

# Hepatitis C eradication improves cognitive function in patients with or without cirrhosis: A prospective real-life study

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## Abstract

**Background and purpose:** Hepatitis C virus (HCV) infection is associated with neuropsychiatric disturbances that impact on functioning and health-related quality of life (HRQoL). Reversibility at different liver disease stages is unknown, particularly in cirrhosis. We aimed to evaluate cognition, functioning, and HRQoL following HCV eradication at different liver disease stages.

**Methods:** A random sample (n = 152) of consecutive patients treated with direct-acting antiviral agents (DAAs) between April 2015 and March 2017 were included. A comprehensive neuropsychological assessment, functioning and HRQoL questionnaires were applied at baseline, and 12 and 48 weeks after the end of antivirals.

**Results:** One-hundred thirty-five patients who achieved virological response completed the follow-up, of whom 44 had cirrhosis (27% decompensated). Twenty-one percent had cognitive impairment before starting DAAs (34.1% cirrhotic vs. 14.4% noncirrhotic,  $p < 0.011$ ). Viral eradication was associated with a decrease in cognitive impairment to 23% of cirrhotic and 6% of noncirrhotic patients ( $p < 0.05$ ). Interestingly, older patients ( $B = 0.11$ , 95% confidence interval [CI] = 0.03-0.19) with baseline cognitive impairment ( $B = 3.58$ , 95% CI = 1.54-5.62) were those with higher cognitive benefit, regardless of liver disease. Persistent cognitive impairment was associated with having higher cardiovascular risk, cirrhosis, lower education, and higher anxiety and depression scores. Functioning and HRQoL also improved after eradication but remained worse in the cirrhotic group.

**Conclusions:** Viral eradication decreases the prevalence of cognitive impairment and improves functioning and HRQoL. Patients with lower brain reserve (older patients) and baseline cognitive impairment may benefit the most. Identification and treatment of HCV patients through screening programs may reduce the burden of cognitive disturbances beyond the prevention of liver disease progression.

**Keywords:** HCV; brain dysfunction; cognitive impairment; hepatic encephalopathy; liver cirrhosis.