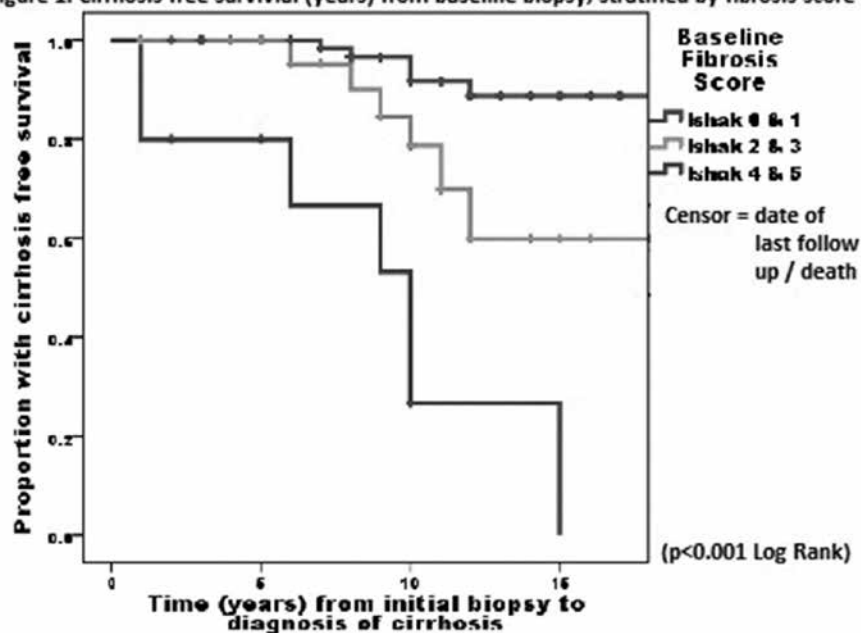


Figure 1: Cirrhosis free survival (years) from baseline biopsy, stratified by fibrosis score



Abstract PTU-119 Figure 1

Conclusion The rate of cirrhosis was similar to that expected over a 20 year period. Higher baseline fibrosis scores were associated with earlier development of cirrhosis and steatosis was a negative predictor of SVR. Overall, important prognostic information is available from initial diagnostic biopsies and may be useful in determining timing of treatment.

Disclosure of Interest None Declared

PTU-120 QUANTITATIVE MAGNETIC RESONANCE IMAGING (MRI) IN THE EVALUATION OF THE DEGREE OF STEATOSIS, IRON ACCUMULATION AND FIBROSIS IN CHRONIC LIVER DISEASES (MRKER STUDY)

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Introduction Half of all the liver biopsies performed are to assess the severity of pathology including grading of fat, iron accumulation as well as fibrosis. Liver biopsies are invasive tests associated with sampling errors; the coefficient of variation for fibrosis measurement is 45% even with 25mm long specimens. We aimed to develop and validate non-contrast, non-breath-holding, quantitative MRI methodology to estimate the amount of fibrosis, fat and iron accumulation within the whole liver.

Methods MRI relaxation time data (T_1 , T_2 and T_2^*) were acquired (over 15–20 minutes) using a novel Echo Planar Imaging technique with a respiratory-triggered (r.t.) acquisition method. ¹H MR spectra were acquired (r.t.) using a multiple echo PRESS acquisition which allowed for individual T_2 correction to the spectrum for accurate quantification of the fat fraction in a $30 \times 30 \times 30 \text{ mm}^3$ voxel.

Results 115 patients (67 Training; 48 Validation cohort) with suspected chronic liver disease aged 19 to 72 years [alcoholic (13%), non-alcoholic (56%) fatty liver disease, chronic viral hepatitis (21%)

and haemochromatosis (3%)] who had a liver biopsy ≥ 25 mm were included in the study. The diagnostic accuracy of the T_1 parameter in the detection of different histological stages of fibrosis, using receiver operator curves and areas under the curve (AUC), in the training and validation cohort are summarised in Table 1. There were also significant correlations between MR measures of fat fraction and staging of steatosis with a Spearman's correlation coefficient of 0.760 ($p < 0.001$) and T_2^* with hepatic iron staging with Spearman's correlation coefficient of -0.588 ($p < 0.001$). The T_1 relaxation time of the liver correlated with the percentage of fibrosis measured as a continuous variable on morphometry within the entire study population (Pearson correlation coefficient of 0.712, $p < 0.001$).

Abstract PTU-120 Table 1

Fibrosis stage (0–4) detected	AUC Training	AUC Validation
Cirrhosis (stage 4 vs. 0–3)	0.91	0.83
Advanced fibrosis (stage 3/4 vs. 0/1/2)	0.81	0.78
Mild fibrosis (stage 2/3/4 vs. 0/1)	0.67	0.70

Conclusion Across a range of chronic liver diseases, MR measures of fat fraction, hepatic iron content and fibrosis of the whole liver correlate well with related histological measures.

Disclosure of Interest None Declared

Neurogastroenterology/Motility

PTU-121 NORMAL VALUES AND REPRODUCIBILITY OF THE REAL TIME BEAT-TO-BEAT INDEX OF CARDIAC VAGAL TONE IN HEALTHY HUMANS

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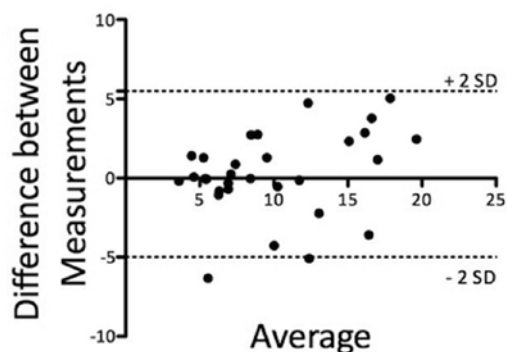
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Introduction The vagus nerve is the primary neuroanatomical substrate within the brain gut axis (1). In humans, surrogate measures of vagal tone are most commonly evaluated using heart rate

variability (HRV) albeit with considerable methodological limitations, particularly with respect to temporal resolution. However, recent advances have allowed the measurement of a novel non-invasive validated measure of efferent vagal activity from the brainstem, known as cardiac vagal tone (CVT). CVT is measured on a linear vagal scale (LVS) where 0 represents full atropinization and has improved temporal resolution compared to HRV. CVT is increasingly being utilised in a diverse array of GI research (3,4,5). However, its normal values and reproducibility are, to date, incompletely understood. The aim of this study was to address these knowledge gaps.

