Comparison of 16 blood and/or elastometric fibrosis tests in 5 causes of chronic liver diseases: too much? Towards a simplification

Jerome Boursier, Alexandra Ducancelle, Vincent Leroy, Julien Vergniol, Nathalie Sturm, Brigitte Le Bail, Jean-Pierre H. Zarski, Victor de Ledinghen; Hepato-Gastroenterology Department, University Hospital, Angers, France; HIFIH Laboratory EA3859, University, Angers, France; Virology Department, University Hospital, Angers, France; Hepato-Gastroenterology Department, University Hospital, Grenoble, France; Hepatology Department, University Hospital, Bordeaux, France; Pathology Department, University Hospital, Grenoble, France; Pathology Department, University Hospital, Bordeaux, France

Introduction: Most non-invasive fibrosis tests were developed in chronic hepatitis C (CHC), but are frequently used in other causes. A lot of tests are available. Therefore, we compared the accuracy of several usual tests between main etiologies to try to determine whether a test could be the most performant in several etiologies. Methods: Populations included 1660 patients: 698 with CHC, 178 with hepatitis B (CHB), 444 with HIV/CHC, 225 with NAFLD, and 115 with alcoholic liver disease (ALD). 16 tests (13 blood tests, 1 elastometry by VCTE - Fibroscan- and 2 combining blood markers and elastometry) were evaluated. Reference was Metavir fibrosis (F) stage by liver biopsy. Results: Accuracy was sensitive to biopsy length. Obuchowski indices, reflecting accuracy for all F stages, were by decreasing order, CHC: Elasto-FibroMeter\textsuperscript{VCTE2G/3G}: 0.812, FibroMeter\textsuperscript{VIRUS2G}: 0.797, FibroMeter\textsuperscript{VIRUS3G}: 0.785, CirrhoMeter\textsuperscript{VIRUS2G}: 0.771, Fibrotest: 0.762, CirrhoMeter\textsuperscript{VIRUS3G}: 0.756, Fibroscan: 0.754, Hepascore: 0.752, FibroMeter\textsuperscript{ALD}: 0.750, APRI: 0.742, FIB4: 0.741. CHB: Obuchowski indices were roughly the same as in CHC. HIV/CHC: Obuchowski indices were moderately decreased compared to CHC except for Fibrotest (p = 0.03). NAFLD: 7 tests had a substantial accuracy
loss compared to CHC, especially Fibrotest (p = 0.006), while 5 tests had a substantial gain especially FibroMeter\textsuperscript{ALD} (p = 0.039) and Zeng score (p = 0.030). ALD: 2 tests had a dramatic accuracy loss compared to CHC: APRI (p < 0.001) and Fib-4 (p = 0.008). The rate of correctly classified patients, according to detailed classifications, varied in CHC/NAFLD from 92.5/87.6% (Elasto-FibroMeter\textsuperscript{VCTE3G}) to 38.7/39.3% (Fibrotest), p < 0.001. Conclusion: Most tests are validated in the main causes. However, simple blood tests (APRI/FIB4) are not adapted to NAFLD and ALD. Accuracy of other tests is usually stable among CLD causes. Non-CHC cause-specific tests add no value. Fibroscan fibrosis classification should be adapted to the cause. Tests combining blood markers and Fibroscan outperform other tests. Finally, non-invasive fibrosis evaluation can be simplified.

Disclosures:

Vincent Leroy- Board Membership: Abbvie, BMS, Gilead; Consulting: Janssen, MSD; Speaking and Teaching: Abbvie, BMS, Gilead, Janssen, MSD

Jean-Pierre H. Zarski -Advisory Committees or Review Panels: BMS, Gilead, Janssen Cilag, BMS, Gilead, Janssen Cilag; Consulting: Roche, Scherring Plough, Novartis, Roche, Scherring Plough, Novartis; Speaking and Teaching: Siemens

Victor de Ledinghen - Board Membership: Janssen, Gilead, BMS, Abbvie; Speaking and Teaching: AbbVie, Merck, BMS, Gilead

The following authors have nothing to disclose: Jerome Boursier, Alexandra Ducancelle, Julien Vergniol, Nathalie Sturm, Brigitte Le Bail