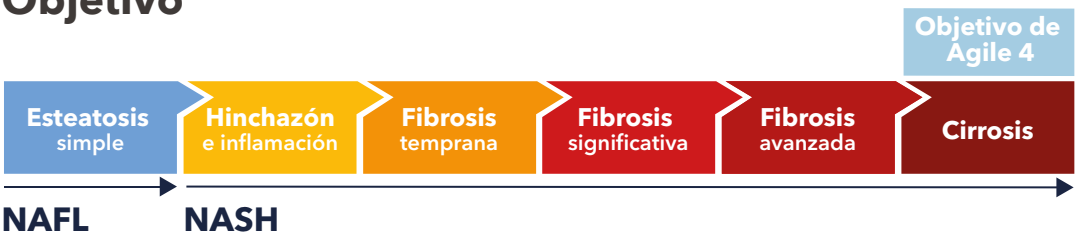
Scores
by echosens

Agile 4

Identificación de cirrosis en pacientes con NAFLD

La cirrosis es una de las principales causas de mortalidad en todo el mundo. La identificación precoz de la cirrosis ayuda a controlar proactivamente la enfermedad mediante pruebas de detección de complicaciones relacionadas con el hígado, como el carcinoma hepatocelular y las varices esofágicas.

Objetivo



Funcionamiento

Rendimiento

- Funcionamiento excelente en pacientes con sospecha de NAFLD en grandes cohortes de derivación y validación de diferentes orígenes geográficos
- Exclusión óptima de pacientes
- Sensibilidad y PPV* optimizados en el área de inclusión de pacientes
- Número bajo de pacientes con resultados indeterminados

La fórmula es pública con una calculadora gratuita disponible en la aplicación myFibroScan

myFibroScan

GET IT ON Google Play Download on the App Store

Aplicación gratuita

Bibliografía:

- Improving diagnosis of cirrhosis in patients with NAFLD by combining Liver Stiffness Measurement (LSM) by Vibration-Controlled Transient elastography (VCTE) and routine biomarkers: a global derivation and validation study, Z.M. Younossi, S.A. Harrison, P.N. Newsome, W.K. Chan, Y. Yilmaz, M.H. Poster AASLD, 2020
- A.J. Sanyal, J. Foucquier, Z.M. Younossi, S.A. Harrison, P.N. Newsome, W.K. Chan, Y. Yilmaz, V. De Ledinghen, C. Costentin, M.H. Zheng, V.W.S. Wong, M. Elkhashab, R.S. Huss, R.P. Myers, A. Labourdette, M. Destro, C. Fournier-Poizat, V. Miette, L. Sandrin, J. Boursier, Enhanced diagnosis of advanced fibrosis and cirrhosis in non-alcoholic fatty liver disease patients with FibroScan-based Agile scores, paper under submission

*PPV: valor predictivo positivo
NAFLD: Enfermedad del hígado graso no alcohólico / NASH: Esteatohepatitis no alcohólica / AST: Aspartato-aminotransferasa
ALT: Alanina-aminotransferasa / LSM: Medición de elasticidad del hígado

CE

Validación clínica AASLD 2020 e ILC 2021

	Derivation cohort	Internal validation cohort	Muticentric US external validation cohort	Multicentric French external validation cohort
N patients	**1434**	**700**	**585**	**1042**
AUROC [95% CI]	0.91	0.89	0.93	0.89
Rule out cut-off	<0.25			
% patients	67%	68%	77%	81%
Se/Sp	0.85/0.82	0.79/0.83	0.87/0.86	0.71/0.88
NPV	0.97	0.96	0.98	0.96
Indeterminate zone	≥0.25 - < 0.57			
% patients	17%	16%	13%	11%
Rule in cut-off	≥0.57			
% patients	17%	16%	10%	8%
Se/Sp	0.55/0.95	0.53/0.96	0.55/0.97	0.44/0.97
PPV	0.63	0.65	0.72	0.68

Se: sensibilidad/Sp: especificidad/NPV: valor predictivo negativo/PPV: valor predictivo positivo

Póster AASLD 2020

Improving diagnosis of cirrhosis in patients with NAFLD by combining liver stiffness measurement by vibration-controlled transient elastography and routine biomarkers: a global derivation and auteurs validation study

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BACKGROUNDS: Currently available noninvasive tests, including FIB-4 and liver stiffness measurement (LSM) by VCTE (FibroScan), are highly effective in excluding cirrhosis yet their ability to rule in cirrhosis is more modest. Our objective was to develop and validate a new score (F4 score), combining LSM with routine clinical parameters to identify cirrhosis in NAFLD patients, with optimized positive predictive value (PPV) and reduced number of cases with indeterminate results.

