A single blood test adjusted for different liver fibrosis targets improves fibrosis staging and especially cirrhosis diagnosis.

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Résumé en anglais	Fibrosis blood tests are usually developed using significant fibrosis, which is a unique diagnostic target; however, these tests are employed for other diagnostic targets, such as cirrhosis. We aimed to improve fibrosis staging accuracy by simultaneously targeting biomarkers for several diagnostic targets. A total of 3,809 patients were included, comprising 1,012 individuals with chronic hepatitis C (CHC) into a derivation population and 2,797 individuals into validation populations of different etiologies (CHC, chronic hepatitis B, human immunodeficiency virus/CHC, nonalcoholic fatty liver disease, alcohol) using Metavir fibrosis stages as reference. FibroMeter biomarkers were targeted for different fibrosis-stage combinations into classical scores by logistic regression. Independent scores were combined into a single score reflecting Metavir stages by linear regression and called Multi-FibroMeter Version Second Generation (V2G). The primary objective was to combine the advantages of a test targeted for significant fibrosis (FibroMeter) with those of a test targeted for cirrhosis (CirrhoMeter). In the derivation CHC population, we first compared Multi-FibroMeter to FibroMeter and observed significant increases in the cirrhosis area under the receiver operating characteristic curve (AUROC), Obuchowski index (reflecting all fibrosis-stage AUROCs), and classification metric (six classes expressed as a correctly classified percentage) and a nonsignificant increase in significant fibrosis AUROC. Thereafter, we compared it to CirroMeter and observed a nonsignificant increase in the cirrhosis AUROC. In all 3,809 patients, respective accuracies for Multi-FibroMeter and FibroMeter were the following: cirrhosis AUROC, 0.906 versus 0.878 (0.001; versus CirroMeter, 0.897, 0.014); Obuchowski index, 0.795 versus 0.791 (0.059); classification, 86.0% versus 82.1% (0.001); significant fibrosis AUROC, 0.833 versus 0.832 (0.366). Multi-FibroMeter had the highest correlation with the area of portoseptal fibrosis and the highest reproducibility over time. Correct classification rates of Multi-FibroMeter with hyaluronate (V2G, 86.0%) or without (V3G, 86.1%) did not differ (0.938). Multitargeting biomarkers significantly improves fibrosis staging and especially cirrhosis diagnosis compared to classical single-targeted blood tests. (2018;2:455-466).
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