MULTIPARAMETRIC ULTRASOUND IN CHRONIC HEPATITIS

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ABSTRACT

Chronic hepatitis is associated with a high risk of liver fibrosis and cirrhosis. This thesis reviews the role of multiparametric ultrasound, including B-mode imaging, Doppler assessment, and elastography, in evaluating disease progression. Literature analysis demonstrates that elastography is an effective non-invasive method for assessing liver fibrosis and detecting cirrhosis. Additional parameters such as tissue viscosity and spleen stiffness improve diagnostic accuracy. Owing to its safety, accessibility, and repeatability, multiparametric ultrasound is a valuable tool for monitoring chronic hepatitis and evaluating treatment response.

Aim

To assess the diagnostic value of multiparametric ultrasound in the evaluation of chronic hepatitis progression and liver fibrosis.

Materials and Methods

The study was based on the analysis of contemporary national and international scientific publications dedicated to multiparametric liver ultrasound, Doppler assessment, and elastographic techniques. The reviewed protocol included B-mode imaging, Doppler examination, and quantitative elastography.

Results

Analysis of the literature demonstrated that elastography provides high diagnostic accuracy in the assessment of liver fibrosis and cirrhosis. The incorporation of additional parameters, such as tissue viscosity and spleen stiffness, improves the differentiation between inflammatory activity and fibrotic changes. Multiparametric ultrasound enables comprehensive evaluation of liver structure and function during a single examination.

Conclusions

1. Multiparametric ultrasound examination is a modern and reliable non-invasive method for the assessment of chronic liver diseases.

2. The application of elastography makes it possible to objectively evaluate the extent of fibrotic changes and identify cirrhosis.

3. This technique can be effectively used for longitudinal patient follow-up and for monitoring treatment effectiveness.

References:

1.Ferraioli G., Barr R.G., Berzigotti A., et al. WFUMB Guideline/Guidance on Liver Multiparametric Ultrasound. Part 1: Update to 2018 Guidelines on Liver Ultrasound Elastography. Ultrasound in Medicine & Biology, 2024.

2.Dietrich C.F., Bamber J., Berzigotti A., et al. EFSUMB Guidelines and Recommendations on the Clinical Use of Liver Ultrasound Elastography, Update 2017. Ultraschall in der Medizin, 2017; 38: e16–e47.

3.Barr R.G., Wilson S.R., Rubens D., et al. Update to the Society of Radiologists in Ultrasound Liver Elastography Consensus Statement. Radiology, 2020; 296: 263–274.

4.European Association for the Study of the Liver. EASL Clinical Practice Guidelines on Non-invasive Tests for Evaluation of Liver Disease Severity and Prognosis: 2021 Update. Journal of Hepatology, 2021; 75: 659–689.

5.Tang A., Cloutier G., Szeverenyi N.M., Sirlin C.B. Ultrasound Elastography and MR Elastography for Assessing Liver Fibrosis. American Journal of Roentgenology, 2015; 205: 22–40.

6.Ferraioli G., Tinelli C., Dal Bello B., et al. Accuracy of Real-time Shear Wave Elastography for Assessing Liver Fibrosis in Chronic Hepatitis C. Hepatology, 2012; 56: 2125–2133.