

## Supersonic shear imaging in the evaluation of rejection or recurrent hepatitis after liver transplantation

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**PURPOSE:** The purpose of this study was to determine whether supersonic shear imaging (SSI) would be useful in evaluating the presence of rejection or recurrent hepatitis for post-liver transplantation (LT) follow-up.

**MATERIALS AND METHODS:** This study included 216 liver recipients and 39 liver donors who had received SSI with concurrent liver biopsy from September 2010 to December 2011. Of the liver recipients, 142 patients underwent SSI > 4 weeks after the LT (Group 1) and 74 patients underwent SSI ≤ 4 weeks after the LT (Group 2). Liver stiffness was measured in the right lobe five times and averaged liver stiffness values were correlated to the pathology results for each patient. Intraclass coefficient (ICC) was obtained for assessment of reproducibility.

**RESULTS:** The ICC for the mean liver stiffness values was 0.865. In Group 1, 32 patients with rejection or hepatitis showed significantly increased stiffness values than 104 patients without rejection or with indefinite rejection ( $12.29 \pm 8.13$  kPa vs.  $6.33 \pm 2.10$  kPa, respectively,  $p < 0.001$ ), and a cut-off value was 7.94 kPa. In Group 2, there was no difference of liver stiffness value between patients with rejection ( $n = 8$ ) and those without rejection ( $n = 61$ ) ( $p > 0.05$ ). Regarding to the liver grafts with acute cellular rejection, no significant difference in liver stiffness was noted between Groups 1 and 2 ( $p > 0.05$ ).

**CONCLUSION:** SSI may be used as a non-invasive complementary tool to detect rejection or recurrent hepatitis at follow-up > 4 weeks after the LT.