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Successful Hepatitis C Treatment Improves Liver Cancer Outcomes

People with hepatocellular carcinoma had improved survival after the advent of direct-acting antiviral therapy.

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The prognosis of people with liver cancer related to hepatitis C has improved greatly since direct-acting antiviral (DAA) therapy became widely available, according to study results published in Hepatology Communications.

“The prognosis of [hepatitis C-related hepatocellular carcinoma] drastically improved with the advent of DAAs,” the study authors concluded.

Over years or decades, chronic hepatitis C virus (HCV) infection can lead to serious complications, including cirrhosis and hepatocellular carcinoma (HCC), the most common type of liver cancer. Hepatitis C treatment improved dramatically with the advent of modern DAAs, starting with Olysio (simeprevir) and Sovaldi (sofosbuvir) in late 2013. Today, more than 90% of people with hepatitis C can be cured with interferon-free DAA regimens.

Curing hepatitis C can halt or even partially reverse liver disease progression, but the impact of DAAs on liver cancer outcomes is not well understood. Ryosuke Tateishi, PhD, of the University of Tokyo, and colleagues analyzed the prognosis of HCV-related liver cancer in relation to when antiviral therapy became available.

The researchers enrolled 1,237 people with previously untreated HCV-related HCC who received radiofrequency ablation (a method that uses heat from radio waves to destroy cancer cells) between 1999 and 2019. For comparison, they included 350 people with liver cancer that was not related to hepatitis B or C. A majority were men, and most were in their sixties or seventies.

The study population was split into three groups based on when they received cancer treatment:

- Cohort 1 was treated between 1999 and 2005, before the advent of DAAs;
- Cohort 2 was treated between 2006 and 2013, a period that included the approval of two first-generation DAAs, Incivek (telapravir) and Victrelis (boceprevir), which were used with interferon

and ribavirin;

- Cohort 3 was treated between 2014 and 2019, after the advent of modern DAA regimens that do not require interferon.

Hepatitis C treatment success rates improved over time, with 10% of people in Cohort 1, 26% in Cohort 2 and 74% in Cohort 3 achieving sustained virological response (SVR)—an undetectable HCV viral load after completing therapy—which is considered a cure.

HCV-related HCC treatment outcomes also improved. Three-year survival rates were 82% in Cohort 1, 80% in Cohort 2 and 86% in Cohort 3. The difference was even more apparent for five-year survival rates, which improved from 59% in Cohort 1 to 64% in Cohort 2 to 78% in Cohort 3. In contrast, the control group with liver cancer unrelated to hepatitis B or C showed little improvement.

After adjusting for other factors, both liver-related and overall mortality decreased significantly after the advent of DAAs for people with HCV-related HCC, but mortality did not change significantly for people with nonviral hepatitis. What's more, people with HCV-related HCC in Cohort 3 were less likely to experience liver cancer recurrence after radiofrequency ablation.

"A high proportion of patients with [HCV-related HCC] have achieved SVR over time, which might have an impact on improved prognosis in these patients," the researchers wrote. However, they noted, this study population had early-stage HCC that could be treated with radiofrequency ablation, and further research is needed to determine whether DAA therapy improves outcomes for patients with more advanced liver cancer.

Click here to read the study in Hepatology Communications.
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