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Impact of liver transplantation on the risk of second malignant tumors among hepatocellular carcinoma patients.

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Abstract

BACKGROUND: Population-based data on the development of second malignant neoplasms (SMNs) following the diagnosis of hepatocellular carcinoma (HCC) are uncommon. We evaluated this clinical vignette in HCC patients within the Surveillance, Epidemiology and End Results (SEER) database.

METHODS: The SEER database (1973-2012) was queried using the SEER*Stat program to determine the clinico-pathological features of HCC patients with more than one year survival who developed SMNs. Standardized incidence ratios (SIRs) were calculated to determine the risk of each type of subsequent cancers. Relative risk was assessed to determine the impact of liver transplantation on the development of second malignant neoplasms.

RESULTS: On SIR analysis, the following sites have an enhanced risk of developing an SMN following the diagnosis of HCC: tongue, anal canal, liver, lung, kidney, thyroid, non-Hodgkin lymphoma (both nodal and extra-nodal disease) and acute monocytic leukemia ($P < 0.05$ for all sites). A significantly higher RR was found for the development of lung cancer (RR = 2.096), thyroid cancer (RR = 3.045) and non-Hodgkin lymphoma (RR = 3.822) among patients who underwent liver transplantation compared to those who did not ($P < 0.05$).

CONCLUSION: There is an excess risk for developing a number of SMNs among patients diagnosed with HCC.

KEYWORDS: Liver cancer; non-Hodgkin lymphoma; second malignant neoplasm

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