Precise evaluation of liver histology by computerized morphometry shows that steatosis influences liver stiffness measured by transient elastography in chronic hepatitis C.

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Résumé en anglais	**BACKGROUND:** Liver stiffness evaluation (LSE) by Fibroscan is now widely used to assess liver fibrosis in chronic hepatitis C. Liver steatosis is a common lesion in chronic hepatitis C as in other chronic liver diseases, but its influence on LSE remains unclear. We aimed to precisely determine the influence of steatosis on LSE by using quantitative and precise morphometric measurements of liver histology. **METHODS:** 650 patients with chronic hepatitis C, liver biopsy, and LSE were included. Liver specimens were evaluated by optical analysis (Metavir F and A, steatosis grading) and by computerized morphometry to determine the area (%, reflecting quantity) and fractal dimension (FD, reflecting architecture) of liver fibrosis and steatosis. **RESULTS:** The relationships between LSE and liver histology were better described using morphometry. LSE median was independently linked to fibrosis (area or FD), steatosis (area or FD), activity (serum AST), and IQR/LSE median. Steatosis area ≥4.0 % induced a 50 % increase in LSE result in patients with fibrosis area <9 %. In patients with IQR/LSE median ≤0.30, the rate of F0/1 patients misclassified as F ≥ 2 by Fibroscan was, respectively for steatosis area <4.0 and ≥4.0 %: 12.6 vs 32.4 % (p = 0.003). Steatosis level did not influence LSE median when fibrosis area was ≥9 %, and consequently did not increase the rate of F ≤ 3 patients misclassified as cirrhotic. **CONCLUSION:** A precise evaluation of liver histology by computerized morphometry shows that liver stiffness measured by Fibroscan is linked to liver fibrosis, activity, and also steatosis. High level of steatosis induces misevaluation of liver fibrosis by Fibroscan.
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