

Effects of Hypothyroidism on Hepatocellular Carcinoma Inpatient Outcomes: A Population Based Study

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Background

Thyroid hormone plays an essential role in lipid metabolism and regulates hepatic cell functionality. Previous studies have demonstrated a dual promoting and inhibitory effect of thyroid hormone in the progression of various cancers. The impact of concomitant presentation of hypothyroidism and hepatocellular carcinoma has not been clearly established. This study aims to use a propensity-matched analysis to examine inpatient outcomes in cases of hepatocellular carcinoma with hypothyroidism.

Methods

Inpatient diagnoses of malignant hepatocellular carcinoma with and without hypothyroidism were identified from the 2001-2014 National Inpatient Sample. Baseline characteristics were analyzed with Rao-Scott chi-squared and Mann-Whitney tests. Cases of hypothyroidism with hepatocellular carcinoma were propensity matched 1:1 against controls. Multivariable Poisson and logistic regression were used to measure primary outcomes of mortality and length of stay. Secondary outcomes of decompensation complications, procedures performed, and factors associated with mortality were examined.

Results

Among 531,936 cases of hepatocellular carcinoma, 36,376 cases with hypothyroidism were identified. After matching to controls, the mortality rate of hepatocellular carcinoma with hypothyroidism was significantly lower at 7.6% versus 9.9% without hypothyroidism (aOR 0.76, 95% CI 0.67–0.86, $P < 0.001$). There was no significant difference in length of stay, total charges, or disposition. Prevalence rates of liver decompensation complications and frequency and types of surgical intervention were similar among the cohorts.

Conclusions

Inpatients hospitalized with concomitant hepatocellular carcinoma and hypothyroidism have a lower overall mortality rate despite similar degrees of decompensation and interventional procedures performed than cases without hypothyroidism.