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Risk of Hepatocellular Cancer in Patients with Non-alcoholic Fatty Liver Disease

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Abstract

Background

There are limited data on the risk of hepatocellular cancer (HCC) in patients with non-alcoholic fatty liver disease (NAFLD). We aimed to estimate the risk of incident HCC among patients with NAFLD.

Methods

We conducted a retrospective cohort study from a total of 130 facilities in the Veterans Health Administration. Patients with NAFLD diagnosed between 1/1/2004 and 12/31/2008 were included and followed until HCC diagnosis, death or 12/31/2015. We also identified a gender and age-matched control cohort without NAFLD. We ascertained all new HCC cases from the Central Cancer Registry and manual chart reviews. We calculated incidence rates for HCC by NAFLD status as well as in subgroups of NAFLD patients. We used competing risk models to compare the risk of HCC in patients with vs. those without NAFLD. We reviewed electronic medical records of all HCC cases that developed in NAFLD patients without cirrhosis.

Results

We compared 296,707 NAFLD patients with 296,707 matched controls. During 2,382,289 person-years [PY] of follow-up, 490 NAFLD patients developed HCC (0.21/1000 PY). HCC incidence was significantly higher among NAFLD patients vs. controls (0.02/1000 PY; hazard ratio, 7.62, 95% confidence interval=5.76-10.09). Among patients with NAFLD, those with cirrhosis had the highest annual incidence of HCC (10.6 /1000 PY). Among patients with NAFLD cirrhosis, HCC risk ranged from 1.6 to 23.7 per 1000 PY based on other demographic characteristics; the risk of HCC was the highest in older Hispanics with cirrhosis. In medical record reviews, 20% of NAFLD patients with HCC had no evidence of cirrhosis.

Conclusions

Risk of HCC was higher in NAFLD patients than that observed in general clinical population. Most HCC cases in NAFLD developed in patients with cirrhosis. The absolute risk of HCC was higher than the accepted thresholds for HCC surveillance for most patients with NAFLD cirrhosis.

Keywords:

[Hepatitis](#), [liver cancer](#), [outcome](#), [cohort](#)

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