

## Usefulness of liver stiffness measurement during acute cellular rejection in liver transplantation

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### Abstract

Liver stiffness measurement (LSM) is a useful method to estimate liver fibrosis and portal hypertension. The inflammatory process that takes place in post-liver transplant acute cellular rejection (ACR) may also increase liver stiffness. We aimed to explore the association between liver stiffness and the severity of ACR, as well as to assess the relationship between liver stiffness and response to rejection treatment in a prospective study that included 27 liver recipients with biopsy■proven ACR, 30 stable recipients with normal liver tests, and 30 hepatitis C virus (HCV)–infected LT recipients with histologically diagnosed HCV recurrence. Patients with rejection were stratified into 2 groups (mild and moderate/severe) according to the severity of rejection evaluated with the Banff score. Routine biomarkers and LSM with FibroScan were performed at the time of liver biopsy (baseline) and at 7, 30, and 90 days in patients with rejection and at baseline in control patients. Median baseline liver stiffness was 5.9 kPa in the mild rejection group, 11 kPa in the moderate/severe group ( $P = 0.001$ ), 4.2 kPa in stable recipients ( $P = 0.02$  versus mild rejection), and 13.6 kPa in patients with recurrent HCV ( $P = 0.17$  versus moderate/severe rejection). The area under the receiver operator characteristic curve of LSM to discriminate mild versus moderate/severe ACR was 0.924, and a LSM value of 8.5 kPa yielded a positive predictive value of 100% to diagnose moderate/severe rejection. Liver stiffness improved in 7%, 21%, and 64% of patients with moderate/severe rejection at 7, 30, and 90 days. In conclusion, according to the results of this exploratory study, LSM is associated with the severity of ACR in liver transplantation and thus may be of help in its assessment. *Liver Transpl* 22:298–304, 2016. © 2015 AASLD..