Gastroduodenal

DUODENAL-JEJUNAL BYPASS LINER THERAPY (ENDOBARRIER®) CAUSES REDUCTIONS IN PLASMA TRIMETHYLAMINE-N-OXIDE IN OBESE PATIENTS WITH DIABETES

[1]Aruchuna Ruban*, [2]Michael Glaysher, [1]Hutan Ashrafian, [1]Alex Miras, [1]Christina Prechtl, [1]Anthony Goldstone, [1]Madhawi Aldhwayan, [1]Navpreet Chhina, [1]Werd Al-Najim, [1]Jia Li, [2]James Byrne, [1]Julian Teare. [1]Imperial College, London, UK; [2]University Hospital Southampton, Southampton, UK

Introduction Trimethylamine *N*-oxide (TMAO) is formed in the liver from trimethylamine, and is exclusively generated by gut microbiota from the metabolism of dietary carnitine and choline. Elevated plasma levels have been implicated in the pathogenesis of Type 2 Diabetes and cardiovascular disease. The Endobarrier is an endoscopically implanted duodenal jejunal bypass liner (DJBL) designed to mimic the effects of bariatric surgery leading to significant weight loss and improvements in glycaemic control and we present novel data of its effects on the plasma metabolic profile of these patients.

Methods The Endobarrier Trial (NCT02459561) is a large multicentre, randomised, controlled trial across two sites in the UK which recruited 170 patients with Type 2 Diabetes and BMI 30–50 kg/m². Participants were randomised to receive the DJBL (n=85) for one year or conventional medical therapy, diet and exercise (n=85). Plasma samples were collected from all participants at baseline, 6 months and 1 year and analysed using ^{1}H NMR spectroscopy and multivariate statistical analysis to identify key metabolic perturbations between both patient cohorts.

Results A total of 112 patients were followed up for one year. 309 plasma samples were processed and then analysed. A typical ^{1}H NMR plasma spectrum is shown in figure 1. Reduction in plasma concentrations of trimethylamine *N*-oxide (TMAO) were found in the DJBL group at 6 months and 1 year compared with the control group.

Conclusions Raised levels of Plasma TMAO have been associated with the development of diabetes and in this study were found to reduce following 6 months and 1 year of DJBL therapy compared with controls. This is the first study of its kind to explore alterations in the metabolic profiles of patients receiving the DJBL by utilising high field ^{1}H nuclear magnetic resonance (NMR) spectroscopy technique.

These results may provide a possible insight into the mechanisms of how this device may elicit its effect on weight loss and glycaemic improvement, by reducing plasma TMAO and potentially altering the gut microbial metabolic function.

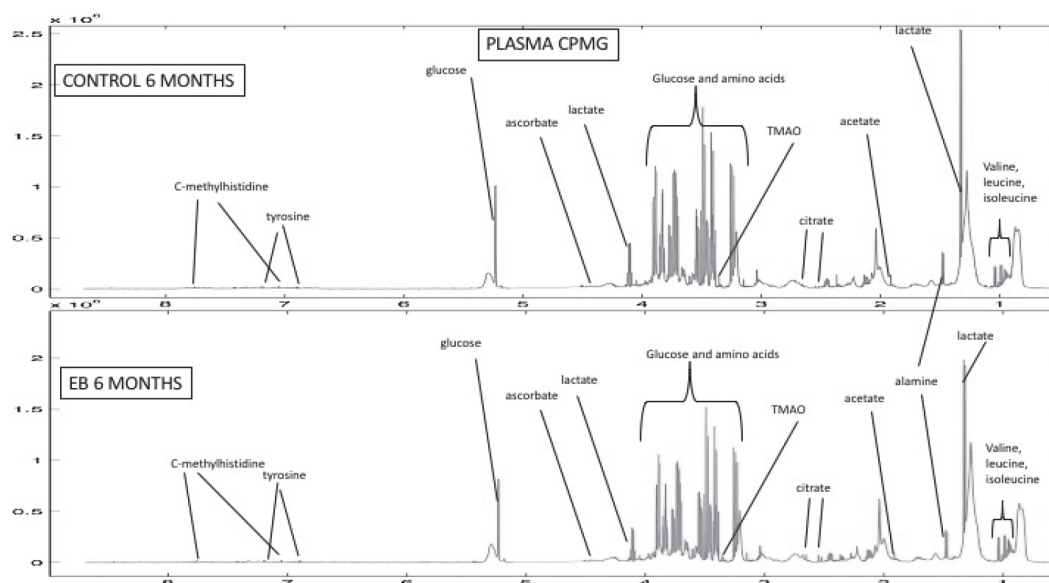**ENDOSCOPIC ULTRASOUND IN DIAGNOSIS AND FOLLOW-UP OF GASTRIC SUB-EPITHELIAL LESIONS: RESULTS FROM A REGIONAL CENTRE**

[1]Rosemary Haddock*, [1]Jennifer Tham, [2]Stuart Paterson, [1]Adrian Stanley. [1]NHS Greater Glasgow And Clyde, Glasgow, UK; [2]NHS Forth Valley, Larbert, UK

Introduction Gastric subepithelial lesions (SEL) have a broad differential including malignant disease. Endoscopic ultrasound (EUS) ± fine needle aspiration (FNA) has become essential in assessing and managing SELs. The optimum assessment and follow-up strategy for lesions <20 mm remains unclear. Our aim was to assess surveillance strategy outcomes by lesion size (<10, 10–20 and >20 mm) of patients undergoing EUS for gastric SELs in our regional centre.

Methods We undertook a retrospective analysis of our prospectively collected regional EUS database of patients who underwent EUS for SELs. Electronic patient records were analysed to obtain data including imaging, cytopathology and follow-up. Patients with SELs out-with the stomach and those undergoing investigation of known malignancy were excluded.

Results 132 patients underwent EUS for an SEL identified on endoscopy (96.2%) or CT scan (3.8%). Mean age was 59 years with 31 (44%) male. 81 (64%) underwent endoscopic biopsy pre-EUS. Mean lesion size was 23.2 mm. All patients were followed up for a minimum of 12 months.

Abstract O33 Figure 1