Background and Purpose

- Cost-effective screening of patients with chronic liver disease for hepatocellular carcinoma (HCC) requires identification of the high-risk subgroup.
- Once HCC is diagnosed, the degree of hepatic reserve dictates the anticipated tolerability of the patient to the various treatment options.
- HepQuant STAT and DSI are comprehensive noninvasive measures of liver function and physiology that assess hepatic reserve and risk for:
  1. Clinical outcome
  2. Measure treatment effects
  3. Predict drug PK

Results: Study 1

HCC risk in Hepatitis C

220 subjects with HCV were free of HCC at baseline and 13 developed incident HCC at a mean of 4.66±1.42 years of follow-up.

Baseline DSI >18.3 or STAT >0.91 identified the subjects at risk for incident HCC. The relative risk for future HCC was 11.4 for subjects with baseline DSI >18.3 (11/113 vs. 1/107).

Identify Persons At-Risk for Liver Cancer – Who should be screened?

Results: Study 2

Treatment Effects with Liver Directed Therapy (LDT) in HCC

11 subjects had a complete dual cholate clearance assay at baseline at a median DSI of 32.01 (11.11-30.07). 9 were treated with TACE or SBRT and followed to assess ADSI at Wk4-10 and hepatotoxicity.

3/5 subjects with baseline DSI>35 developed hepatotoxicity, none with DSI<35 did. All but one subject had a worsening DSI after LDT. The subject that improved had a baseline DSI>35 and still developed hepatotoxicity.

Results: Study 3

Comparison to Child-Pugh in Predicting Drug PK

30 subjects were classified by CP score, DSI and STAT assessed at baseline before treatment with Ampeloxetine. Ampeloxetine AUC correlated weakly with CP score (r²=0.31, p=0.0013) but more strongly with SHUNT% (r²=0.63, p=0.0001), DSI (r²=0.65, p=0.0001), and STAT (r²=0.65, p=0.0001).

Conclusions and Discussion

- Baseline DSI, STAT and dDSI may predict development of future HCC in patients otherwise stable. STAT may be useful for detecting those at risk, and DSI may be useful in monitoring post-treatment changes.
- LDT may not be beneficial for patients with baseline DSI>35 or likely to progress to DSI>35 after LDT treatment. These patients may better benefit from liver transplant or less hepatotoxic interventions until transplant.
- DSI and STAT may predict drug PK better than Child-Pugh. This may be useful in understanding individual differences in response to treatment and in dose selection.