Gut: first published as 10.1136/gut.2011.239301.521 on 13 March 2011. Downloaded from http://gut.bmj.com/ on April 23, 2024 by guest. Protected by copyright.

PTH-120

NON-INVASIVE ASSESSMENT AND PREDICTION OF CLINICALLY SIGNIFICANT PORTAL HYPERTENSION

doi:10.1136/gut.2011.239301.521

K Rye,[1,*] G Mortimore,[1] A Austin,[1] J Freeman[1] [1]*Liver Unit, Royal Derby Hospital, Derby, UK*

Introduction Hepatic venous pressure gradient (HVPG) predicts variceal development, bleeding, clinical decompensation and death. Measurement is invasive, time-consuming and performed in few centres. Reduction of HVPG to ≤12 mm Hg or by >20% significantly reduces bleeding risk and mortality. Detection of non-responders requires repeated HVPG measurement as conventional non-invasive assessment is not accurate in predicting haemodynamic response. Cirrhotics

Table 1 PTH-120

	Correlation (r)	HVPG<12 mm Hg (n=7)	HVPG≥12 mm Hg (n=20)	p Value	AUROC (95% CI) HVPG≥12 mm Hg	p Value
CPS	0.58	5 (5 to 5)	6.5 (5 to 8)	0.02	0.79 (0.62 to 0.95)	<0.001
MELD	0.48	7 (7 to 8)	11 (9.4 to 13.0)	0.01	0.84 (0.61 to 1.00)	0.002
PT	0.55	12 (11 to 12)	13 (12 to 14)	0.02	0.79 (0.56 to 1.00)	0.007
Albumin	−0.68	40 (38 to 45)	33 (31 to 37)	<0.001	0.83 (0.68 to 0.99)	<0.001
Bilirubin	0.41	15 (12 to 22)	30 (21 to 44)	0.04	0.77 (0.53 to 1.00)	0.01
HR (bpm)	0.62	65 (57 to 69)	85 (78 to 94)	<0.001	0.97 (0.91 to 1.00)	<0.001
CI (l/min/m²)	0.53	2.9 (2.5 to 3.5)	3.8 (3.1 to 5.4)	0.03	0.78 (0.59 to 0.96)	0.002
BRS (ms/mm Hg)	−0.69	7.1 (5.9 to 8.4)	3.0 (2.0 to 5.8)	0.01	0.83 (0.67 to 0.98)	<0.001

have a hyperdynamic circulation and impaired baroreceptor sensitivity (BRS). The authors assessed whether non-invasive measurement of systemic haemodynamics and BRS detected clinically significant portal hypertension (CSPH, HVPG ≥12 mm Hg).

Methods Prospective study of 29 cirrhotic patients. Systemic haemodynamics were assessed non-invasively using the Finometer. Spontaneous BRS was calculated from the regression of pulse interval on systolic blood pressure. Portal pressure was assessed by measurement of HVPG in 27 patients.

Results 69% male, median age 47 (42–55) years, CPS 6 (Class A 18, B 10, C 1) and MELD 10 (8–13). HVPG significantly correlated with CI, HR, BRS, Child-Pugh score, MELD, prothrombin time, albumin and bilirubin. Differences in these parameters according to HVPG and comparison of AUROC curves to predict CSPH are summarised in the table 1. At a cut-off of 71.75 bpm, HR predicted CSPH with 100% sensitivity, 86% specificity, 95% PPV, 100% NPV and correctly classified 96% of patients. A HR of 75.93 bpm gave 100% specificity and PPV. At a cut-off of 3.78 l/min/m², CI predicted CSPH with 55% sensitivity, 100% specificity and 100% PPV. At a cut-off of 4.86 ms/mm Hg BRS predicted CSPH with 70% sensitivity, 100% specificity and PPV.

Conclusion Significant differences in CI, HR and BRS, assessed non-invasively, are seen in cirrhotic patients with CSPH. While optimal cut-offs for prediction remain to be defined it may be possible to non-invasively diagnose or exclude CSPH. It also opens up future potential for non-invasive monitoring of responses to therapeutic intervention.

Competing interests None.

Keywords cirrhosis, non-invasive assessment, portal hypertension.

Gut: first published as 10.1136/gut.2011.239301.521 on 13 March 2011. Downloaded from http://gut.bmj.com/ on April 23, 2024 by guest. Protected by copyright.