Survival after treatable hepatocellular carcinoma recurrence in liver recipients: a nationwide cohort analysis

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Background: Survival after post-transplant recurrence of hepatocellular carcinoma (HCC) is dismal, and almost all treatments for recurrent HCC are off-labeled, without an extensive large-scale analysis. We aimed to delineate their post-recurrence courses and define benchmarks for comparing future treatment effectiveness.

Methods: Three national databases, including health insurance, catastrophic illness, and the cause of death, were linked for cohort establishment and data collection during the period from 2005 to 2016. Patients with HCC recurrence >6 months after transplant surgery and under treatment were recruited for survival analysis. Selection of treatment strategies for HCC recurrence after liver transplant was based on the same criteria for those without liver transplant.

Results: Of 2,123 liver transplant recipients, 349 developed HCC recurrence >6 months after liver transplant, and the median recurrence time was 17.8 months post-transplant. Within 2 years of treatment, 61% patients showed recurrence (early recurrence group), and survival in these patients was poorer than in the late recurrence group. According to a multivariable analysis, the transplant era before 2008 and radiofrequency ablation were associated with good prognosis, whereas receiving sorafenib and radiotherapy was associated with poor prognosis. The effect of transplant era became insignificant after stratification by recently receiving pre-transplant transarterial chemoembolization.

Conclusions: Timing of recurrence and interventions used were associated with the outcomes of patients with post-transplant HCC recurrence. These data provide the benchmark and indicate the critical period and high-risk factors for further therapeutic trial consideration.

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