Comparison of eight diagnostic algorithms for liver fibrosis in hepatitis C: new algorithms are more precise and entirely noninvasive

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Résumé en anglais	The sequential algorithm for fibrosis evaluation (SAFE) and the Bordeaux algorithm (BA), which cross-check FibroTest with the aspartate aminotransferase-to-platelet ratio index (APRI) or FibroScan, are very accurate but provide only a binary diagnosis of significant fibrosis (SAFE or BA for Metavir F ≥ 2) or cirrhosis (SAFE or BA for F4). Therefore, in clinical practice, physicians have to apply the algorithm for F ≥ 2, and then, when needed, the algorithm for F4 (“successive algorithms”). We aimed to evaluate successive SAFE, successive BA, and a new, noninvasive, detailed classification of fibrosis. The study included 1785 patients with chronic hepatitis C, liver biopsy, blood fibrosis tests, and FibroScan (the latter in 729 patients). The most accurate synchronous combination of FibroScan with a blood test (FibroMeter) provided a new detailed (six classes) classification (FM+FS). Successive SAFE had a significantly ($P < 10-3$) lower diagnostic accuracy (87.3%) than individual SAFE for F ≥ 2 (94.6%) or SAFE for F4 (89.5%), and required significantly more biopsies (70.8% versus 64.0% or 6.4%, respectively, $P < 10-3$). Similarly, successive BA had significantly ($P \leq 10-3$) lower diagnostic accuracy (84.7%) than individual BA for F ≥ 2 (88.3%) or BA for F4 (94.2%), and required significantly more biopsies (49.8% versus 34.6% or 24.6%, respectively, $P < 10-3$). The diagnostic accuracy of the FM+FS classification (86.7%) was not significantly different from those of successive SAFE or BA. However, this new classification required no biopsy. Conclusion: SAFE and BA for significant fibrosis or cirrhosis are very accurate. However, their successive use induces a significant decrease in diagnostic accuracy and a significant increase in required liver biopsy. A new fibrosis classification that synchronously combines two fibrosis tests was as accurate as successive SAFE or BA, while providing an entirely noninvasive (0% liver biopsy) and more precise (six versus two or three fibrosis classes) fibrosis diagnosis.
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