Hepatokine-based identification of fibrotic NASH and improved risk stratification in a multicentre cohort of NAFLD patients

Info

PUBLISHED DATE
2023-08-03

JOURNAL
Liver International

LINK
https://doi.org/10.1111/liv.15686

Authors

Martin Franck Katharina John Sherin Al Aoua Monika Rau Andreas Geier Jörn M. Schattenberg Heiner Wedemeyer Klaus Schulze-Osthoff Heike Bantel

Abstract

Background and Aims The presence of significant liver fibrosis associated with non-alcoholic steatohepatitis (NASH) is regarded as the major prognostic factor in non-alcoholic fatty liver disease (NAFLD). Identification of patients at risk for NASH with significant fibrosis is therefore important. Although the established fibrosis score FIB-4 is suitable to exclude advanced fibrosis, it does not allow the prediction of significant fibrosis in NAFLD patients. We therefore evaluated whether the hepatokine fibroblast growth factor 21 (FGF21), a regulator of glucose and lipid metabolism, might identify 'at-risk NASH' in NAFLD.

Methods

FGF21 levels were assessed by enzyme-linked immunosorbent assay in sera from an exploration (n = 137) and a validation (n = 88) cohort of biopsy-proven NAFLD patients with different disease activity and fibrosis stages. In addition, we evaluated whether the use of FGF21 could improve risk stratification in NAFLD patients with low (<1.3) or intermediate (1.3–2.67) FIB-4.

Results

FGF21 levels could significantly discriminate between NASH and non-alcoholic fatty liver (NAFL) patients, even in the absence of diabetes. Moreover, patients with NASH and fibrosis ≥F2 showed significantly higher FGF21 levels compared to NAFLD patients without significant fibrosis. Significantly elevated FGF21 levels could even be detected in NAFLD patients with NASH and

significant fibrosis despite low or intermediate FIB-4.

Conclusion

Serological FGF21 detection might allow the identification of NAFLD patients at risk and improves patient stratification in combination with FIB-4.