

REVIEW OF LITERATURE ON COMBINED LIVER ELASTOGRAPHY TECHNIQUES

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Background. Liver elastography has become a pivotal non-invasive method for assessing liver fibrosis, offering an alternative to traditional biopsy. Techniques such as transient elastography (TE), point shear wave elastography (pSWE), and real-time tissue elastography (RTE) have been employed individually. The integration of these modalities, known as 'Liver Elastography Combi,' aims to enhance diagnostic accuracy by leveraging the strengths of each technique.

Materials and Methods Recent studies have explored the efficacy of combining elastography methods. Yazaki et al. conducted a prospective study involving patients scheduled for liver biopsy to evaluate liver fibrosis. They utilized both pSWE and RTE, obtaining liver stiffness measurements (LSMs) and liver fibrosis index (LFI) values, respectively. Biopsy samples were taken from the same area assessed by elastography for histological comparison (<https://pubmed.ncbi.nlm.nih.gov/35735003/>). Another study assessed the combination of TE and the Enhanced Liver Fibrosis (ELF) test in patients with chronic hepatitis B. This study involved 222 patients who underwent liver biopsy, TE, and the ELF test. The diagnostic performance of TE and ELF, both individually and in combination, was evaluated against histological findings.

Results. Yazaki et al. found that both Vs from pSWE and LFI from RTE correlated significantly with liver fibrosis stages. However, in patients with non-alcoholic fatty liver disease (NAFLD), LFI's correlation was less pronounced, suggesting that RTE may be less effective in this subgroup. The study concluded that while combinational elastography is useful, pSWE may be more reliable for assessing liver fibrosis in NAFLD patients.

In the study combining TE and the ELF test, TE demonstrated higher accuracy in detecting advanced fibrosis compared to the ELF test alone. However, the sequential combination of TE followed by the ELF test improved specificity, particularly in diagnosing cirrhosis. This suggests that a combined approach can enhance diagnostic precision in chronic hepatitis B patients.

Conclusions. The integration of multiple elastography techniques offers a more comprehensive assessment of liver fibrosis, capitalizing on the unique advantages of each method. While combinational elastography enhances diagnostic accuracy, its effectiveness may vary among different patient populations, such as those with NAFLD. Further large-scale, multicenter studies are warranted to standardize protocols and validate the clinical utility of these combined approaches across diverse liver diseases.