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INVITED EDITORIAL

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Editorial: stratifying risk of adverse outcomes in cirrhosis—the Hepquant SHUNT test. Authors' reply

Drs Maan and Sonneveld highlighted the link of portal pressure to risk for clinical complications in patients with chronic liver disease,[1] citing the excellent studies from the Barcelona and Yale liver units.[2] These studies, and others, have established linkage between increasing portal pressure, formation of portal-systemic shunts, varices and clinical outcomes. Portal-systemic shunting occurs in parallel to rise in portal pressure—providing a rationale for the HepQuant SHUNT test which quantifies portal-systemic shunting to be considered as a surrogate for portal hypertension.

The HepQuant SHUNT test uses the hepatic clearance of cholate from both systemic and portal circulations to assess global liver function and quantify portal-systemic shunting. In research studies of patients undergoing portal pressure measurements parameters of the SHUNT test have correlates with portal pressure, and were predictive of portal hypertension.[3] In the current study, the SHUNT test predicted risk for clinical complications of portal hypertension, liver-related death and days of hospitalisation.[4]

Additional data from the cohort[4] further support the ability of the HepQuant SHUNT test to quantify portal-systemic shunting and risk for clinical outcome. Seven non-Hispanic white men, age 59.4 ± 7.0 years, BMI 31.0 ± 2.7 kg/m^2, with alcohol (n = 2), NASH (n = 1), or cryptogenic (n = 4) aetiology, were excluded from our primary analysis because they had undergone prior TIPSS for refractory ascites (n = 4) or variceal haemorrhage (n = 3) from 0.3 to 7.0 years prior to HepQuant SHUNT testing. Standard blood tests (mean ± SD) revealed platelet count 104.86 ± 36.96 nL^{-1}, albumin 3.09 ± 0.60 g dL^{-1} and MELD Na 12.00 ± 6.45. Although the mean MELD Na score of 12.0 imply low risk for clinical outcome—some progress to clinical outcome.[5,6]

The HepQuant Test results in these seven were Systemic HFR 2.56 ± 1.23 mL/min/kg (normal 6.1 ± 1.5 mL/min/kg), Portal HFR 2.87 ± 1.58 mL/min/kg (normal 26.6 ± 8.4 mL/min/kg), SHUNT% 91.6 ± 13.9% (normal 24 ± 7%) and DSI 36.6 ± 6.7 (normal 10.4 ± 3.6). SHUNT% 91.6 and DSI 36.6 imply high risk for clinical outcome.

The results of the HepQuant test in the seven TIPSS patients were compared to the results in the patients with a prior decompensation (Figure 1). The mean DSI of TIPSS patients was similar to non-TIPSS patients (36.6 vs 32.6)—correlating with the observed aggressive clinical course of both groups.[4] The SHUNT% values in the seven TIPSS patients were significantly higher in comparison to the non-TIPSS patients with decompensation and likely reflected the effects of TIPSS in the diversion of portal flow. Four of the seven TIPSS patients (57%) compared to 16/35 (46%) non-TIPSS patients suffered death or required transplant. TIPSS patients had higher

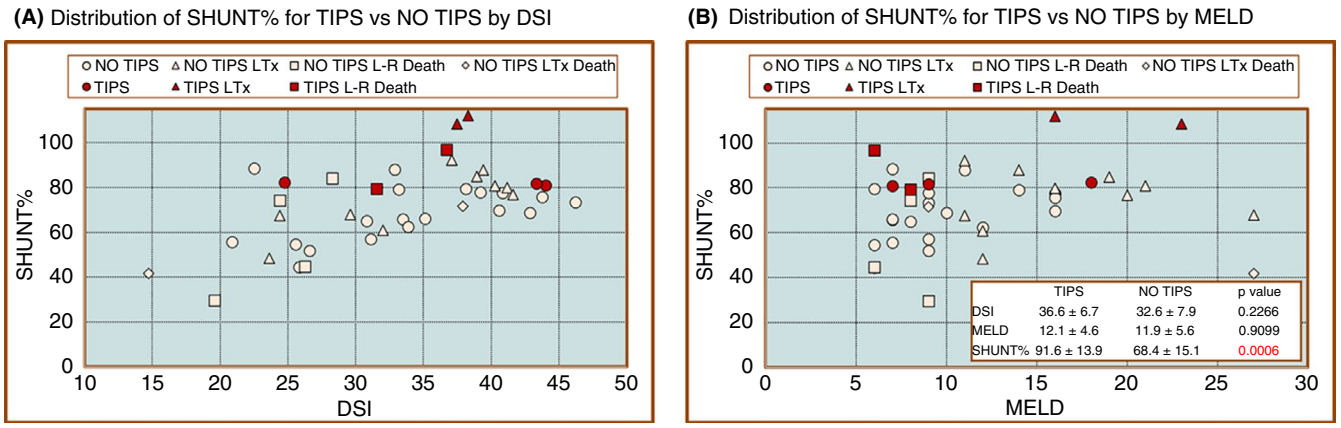

FIGURE 1 SHUNT% is plotted against DSI (A) and the MELD score (B). The results for TIPS patients are displayed by red markers. TIPS patients had significantly higher mean SHUNT% compared to non-TIPS patients. Severity of disease is reflected in the high DSI scores, in contrast to the low MELD scores. Abbreviations: L-R death, liver-related death; LTx, liver transplant; LTx Death; death after a prior liver transplant

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days of hospital stay each year (21.3 vs 11.4) compared to for non-TIPSS patients.[4]

The results from the Baylor cirrhosis study support a role for the HepQuant SHUNT test in determining risk for adverse clinical outcomes, even in the setting of prior TIPSS, to aid in management and tracking disease progression.

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LINKED CONTENT

This article is linked to Fallahzadeh et al and Maan & Sonneveld papers. To view these articles, visit https://doi.org/10.1111/apt.16283 and https://doi.org/10.1111/apt.16299

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