

Houot 2016
FibroTest
Elastography
FIB-4
APRI
Meta-analysis

FibroTest is superior to TE by Fibroscan, APRI and Fib-4 using direct comparisons

FibroTest better than TE by Fibroscan, APRI and Fib-4: A meta-analysis of 71 studies.

Houot M, Ngo Y, Munteanu M, et al. Aliment Pharmacol Ther. 2016;43:16-29

The statistics using direct comparisons have helped to improve the standard methods of meta-analysis and comparisons between non-invasive tests. 71 studies with biopsy in chronic hepatitis B and C were selected for the 185 direct comparisons between the most used noninvasive tests: FibroTest, TE by Fibroscan, APRI and FIB-4.

- FibroTest had better diagnostic performance compared to the TE by Fibroscan for significant fibrosis (12,725 F2F3F4 METAVIR patients) and has a similar performance for cirrhosis (F4 METAVIR 10,929 patients)
- The applicability of FibroTest was higher than that of TE by Fibroscan (99% versus 88%)
- FibroTest performance was superior to the tests based on the transaminases - APRI and FIB-4, both for cirrhosis and advanced fibrosis.

Munteanu 2016
FibroTest, FibroMax,
NAFLD

Validation of FibroTest and FibroMax panel in NAFLD patients

Blood tests of liver injury are less well validated in non-alcoholic fatty liver disease (NAFLD) than in patients with chronic viral hepatitis.

Munteanu M, Tiniakos D, Anstee Q et al. & the FLIP Consortium and the FibroFrance Group. Aliment Pharmacol Ther. 2016. doi: 10.1111/apt.13770.

A new multicenter study included two NAFLD cohorts - the European FLIP and the French (FibroFrance) - revalidated the diagnostic tests for elementary lesions of NAFLD - steatosis, activity and fibrosis (SAF) - from the FibroMax panel: SteatoTest, ActiTest and FibroTest, respectively.

This study has several strengths: the size of the cohort (600 NAFLD patients), the use of a new histological classification (SAF score, Bedossa et al. 2012) and an efficient statistical methodology (NonBinAUROC).

The results confirmed once again the excellent diagnostic value of FibroMax panel for histological SAF lesions. The FibroTest was superior to the FIB-4 tests and BARD, based on transaminases.

FibroTest was the only test discriminating between fibrosis stages F2 to F1, unlike the FIB-4, BARD and NAFLD-score.

In conclusion, in patients with NAFLD, the FibroMax panel offer reliable non-invasive tests that are correlated with the histological classification of SAF.

FibroTest/FibroSure Scientific Publications

Key Publications for 2016

Jullian-Desayes
2016
FibroMax
NAFLD
OSA

FibroMax panel for the screening for NAFLD in obstructive sleep apnea (OSA)

Impact of effective versus sham continuous positive airway pressure on liver injury in obstructive sleep apnea: Data from randomized trials.

Jullian-Desayes I, Tamisier R, Zarski JP, et al.. Respirology. 2016;21:378-85

OSA patients have high risk of NAFLD. This randomized study on 103 OSA patients proposed to study the prevalences of liver injury estimated by the FibroMax panel and the impact on liver injury of 6 to 12 weeks of treatment with positive effective pressure (CPAP).

- The prevalence of NAFLD among OSA patients seems very high: 43.7% severe steatosis as per SteatoTest, 49.5% NASH or borderline NASH as per NashTest and 43.7% fibrosis as per FibroTest.
- The FibroMax helped to identify previously undiagnosed NAFLD among OSA patients with normal liver enzymes.
- 6 to 12 weeks of treatment with CPAP did not achieve an improvement in the non-invasive markers of liver injury.

Poynard 2015
FibroTest
ActiTest
Awareness

Awareness of liver diseases using FibroTest and ActiTest

Awareness of the severity of liver disease re-examined using software-combined biomarkers of liver fibrosis and necroinflammatory activity.

Poynard T, Deckmyn O, Munteanu M et al from FIBROFRANCE Group. BMJ Open. 2015;5:e010017.

The authors evaluate the relationship between fibrosis, activity, age and sex at a very large scale that would be unattainable using only biopsy: the global database of FibroTest-ActiTest (1,085,657 subjects between 2002 and 2014).

The authors compared two populations from two similar countries in terms of access to treatment of hepatitis: the United States and France.

- Awareness was significantly higher in France compared to the United States in terms of cirrhosis among women born between 1935 and 1944.
- The authors conclude that the noninvasive systematic screening of liver fibrosis should be done for women born before 1945 with a life expectancy over 80 years that are therefore, more likely to develop cirrhosis.

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FibroTest/FibroSure Scientific Publications

Key Publications for 2016

SAF

ready

SAF score is the new simplified histologic classification for the main liver lesions (steatosis, activity and fibrosis) in NAFLD risk patients.

FibroMax = FibroTest + ActiTest + SteatoTest + NashTest + AshTest

FibroMax is a liver panel used in the diagnosis and the follow-up of liver fibrosis, steatosis and inflammations with a blood sample and is done at a local laboratory:

- FibroTest: estimates the liver fibrosis
- ActiTest: estimates the necroinflammatory activity
- SteatoTest: estimates the liver steatosis
- NashTest: estimates the non-alcoholic steatohepatitis
- AshTest: estimates the alcoholic steatohepatitis

Poynard 2016

FibroTest
2D SWE
TE

Applicability of 2D-SWE versus TE and FibroTest

Real-Time Shear Wave versus Transient Elastography for Predicting Fibrosis: Applicability, and Impact of Inflammation and Steatosis. A Non-Invasive Comparison.

Poynard T, Pham T, Perazzo H, et al.; FIBROFRANCE-HECAM. PLoS One. 2016 Oct;11:e0163276.

