

# Prevalence of frailty in patients with non-cirrhotic non-alcoholic fatty liver disease

Alastair O'Brien

**To cite:** O'Brien A. Prevalence of frailty in patients with non-cirrhotic non-alcoholic fatty liver disease. *BMJ Open Gastro* 2022;**9**:e000951. doi:10.1136/bmjgast-2022-000951

Received 27 October 2022  
Accepted 18 November 2022

The association between advanced liver disease and frailty has been widely documented and frailty itself is associated with an increased risk of cirrhosis progression and death.<sup>1</sup> Indeed, patients on the liver transplant waiting list are encouraged to increase their physical activity prior to surgery. However, these represent the minority of liver disease patients. Naimimohasses *et al*<sup>2</sup> in their well-conducted study using multiple assessment tools in this edition of *BMJ Open Gastroenterology* demonstrate that one-third of patients are frail and one-third 'prefrail' in early-stage non-alcoholic fatty liver disease (NAFLD), and that frailty is more frequently found in female patients. This high prevalence was unexpected, and the mean age of the cohort was relatively young at 56±12 years. These findings are important. Predictably frailty was more common in those with increased liver fibrosis.

There was a high prevalence of cardiovascular disease with hypertension (46%), T2DM (53%) and hypercholesteraemia (61%) in the cohort and it may be that this and obesity (median body mass index was 32.3±9.4kg/m<sup>2</sup>) are more important drivers of the frailty rather than the NAFLD itself. Nevertheless, as the authors state, frailty is important to recognise as it increases the risk of falls, disability and death. They suggest that the incorporation of frailty assessment in the clinical practice can allow earlier diagnosis and rehabilitation strategies that might improve patient care.

However, the assessment process is relatively straightforward, it is the intervention that is the main challenge. Our diet and exercise advice to patients in the clinic regarding obesity probably only provides a marginal effect at most, with a recent Cochrane review found considerable uncertainty about the effects of the lifestyle interventions compared with no additional intervention (to general

public health advice) on any of the clinical outcomes.<sup>3</sup> Frailty interventions requiring rehabilitation regimens are likely to be much more challenging to implement.

It is widely believed that people with simple steatosis rarely progress to advanced liver disease, but those with non-alcoholic steatohepatitis (NASH) may develop cirrhosis.<sup>4</sup> Therefore, the majority of the patients that we see in the clinic are unlikely to die from liver disease per se. Our current 'rushed' model of care focuses on weight, liver blood tests and fibroscan results with most patients reassured they have no significant liver disease and discharged. However, studies have shown that overall life-expectancy is reduced in those with NAFLD, irrespective of the presence or absence of cirrhosis.<sup>5</sup>

Perhaps we should reflect on our purpose as healthcare professionals. Is it to simply risk stratify and provide a few words about diet and exercise, or should we be more proactive with intervention? With an emphasis on efficiency and new methods of practise after the COVID-19 pandemic, perhaps we could start with a change in the focus of NAFLD outpatient care. This will require a more joined-up approach between hospitals, primary care and public health to design strategies to improve healthy eating, exercise and rehabilitation for frailty. This could form a platform to conduct well-designed clinical trials to provide a firm evidence base for our practice, which is currently lacking. As the authors note several studies have identified increased frailty in females with NAFLD and trials of interventions will need to account for this gender effect.

This will require a significant amount of investment, ambition, drive and organisation but ultimately is likely to be cost-effective. In view of the high costs of NAFLD in terms of antiobesity/NASH drugs, not to mention



► <http://dx.doi.org/10.1136/bmjgast-2021-000861>



© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

University College London  
Institute for Liver and Digestive  
Health, London, UK

## Correspondence to

Dr Alastair O'Brien;  
a.o'brien@ucl.ac.uk



cardiovascular disease and advanced liver disease, surely it is time to change our reactive approach and attempt to intervene at a much earlier stage.

**Contributors** AO'B wrote this article.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not applicable.

**Provenance and peer review** Commissioned; internally peer reviewed.

**Data availability statement** No data are available.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

**ORCID iD**

Alastair O'Brien <http://orcid.org/0000-0002-9168-7009>

**REFERENCES**

- 1 Wang S, Whitlock R, Xu C, *et al*. Frailty is associated with increased risk of cirrhosis disease progression and death. *Hepatology* 2022;75:600–9.
- 2 Naimimohasses S, O'Gorman P, McCormick E, *et al*. Prevalence of frailty in patients with non-cirrhotic non-alcoholic fatty liver disease. *BMJ Open Gastroenterol* 2022;9:e000861.
- 3 Buzzetti E, Linden A, Best LM, *et al*. Lifestyle modifications for nonalcohol-related fatty liver disease: a network meta-analysis. *Cochrane Database Syst Rev* 2021;6:CD013156.
- 4 Chalasani N, Younossi Z, Lavine JE, *et al*. The diagnosis and management of non-alcoholic fatty liver disease: practice guideline by the American association for the study of liver diseases, American College of gastroenterology, and the American gastroenterological association. *Hepatology* 2012;55:2005–23.
- 5 Shang Y, Nasr P, Widman L, *et al*. Risk of cardiovascular disease and loss in life expectancy in NAFLD. *Hepatology* 2022;76:1495–505.