

# Screening for hepatocellular carcinoma likely to be cost effective

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Surveillance for hepatocellular carcinoma (HCC) by ultrasound is likely to be cost effective in patients with hepatitis C-related liver cirrhosis after they have achieved a sustained virological response (SVR) to direct-acting antiviral agents (DAAs), according to the results of a Canadian study presented today. The study also found that screening is very unlikely to be cost effective in patients with advanced liver fibrosis but without evidence of cirrhosis (e.g. METAVIR stage F3), challenging current clinical practice guidelines.

Hepatitis C virus (HCV) infection is a major cause of HCC worldwide, and although the HCC risk is reduced substantially after SVR, it is not eliminated entirely.<sup>1</sup> Surveillance for HCC among people with HCV infection is considered to be cost effective if the risk of HCC exceeds 1.5% per year prior to SVR; however, after achieving SVR, the values may differ because the risk of liver failure is substantially reduced.<sup>1,10</sup> Current HCV management guidelines recommend biannual [surveillance](#) for HCC for an indefinite period in all patients with stage 3 fibrosis or liver [cirrhosis](#) post-SVR.<sup>11,12</sup>

The study presented today at The International Liver Congress 2018 in Paris, France, evaluated the cost effectiveness of biannual or annual ultrasound screening for HCC in HCV-infected patients who had achieved an SVR after DAAs. A Markov model was developed based on parameters extracted from the literature and expert opinion. Primary outcomes assessed were quality-adjusted life years (QALYs), cost and incremental cost-effectiveness ratio (ICER).

The base case for the study was all patients with advanced fibrosis (F3/F4) in whom the risk of HCC post-SVR is estimated to be 0.5% per year. With this low incidence of HCC, biannual or annual screening after DAA-induced SVR provided an additional 0.16 QALYs (ICER \$84,242/QALY) and 0.15 QALYs (ICER \$53,756/QALY), respectively, putting surveillance near or slightly above the usual willingness-to-pay thresholds (\$50,000/QALY). Using recent data suggesting that the annual incidence of HCC in patients with HCV-related cirrhosis post-DAA-induced SVR may be as high as 1.82%,<sup>13</sup> biannual HCC screening was found to be cost effective (ICER \$40,803/QALY).

To address the challenge that cirrhosis may be difficult to diagnose, the research team also investigated the cost effectiveness of using simple thresholds for aspartate aminotransferase to platelet ratio index (APRI) and FIB4 to assess fibrosis. In contrast, a biannual screening strategy for those with a pre-treatment APRI of 2, even without documented cirrhosis, the annual incidence of HCC was 0.89%, leading to an ICER of \$55,916/QALY for biannual screening.

'The results of our study challenge current [clinical practice guidelines](#) by suggesting that ultrasound surveillance is very unlikely to be cost effective in patients without cirrhosis', said Dr. Hooman Farhang Zangneh from the University of Toronto, Canada, who presented the study findings today. 'However, for patients with cirrhosis, even if diagnosed using only pre-treatment APRI/FIB4, biannual or annual ultrasound surveillance after DAA-induced SVR is likely to be cost effective, particularly if the risk of HCC is found to increase with age. Additional long-term follow-up data will help to identify those at higher risk of HCC post-SVR to further tailor surveillance guidelines'.

'HCC surveillance in HCV patients after sustained virological response is a matter of debate', said Prof. Markus Cornberg from the Hannover Medical School, Germany, and EASL Governing Board Member. 'This

study is important because it emphasizes the importance of HCC surveillance by ultrasound in patients with cirrhosis, even if HCV has been eliminated. However, the study also challenges the need for surveillance in [patients](#) with advanced fibrosis but without cirrhosis'.

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