METHODS: This multi-national, retrospective study included 7 cohorts of adults with suspected NAFLD who underwent liver biopsy (LB), LSM by VCTE, and phlebotomy in either routine clinical practice or during screening for clinical trials. The population was randomly divided into a training set (TS; 2/3 of pool), on which the best fitting logistic regression model was built, and an internal validation set (VS; 1/3 of pool), on which performance and goodness of fit of the model were assessed. An additional cohort from 8 US centers was used as an external VS (NASH CRN). Cut-offs with 85% sensitivity and 95% specificity in the TS were derived to rule out and rule in cirrhosis, respectively.

RESULTS: 2719 patients were included (TS, n=1434; internal VS, n=700; external VS, n=585). The optimal new F4 score combined LSM, AST/ALT ratio, platelets, gender, and presence of diabetes mellitus. Calibration plots for both the internal and external VS did not show misspecification of the model. For the diagnosis of cirrhosis, the AUCs of the F4 score in the TS, internal VS, and external VS were 0.91, 0.89, and 0.93, respectively. In the external VS, the F4 score outperformed LSM and FIB-4 in terms of AUC, percentage of patients with indeterminate results, sensitivity, and PPV to rule-in cirrhosis, while maintaining equivalent performance characteristics to exclude cirrhosis.

CONCLUSION: A novel noninvasive score including LSM by VCTE and routine clinical parameters improves the identification of cirrhosis among patients with NAFLD and may reduce the necessity of liver biopsy in this patient population.

ILC 2021

Prognostic value of Agile scores in patients with non-alcoholic fatty liver disease

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BACKGROUND AND AIMS: Recently, Agile 4 and Agile 3+, two scores combining liver stiffness measurement (LSM) by vibration-controlled transient elastography (VCTE) with routine clinical parameters were proposed to diagnose cirrhosis and advanced fibrosis in NAFLD patients, respectively. The objective of the present work was to assess the prognostic accuracy of Agile 4 and Agile 3+ for the prediction of liver-related events (LRE) and to compare them to LSM alone.

METHOD: This retrospective study included adults with NAFLD from a French tertiary care center who underwent LSM and blood sampling as part of routine clinical practice. The main study outcome was LRE, a composite endpoint combining cirrhosis complication or hepatocellular carcinoma LRE were ascertained by chart review. Cut-off values of Agile 4 and Agile 3+ previously determined (1) and Baveno cut-off values for LSM (10kPa - 15kPa) were used to define the rule-out, indeterminate and rule-in zones at baseline. Kaplan-Meier curves were compared using the Log-rank test.

RESULTS: 341 NAFLD patients were included in the study (median age: 58 years, male sex: 65%, diabetes: 36%). LRE occurred in 27 (7.9%) patients after a median follow-up of 5.2 years (1st and 3rd quartiles: 2.9-7.2). The rate of patients included in the rule-out / indeterminate / rule-in zones of the Agile 3+ and Agile 4 were respectively 56%/15%/29% and 83%/9%/8%. Kaplan-Meier curves (Figure) for Agile 4 and Agile 3+ showed significant differences between the rule-out and the rule-in zones ($p<0.001$ for both) and between indeterminate and rule-in zones ($p\leq0.002$ for both), while the difference between indeterminate and rule-out zones was not significant. By comparison, the rates of patients included in the rule-out / indeterminate / rule-in zones with LSM were 57%/23%/20%.Using LSM, patients experiencing a LRE were initially either in the indeterminate or the rule-in zones and consequently, a significant difference ($p<0.001$) between the rule-out and the indeterminate zone was observed while the difference between the indeterminate and rule-in was less significant ($p=0.03$).

CONCLUSION: Agile 4 and Agile 3+ well predict the occurrence of liver-related events in patients with NAFLD. Particularly, rule-in cut-offs of both scores better identify at-risk patients than LSM alone. These results demonstrate the interest of those scores in the identification of patients requiring hepatocellular carcinoma and esophageal varices screening.