Annals of Hepatology 28 (2023) 101159

Contents lists available at ScienceDirect

Annals of Hepatology

journal homepage: www.elsevier.es/annalsofhepatology

Letters to the editor

Brushing your teeth may be good for your liver: Linking oral health to non-alcoholic fatty liver disease

The study by Pischke et al. [1], which explores the relationships between non-alcoholic steatohepatitis (NASH) and periodontitis, warrants commendation. The analysis involved 32 patients with NASH and 100 randomly, sequentially gathered, controls from a local dental clinic. The results revealed a markedly higher incidence of periodontitis among those with NASH. Additionally, liver stiffness measurement (LSM) through transient elastography (TE) had a significant correlation with an increase in specific periodontal parameters such as pocket-probing-depths and bleeding-on-probing. Most notably, the study found that the progression of NASH could be potentially tempered through regular oral health care. Consequently, hepatologists should emphasize to their patients the significance of periodic dental check-ups [1]. Here, we would like to underline the critical role of toothbrushing in maintaining oral health among patients with non-alcoholic fatty liver disease (NAFLD). This routine self-care behavior [2] has been recently demonstrated to have significant implications in a study from our group [3]. Our research revealed that patients with NAFLD who brushed their teeth less than once daily had a notably higher prevalence of LSM values equal to or above 12 kPa, a key indicator of hepatic cirrhosis. Furthermore, we discovered an independent association between less frequent toothbrushing and a TE-established diagnosis of cirrhosis in NAFLD [3]. In a separate investigation, Chen and colleagues [4] discovered a correlation between tooth loss and an elevated risk of both NAFLD and liver cancer. Their findings indicated that for every increase of five in tooth loss, there was a corresponding 5% rise in liver cancer risk, suggesting a linear relationship. Furthermore, the study also pointed to a positive correlation between tooth loss and the risk of liver cirrhosis [4]. These findings collectively underscore Pischke et al.'s perspective [1] that hepatologists should emphasize the importance of regular dental visits. Moreover, patients with NAFLD should be encouraged to maintain oral hygiene by brushing their teeth at least twice daily. Intriguingly, Tanaka et al. [5] suggested a decrease in the risk of developing metabolic syndrome (MetS) – a primary risk factor for NAFLD [6] – with an increase in daily toothbrushing frequency, irrespective of periodontal status. More recently, Yamamoto et al. [7] discovered a relation between frequent toothbrushing and a reduced risk of NAFLD. The connections between toothbrushing habits, oral hygiene, periodontitis, and the severity of NAFLD are biologically plausible, yet their exact foundations remain elusive. In Pischke et al.'s study [1], the correlation between NASH and periodontitis was independent of the presence of specific oral bacteria, such as *Porphyromonas gingivalis* and *Actinobacillus actinomycetemcomitans*. The relationship between oral health behaviors and NAFLD could be tied to broader components of health and socioeconomic status [8]. Another possibility may involve cognitive function. Recent research indicates that NAFLD correlates with diminished cognitive performance across several areas [9], and tooth loss is linked to a significantly elevated risk of cognitive decline [10]. To fully comprehend the complex interplay between oral and liver health, more studies are needed, especially those utilizing the new nomenclature framework set to replace the current NAFLD definition [11–14].

Declaration of Competing Interest

None.

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https://doi.org/10.1016/j.aohep.2023.101159