Methods 120 healthy subjects (68 males, median age 29 years, range 19–55 years) were studied in a temperature controlled, constantly lit, quiet laboratory. After attachment of CVT recording equipment (Neuroscope), 20 minutes of CVT data (resting/no stimulation) was acquired. 30 subjects, selected at random, were restudied after 1 year. Reproducibility was assessed using a two-way, random effects, single measure intra-class correlational coefficients (ICC) model and Bland Altman plots.

Results The mean CVT was 8.2 LVS with a standard deviation of 3.0. Thus, the normal range (mean \pm 2 standard deviations (SD)) for CVT based on this data is therefore 2.2 LVS to 14.2 LVS. Age correlated negatively with CVT ($r = -0.36$, $p < 0.0001$) but there was no discernable effect of gender, body mass index or ethnicity. The ICC for CVT was 0.81 (95% confidence interval 0.64–0.91), indicating excellent reproducibility. Figure 1 shows the Bland-Altman plot that demonstrate that 29 out of the 30 measurements lie within ± 2 SDs of the differences between measurements suggesting that there was no bias or systematic error and that the parameter of CVT is reproducible at a period of 1 year.



Abstract PTU-121 Figure 1

Conclusion The normal range for CVT should be considered to be 2.2 – 14.2 LVS. CVT is a reproducible measure over the period of 1 year. Future research utilising CVT should refer to these values

Disclosure of Interest None Declared

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PTU-122 AUTONOMIC NERVOUS SYSTEM RECOVERY FOLLOWING OESOPHAGEAL INTUBATION IS INFLUENCED BY PERSONALITY TRAITS & ANXIETY

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Introduction Oesophageal intubation activates a complex stress response, mediated in part by the autonomic nervous system (ANS) (1). Measurement of ANS tone at intubation is thus a useful method of assessing the duration of the physiological stress response which may influence any subsequent measurement of oesophageal sensory-motor function. For instance, it is known that both ANS tone and psychological factors such as the personality trait of neuroticism and anxiety levels, influence oesophageal sensitivity to distension (1). However, factors that influence recovery of ANS tone following intubation are incompletely understood. Thus the aim of the study was to evaluate the ANS response to oesophageal intubation and to identify whether personality traits influence its recovery to baseline.

Methods 50 healthy subjects (25 male, mean age 38.1 years, range 21–59 years) had personality traits, using the validated Big-Five Inventory (BFI), and anxiety levels, using the validated Spielberger State/Trait Anxiety Inventory (STAI). ANS tone was assessed using cardiac vagal tone (CVT) which is a validated measure of brainstem mediated parasympathetic (PNS) efferent tone at baseline (10 minutes) & continuously thereafter in addition to heart rate (HR) and mean arterial blood pressure (MBP) which are mixed measures of PNS and sympathetic tone. Subjects were then intubated with a naso-oesophageal catheter, without the aid of local anaesthetic, and monitored for a further 20 minutes.

Results All subjects tolerated the study well. The mean BFI neuroticism score (BFI-N) was 2.86 (range 1–5). The mean baseline HR, MBP and CVT was 65 beats per minute (range 48–88), 87 mmHg (range 68–104) and 7.8 (range 2.2–14.1) respectively. As expected, naso-oesophageal intubation caused a significant elevation in HR ($p < 0.0001$) and MBP ($p < 0.0001$) with associated CVT withdrawal ($p = 0.001$). The mean recovery time of CVT to baseline was 4.5 minutes (range 1.1 – 14.9). BFI-N, state STAI and trait STAI were positively correlated with recovery time ($r = 0.86$, $p < 0.0001$; $r = 0.48$, $p < 0.0001$; $r = 0.58$, $p < 0.0001$).

Conclusion Naso-oesophageal intubation results in the withdrawal of PNS tone and an increase in HR and MBP and the speed of recovery to baseline of PNS tone is correlated with neuroticism. Future studies should allow for at least 15 minutes of recovery time after intubation before any physiological assessments are made and consideration should be given to psychological trait measures as these can influence the recovery of stress response to intubation.

Disclosure of Interest None Declared

REFERENCE

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PTU-123 FACTORS THAT ANTICIPATE CLINICAL/THERAPEUTIC OUTCOMES TO PRUCALPRIDE

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Introduction Chronic constipation (CC) is a prevalent disorder that has a significant negative impact on quality of life. Traditional management has focused on lifestyle measures and laxative. Prucalopride, a selective high affinity 5-HT₄ receptor agonist, has been demonstrated to an effective treatment of severe CC. However, its efficacy in secondary care and factors that predict clinical response are incompletely understood. Our aim was thus to identify baseline factors that may predict positive clinical outcomes in patients taking prucalopride for CC.

Methods A single centre, prospective open label trial was undertaken in patients with primary and secondary CC, defined as less than 2 spontaneous complete bowel movements (SCBM) per week, who were commenced on prucalopride. Validated questionnaires