The Significance of Transient Elastography in the Prevention and Early Detection for Individuals with Nonalcoholic Fatty Liver Disease (NAFLD)

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Background

Obesity-related nonalcoholic fatty liver disease (NAFLD) is a worldwide health issue that can lead to liver fibrosis, cirrhosis, and failure resulting in premature death. Currently, over 90 million people in the U.S. are thought to have NAFLD. Early detection and intervention are key to reverse the disease process.

Newer imaging modalities such as the transient elastography (FibroScan) is a method in which healthcare providers can detect fibrosis and cirrhosis, as measured by the amount of liver stiffness, in individuals with NAFLD. The purpose of this review was to synthesize the literature comparing transient elastography (FibroScan) to invasive and noninvasive diagnostic techniques for the detection of liver fibrosis in people with non-alcoholic fatty liver disease.

PICO Question

For patients with non-alcoholic fatty liver disease, does the use of transient elastography(FibroScan) reduce the instance of disease by early detection and management?

Frameworks

Search terms used within this rapid systematic review included “transient elastography”, “Nonalcoholic fatty liver disease (NAFLD)” and “FibroScan”. Studies included in this review used transient elastography to detect fibrosis, cirrhosis and liver stiffness in individuals with NAFLD.

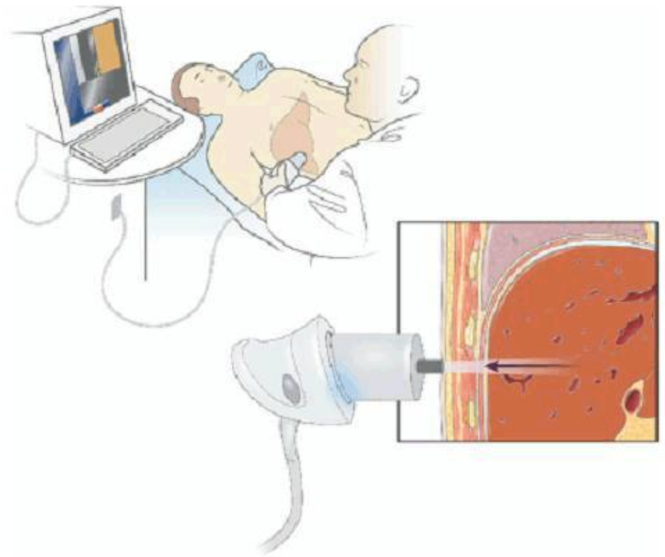

Figure 1. depicts the technique used to measure liver stiffness via transient elastography. [Reproduced from Rockey DC. Noninvasive assessment of liver fibrosis and portal hypertension with transient elastography. Gastroenterology 2008;134:8–14 with permission from Elsevier. Image from Kemp W, Roberts S. Feasibility and performance of the FibroScan XL probe. Hepatology 2012;55:1308–9]

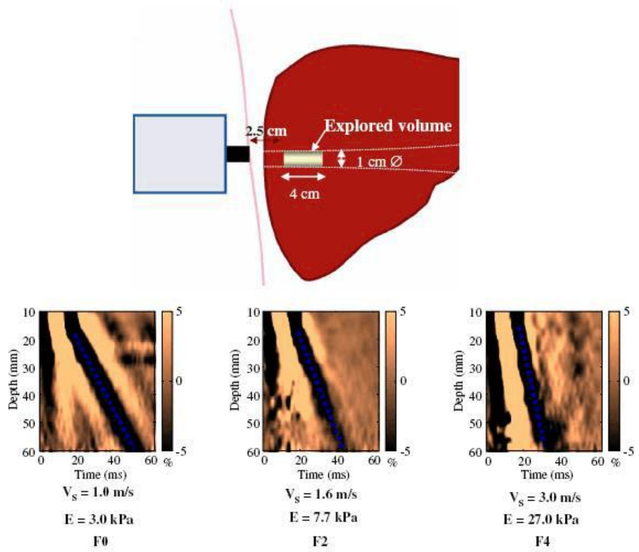

Figure 2. displays examples of liver stiffness. [Reproduced from Castera L, Forns X, Alberti A. Non-invasive evaluation of liver fibrosis using transient elastography. J Hepatol 2008;48:835–47 with permission from Elsevier. Image from Image from Kemp W, Roberts S. Feasibility and performance of the FibroScan XL probe. Hepatology 2012;55:1308–9]

Methods & Design

Databases including PubMed, CINAHL, GoogleScholar and Web of Science were searched for studies published from 2008 to 2019 for a comprehensive review. After reviewing abstracts, 30 articles met the inclusion criteria and were included in this review.

Results

Overall, transient elastography (FibroScan) was found to be a sufficient tool in conjunction and comparison with invasive and noninvasive diagnostic techniques for the detection of liver fibrosis in people with non-alcoholic fatty liver disease.

Conclusions

New imaging such as transient elastography (FibroScan) has been used by healthcare providers to measure liver stiffness. Transient elastography was found to be a sufficient tool in the early detection and prevention of NAFLD.

Nursing Implications

Nurses can have a greater awareness of the tools used to detect liver stiffness which aides in the assessment and data collection for patients with NAFLD. Patient education is key to the prevention and maintenance of NAFLD.

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