Fatty Liver, Alcohol Now the Leading Reasons for Liver Transplants

Transplants due to hepatitis C have dropped dramatically, especially among people with liver cancer.

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Non-alcoholic steatohepatitis (NASH) and alcoholic liver disease (ALD) have become the most common causes of advanced liver disease among people awaiting liver transplants, now exceeding hepatitis C, according to new research.

However, liver disease causes differ substantially between people with and without liver cancer. Among people with this malignancy, ALD is much less common, and hepatitis C remains a major, through declining, cause.

Over years or decades, hepatitis B or C viruses (HBV and HCV), heavy alcohol use, fatty liver disease and other causes can lead to serious complications, including cirrhosis (advanced scarring), hepatocellular carcinoma (HCC, the most common type of liver cancer) and end-stage liver failure that requires a transplant.

Now that infants are routinely vaccinated against HBV and highly effective antiviral medications can cure hepatitis C, non-alcoholic fatty liver disease (NAFLD) and its more severe form, NASH, are responsible for a growing proportion of advanced liver disease, coinciding with rising obesity rates. There are currently no effective medical therapies for NAFLD/NASH or ALD.

Robert Wong, MD, of Alameda Health System in Oakland, California, and colleagues performed an updated analysis of trends in the causes of liver disease among adults awaiting liver transplants in the United States.

As described in JAMA Network Open, the researchers used data from the United Network for Organ Sharing (UNOS), the nonprofit organization that administers the country's Organ Procurement and Transplantation Network. Causes of liver disease were identified using UNOS diagnosis codes. For people who had HCC listed as their primary diagnosis, they also looked at secondary diagnosis codes to determine the underlying cause.

A total of 51,329 adults were registered for liver transplant waiting lists between January 2014 and March 2019. Interferon-free direct-acting antiviral treatment for hepatitis C was introduced around

the beginning of the study period.

About two thirds of the registrants were men. A majority (72%) were white, followed by Latinos (17%), African Americans (8%) and Asians (4%). In the United States, Blacks have a disproportionately high hepatitis C rate, Latinos have a high rate of fatty liver disease and Asians have the highest hepatitis B rate.

During the study period, NASH and alcoholic liver disease became the leading causes of liver disease overall among people on transplant waiting lists, surpassing all other causes by a wide margin. Both NASH and ALD increased steadily over the study period, while hepatitis C declined dramatically. Hepatitis B and other causes accounted for a low and stable proportion of transplants. But there were some notable differences according to HCC status, sex and race/ethnicity.

People With Liver Cancer

Among people with liver cancer, HCV was by far the leading cause of transplants in 2014, but it declined dramatically over the study period. In contrast, NASH rose during these years, and by 2019, the two causes accounted for similar proportions of cases (36% and 35%, respectively). ALD was less common in the cohort without HCC.

Among women with liver cancer, NASH (45% in 2019) surpassed HCV (31%) starting in the second half of 2018. Among men with HCC, HCV (38%) remained more common than NASH (31%), but the difference narrowed over time.

White people with liver cancer had similar proportions of NASH and HCV, followed by ALD (36%, 39% and 13%, respectively, in 2019). Blacks had a higher proportion of HCV compared with the other two causes (23%, 56% and 3%, respectively). Latinos had the highest proportion of NASH, followed by similar proportions of HCV and ALD (44%, 23% and 24%, respectively). Only 1% of whites and Latinos had hepatitis B, but this rose to 10% for Blacks. HBV (48%) was by far the most common transplant cause for Asians with HCC, followed by NASH (20%) and HCV (25%).

People Without Liver Cancer

Among people without liver cancer, 40% of registrants had ALD and 34% had NASH in the first quarter of 2019. While the numbers of people with ALD, NASH and HCV were similar in 2014, the former two causes increased steadily thereafter, while HCV declined steeply, approaching the low rates of HBV and other causes by 2019.

Among women without HCC, NASH (39%) surpassed ALD (29%) as a liver disease cause in 2019, but among men, ALD (48%) was more common than NASH (30%).

Among white people without HCC, 34% had NASH, 7% had HCV and 43% had ALD in 2019. Among Blacks, the corresponding proportions were 11%, 20% and 26%, and 10% had HBV; this was the only group with a high rate of autoimmune hepatitis (17%). Among Latinos, 40% had NASH, 9% had HCV and 35% had ALD. Among Asians, 33% had NASH, 6% had HCV and 22% had ALD; HBV

was also a leading cause, at 27%.

“This study showed that NASH and ALD have become the most common etiologies of liver disease among liver transplant waiting list registrants without HCC, and NASH is becoming a leading indication in patients with HCC,” the researchers concluded.

“Increases in the prevalence of NASH and ALD among registrants on liver transplant waiting lists confirm the alarm previous studies have raised,” they added. “While NASH therapies may be on the horizon, these data continue to highlight the urgent need to better address the dangers of unhealthy alcohol use from a public health perspective.”

Click here to read the study.
