

MULTIPARAMETRIC ULTRASOUND ASSESSMENT OF CHRONIC LIVER DISEASE: CORRELATING HISTOLOGICAL FEATURES WITH SHEAR-WAVE ELASTOGRAPHY, DISPERSION, ATTENUATION AND SPEED OF SOUND ON A NOVEL IMAGING PLATFORM

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Poster

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A prospective study of 78 patients with suspected chronic liver disease assessed the diagnostic accuracy of multiparametric ultrasound compared to liver biopsy for quantifying steatosis, fibrosis, and inflammation.

KEY POINTS

- Attenuation ultrasound (USAT) demonstrated high diagnostic accuracy for steatosis staging with an AUC of 0.992 for distinguishing mild from moderate-to-severe steatosis (sensitivity 100%, specificity 95.1%), and optimal cut-off values of 0.55, 0.67, and 0.75 for mild, moderate, and severe steatosis respectively.
- Shear wave elastography (SWE) showed good performance in detecting advanced fibrosis ($p = 0.024$), though most patients had no or mild fibrosis, limiting overall diagnostic assessment.
- Speed of sound (TSSI) had moderate performance for steatosis detection (AUC 0.77 for S0 vs S1) and showed a moderate inverse correlation with USAT values ($p = -0.53$, $p < 0.001$).
- Shear wave dispersion (SWD) for inflammation assessment approached but did not reach statistical significance in differentiating no inflammation from mild inflammation, and standard liver function tests correlated only weakly with histological inflammation.
- The authors conclude that further studies are warranted to support multiparametric ultrasound as a non-invasive alternative to liver biopsy for assessing key pathological features in chronic liver disease.

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