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HEPATIC IMPAIRMENT MEASURED BY QUANTITATIVE TESTS OF LIVER FUNCTION (QLFTS) PREDICTS CLINICAL OUTCOME IN PATIENTS WITH ADVANCED FIBROSIS: RESULTS FROM THE HEPATITIS C ANTIVIRAL LONG-TERM TREATMENT AGAINST CIRRHOSIS (HALT-C) TRIAL

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Background: Hepatic histology defines disease severity and predicts risk for clinical outcomes in patients with chronic hepatitis C. But, liver biopsy is invasive, inconvenient, risky, and prone to sampling error. QLFTs noninvasively measure hepatic impairment and correlate with biochemical and histological indices of disease severity. Aim: To prospectively evaluate the ability of QLFTs to predict clinical outcomes in compensated patients, controlling for platelet count and histologic cirrhosis. Methods: 227 patients, enrolled in the HALT-C Trial, had baseline QLFTs and were randomized to either no treatment (N=120) or peginterferon alfa-2a (PegIFN) 90 μg/week (N=107), and followed for 66 months for non-HCC, liver-related clinical outcomes. Since PegIFN did not affect outcomes (DiBisceglie 2008), these two groups were combined for analyses. QLFTs included dual (iv and po) cholate clearances and shunt, methionine breath test, antipyrine clearance, antipyrine clearance, perfused hepatic mass and liver and spleen volume from SPECT liver-spleen scan, caffeine elimination rate, MEGX concentration, and galactose elimination capacity (GEC). The hazard ratios (table) of clinical outcomes was based on comparing the third of patients with worst function to those with medium function and medium function to high function. HR for clinical outcomes between lowest and highest tertile is HR squared. The independence of each QLFT in predicting clinical outcomes was assessed in multivariate analyses that included platelet count and histologic cirrhosis. Results: 46 of the 227 patients (20%) experienced 97 outcomes: CTP score ≥7 (N=34), death (N=30), ascites (N=18), variceal bleed (N=3), encephalopathy (N=2), and SBP (N=1). Cholate Clearance po, Methionine Breath Test, Cholate Shunt, Antipyrine Clearance, Perfused Hepatic Mass, and Spleen Volume were the most robust independent predictors of clinical outcomes. Conclusion: QLFTs, independent of histologic cirrhosis, are powerful, non-invasive predictors of subsequent hepatic decompensation in advanced chronic hepatitis C.

QLFT	HR per tertile (95% CI)	
	Univariate	Multivariate
Cholate Clearance po	4.37 (2.63-7.30)	3.23 (1.84-5.65)
Methionine Breath Test	3.06 (1.83-5.13)	2.42 (1.43-4.12)
Cholate Shunt	3.26 (2.06-5.17)	2.35 (1.44-3.84)
Antipyrine Clearance	2.59 (1.57-4.29)	2.30 (1.39-3.80)
Perfused Hepatic Mass	3.62 (2.26-5.81)	2.12 (1.26-3.89)
Spleen Volume	3.45 (2.15-5.53)	1.92 (1.12-3.31)
Cholate Clearance iv	2.13 (1.43-3.17)	1.83 (1.23-2.73)
Caffeine Elimination	2.24 (1.48-3.38)	1.81 (1.20-2.73)
MEGX	1.89 (1.29-2.78)	1.67 (1.14-2.45)
Galactose Elimination	1.89 (1.29-2.78)	1.67 (1.14-2.45)

Disclosures:

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The following people have nothing to disclose: Teresa M. Curto, Elizabeth C. Wright, James E. Everhart