Authors aimed to compare several criteria of applicability of the real-time shear wave elastography (2D-SWE) to the standard reference, transient elastography (TE), and to assess inflammation and steatosis impact on Real-time shear wave elastography (2D-SWE). FibroTest was taken as the fibrosis reference and ActiTest and SteatoTest as quantitative estimates of inflammation and steatosis.

- The applicability of 2D-SWE (95%CI) 89.6% (88.2-90.8), was significantly higher than that of TE, 85.6% (84.0-87.0; $P < 0.0001$).
- 2D-SWE had results are less impacted of inflammation and steatosis especially in patients with non-advanced fibrosis, as presumed by FibroTest.

Schmid 2015

FibroTest
HIV-HCV
APRI
FIB-4

FibroTest has higher performances than the APRI and FIB-4 in HIV-HCV co-infected

Progression of Liver Fibrosis in HIV/HCV Co-Infection: A Comparison between Non-Invasive Assessment Methods and Liver Biopsy.

Schmid P, Bregenzer A, Huber M, et al. & Swiss HIV Cohort Study (SHCS). PLoS One. 2015;10:e0138838.

This study selected 105 HIV-HCV coinfecting patients among from the national Switzerland cohort study (SHCS), all having had FibroTest and liver biopsy as reference.

- FibroTest diagnostic performance by mean (range) AUROC for cirrhosis was 0.84 (0.75 to 0.92) with a sensitivity 86% and specificity of 72%.
- FibroTest performance was superior to hyaluronic acid for both cirrhosis and advanced fibrosis
- FibroTest has a negative predictive value (NPV) of 90%, higher than the VPN of other tests: TE by Fibroscan (85%), APRI (80%), FIB-4 (80%) or hyaluronic acid (76%).

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FibroTest/FibroSure Scientific Publications

Key Publications for 2016

Haseltine 2015
FibroTest
HCV
APRI
FIB-4

HCV SVR's follow-up with FibroTest, better than APRI and FIB-4

Successful treatment with telaprevir-based regimens for chronic hepatitis C results in significant improvements to serum markers of liver fibrosis.

Haseltine ELI, Penney MS, George S, Kieffer TL. J Viral Hepat. 2015.

This retrospective analysis was performed on 1208 patients from three trials of telaprevir (PROVE3, ADVANCE, REALIZE). All patients had repeated biomarkers before and after 24 weeks of treatment: FibroTest, APRI, FIB-4 and Forns score.

- After the HCV cure, the improvement of the FibroTest score was less than 1 METAVIR stage, unlike the APRI and FIB-4. This suggests that in the monitoring of cured patients, the re-evaluation of fibrosis by FibroTest is more realistic and more reliable compared to tests like APRI and FIB-4, based on transaminase. Too rapid regression of APRI and FIB-4 score seems to reflect more the necroinflammatory improvement than the improvement of fibrosis.

Gudowska 2015
FibroMax
Alcohol

FibroTest
SteatoTest
AshTest

Screening excessive alcohol drinkers with the FibroMax panel

The distribution of liver steatosis, fibrosis, steatohepatitis and inflammation activity in alcoholics according to FibroMax test.

Gudowska M, Wojtowicz E, Cylwik B et al. Adv Clin Exp Med. 2015;24:823-7.

This Polish study was carried out on 142 excessive alcohol drinkers evaluated with FibroMax.

Prevalences of liver injury detected were:

- The prevalence of advanced fibrosis was 15% with 9% of cirrhosis according to FibroTest.
- A third of the heavy drinkers had a significant steatosis according SteatoTest.
- 5% of heavy drinkers had a minimal alcoholic hepatitis by AshTest.

Only one in four subjects had elevated transaminases ALT, underlining once again the importance of using specific fibrosis markers as FibroTest, instead of transaminases.

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FibroTest/FibroSure Scientific Publications

Key Publications for 2016

Bignulin 2016
FibroTest
Liver Transplant

FibroTest for liver transplanted patients

Usefulness of acoustic radiation force impulse and FibroTest in liver fibrosis assessment after liver transplant.

Bignulin S, Falleti E, Cmet S, et al. Ann Hepatol. 2016;15:200-6.

The authors evaluated several non-invasive methods such as ARFI and FibroTest for the diagnosis of liver fibrosis in liver transplant (LT) patients.

This prospective study was carried on 51 LT-patients with chronic hepatitis C. The diagnostic value (AUROC) of FibroTest was very high in LT-patients (0.85) to discriminate between minimum fibrosis (Ishak 0-2) and advanced fibrosis (Ishak 3 -6).

Park 2015
FibroTest
Prognosis
TE
HBV

Prognostic value of combination FibroTest – transient elastography (TE) in HBV chronic carriers

Prognostic value of the combined use of transient elastography and FibroTest in patients with chronic hepatitis B.

Park MS, Kim SU, Kim BK, et al. Liver Int. 2015;35:455-62.

The authors followed up 127 chronic HBV carriers, for the 5 years prognostic value of the combination FibroTest - transient elastography (TE) by Fibrosan to predict liver-related events.

- The combination FibroTest - TE allowed to classify patients into three severity levels in terms of complications: high, intermediate and low risk.
- The combination FibroTest - TE was predictive of events better than the histological score of fibrosis. However, the added benefit of TE in the combination was only marginal compared to FibroTest alone.

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#249 - FibroTest for liver transplanted patients
Bignulin S, Falleti E, Cmet S, et al.

#248 - Prognostic value of combination FibroTest – transient elastography (TE) in HBV chronic carriers
Park MS, Kim SU, Kim BK, et al.

#247 - Prognostic value of the combined use of transient elastography and FibroTest in patients with chronic hepatitis B.
Park MS, Kim SU, Kim BK, et al.