

Prevalence and Factors Associated with Liver Fibrosis among Adults with Chronic Hepatitis B Infection at the Mbarara Regional Referral Hospital

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Abstract

Background: The prevalence of chronic hepatitis B is high in low- and middle-income countries, with rates exceeding 8% in sub-Saharan Africa. Liver fibrosis is a crucial stage in the progression of hepatitis B-related liver disease, leading to severe complications like cirrhosis and hepatocellular carcinoma. Transient elastography, a non-invasive test for detecting liver scarring, has improved liver fibrosis assessment, providing a practical alternative to liver biopsy. However, there is limited local data on the prevalence and determinants of liver fibrosis among adults with chronic hepatitis B infection using transient elastography.

Objectives: The aim of this study was to determine the prevalence and factors associated with liver fibrosis among patients with chronic hepatitis B infection at Mbarara Regional Referral Hospital (MRRH).

Methods: We conducted a cross-sectional study from November 2023 to March 2024 at the MRRH hepatitis clinic. We consecutively consented and enrolled patients aged ≥ 18 years who had persistent positive HepBsAg test for more than 6 months. Data on socio-demographic, comorbidities, laboratory parameters were collected and transient elastography was performed. Liver fibrosis was considered in patients who had liver stiffness measurement above 7 kPa.

The prevalence of liver fibrosis was expressed as a percentage. We used logistic regression analysis to determine the factors associated with liver fibrosis.

Results: A total of 96 participants were consecutively enrolled. The median age was 33.5 (IQR 26-42.5) years, and 58 (69.4%) were males. The median liver stiffness measurement was 6 (IQR 4.8-8.0) kPa. The prevalence of liver fibrosis was 35.5% (95% C.I, 26.4-45.5). Having hepatitis B viral load $\geq 20,000$ IU/ml (aOR, 10.9; 95% C.I, 3.2 - 37.2; $p < 0.001$), elevated ALT ≥ 42 IU (aOR, 9.5; 95% C.I, 2.2 - 39.4; $p < 0.002$), and duration of hepatitis B infection for 2 years or more (aOR, 5.0; 95% C.I, 1.6-15.2; $p < 0.004$) are the factors that were independently associated with liver fibrosis.

Conclusion: At MRRH, the prevalence of liver fibrosis among patients with CHB is 35.5% by transient elastography. Hepatitis B viral load $\geq 20,000$ IU/ml, elevated ALT ≥ 42 IU, and duration of hepatitis B infection for 2 years or more was associated with liver fibrosis. We recommend screening and close follow-up for liver fibrosis among patients with chronic hepatitis B with a viral load $\geq 20,000$ IU/ml and a duration of disease of 2 years and above.

Key words: Liver fibrosis, Chronic hepatitis B infection