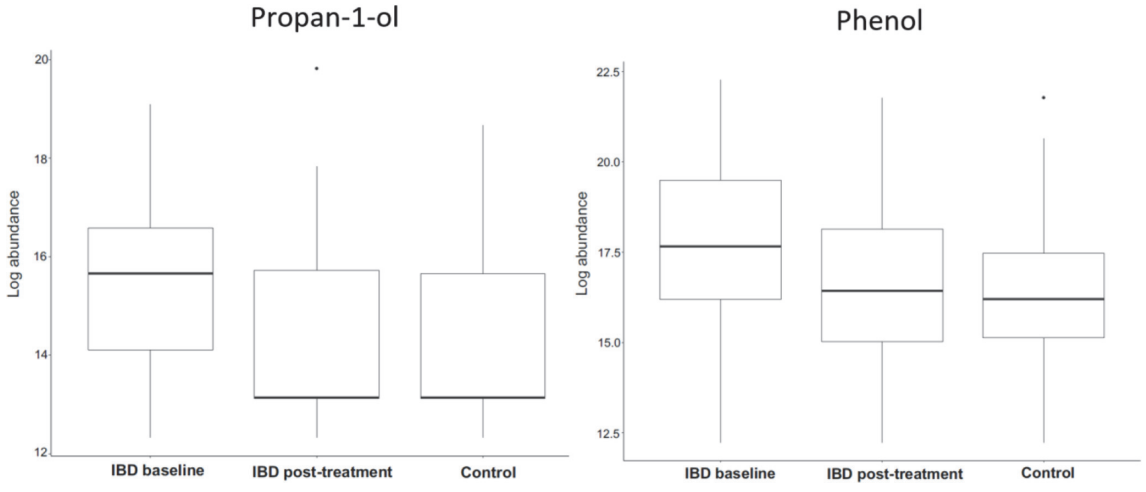
10.1136/flgastro-2021-bspghan.2

Background Increasing numbers of successful paediatric liver transplantation (PLT) with improved survival rates reaching 90%at 10 years resulted in more children being listed for PLT but this was not associated with matching expansion in graft pool resulting in graft shortage. Reports including our published early experience showed promising short and intermediate term outcomes from DCD grafts in children.

Aim To compare long-term outcomes of full size and reduced DCD grafts in terms of incidence of complications as well as survival of both recipients and grafts.

Methods This is a retrospective review of PLTs using DCD grafts. Patients were divided into those who received full or reduced grafts. Data was collected for comparison of pre-transplant recipient parameters, donor parameters, operative parameters, post-transplant recipient parameters and outcomes. Laboratory markers were checked at discharge, 1- and 5-years post-transplant.

Results 14 PLTs from DCD donors between 2005 and 2018 were identified; 9 full size and 5 reduced grafts. Donors of both groups were Maastricht category III donors. Functional warm ischemia time did not show significant difference while



Abstract O1 Figure 1 Box and whisker plots of propan-1-ol and phenol