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

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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$^{VCTE2G/3G}$: 0.812, FibroMeter^{VIRUS2G}: 0.797, FibroMeter^{VIRUS3G}: 0.785, CirrhoMeter^{VIRUS2G}: 0.771, Fibrotest: 0.762, CirrhoMeter^{VIRUS3G}: 0.756, Fibroscan: 0.754, Hepascore: 0.752, FibroMeter^{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^{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^{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

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