

Usefulness of the Shear-wave Velocity by Virtual Touch Quantification in Chronic Hepatitis B

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Abstract

Background: Usefulness of shear-wave velocity (Vs) by virtual touch quantification (VTQ) in patients with hepatitis B was studied.

Subject: Vs was measured in 339 patients with hepatitis B (male: 188, histopathological diagnosis: 46).

Methods: Vs measured ten times in a right hepatic lobe and a median (Vs, m/s) was adopted.

Results: Vs value was significantly correlated with APRI, hyaluronic acid, prothrombin time, FIB-4, and platelet count ($\rho=0.578, 0.497, -0.486, 0.438, -0.336$; $p<0.0001$). Vs value was 1.19 (1.00–1.59) m/s in 10 patients with fibrosis stage of F0–1, 1.29 (1.20–1.59) m/s in 18 patients with F2, 1.54 (1.39–2.24) m/s in 11 patients with F3 and 2.31 (1.94–2.69) m/s in 7 patients with F4. Vs value significantly differed between F0–1 and F4 ($p=0.0155$), and between F2 and F4 ($p=0.0027$). The optimal cut-off values of Vs value were 1.16 m/s for $F \geq 2$, 1.36 m/s for $F \geq 3$ and 1.82 m/s for F4.

Discussion: Vs value was significantly correlated with fibrosis markers and fibrosis stage in chronic hepatitis B. In conclusion, Vs value was valuable for a diagnosis of fibrosis in chronic hepatitis B.

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