Determination of reliability criteria for liver stiffness evaluation by transient elastography

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Résumé en anglais	**UNLABELLED:** Liver stiffness evaluation (LSE) is usually considered as reliable when it fulfills all the following criteria: ≥10 valid measurements, ≥60% success rate, and interquartile range / median ratio (IQR/M) ≤0.30. However, such reliable LSE have never been shown to be more accurate than unreliable LSE. Thus, we aimed to evaluate the relevance of the usual definition for LSE reliability, and to improve reliability by using diagnostic accuracy as a primary outcome in a large population. 1,165 patients with chronic liver disease from 19 French centers were included. All patients had liver biopsy and LSE. 75.7% of LSE were reliable according to the usual definition. However, these reliable LSE were not significantly more accurate than unreliable LSE with, respectively: 85.8% versus 81.5% well-classified patients for the diagnosis of cirrhosis (P = 0.082). In multivariate analyses with different diagnostic targets, LSE median and IQR/M were independent predictors of fibrosis staging, with no significant influence of ≥10 valid measurements or LSE success rate. These two reliability criteria determined three LSE groups: "very reliable" (IQR/M ≤0.10), "reliable" (0.10< IQR/M ≤0.30, or IQR/M >0.30 with LSE median <7.1 kPa), and "poorly reliable" (IQR/M >0.30 with LSE median ≥7.1 kPa). The rates of well-classified patients for the diagnosis of cirrhosis were, respectively: 90.4%, 85.8%, and 69.5% (P < 10(-3)). According to these new reliability criteria, 9.1% of LSE were poorly reliable (versus 24.3% unreliable LSE with the usual definition, P < 10(-3)), 74.3% were reliable, and 16.6% were very reliable. **CONCLUSION:** The usual definition for LSE reliability is not relevant. LSE reliability depends on IQR/M according to liver stiffness median level, defining thus three reliability categories: very reliable, reliable, and poorly reliable LSE. (HEPATOLOGY 2013).
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