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Analysis of treatment benefits and prognostic factors for posttransplant HCC recurrence in a large Euro-American-Asian cohort

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Abstract

Posttransplant HCC recurrence significantly impacts survival, yet its management is challenging due to limited evidence. With recent advancements in HCC treatment, updated data on managing recurrent diseases are needed. In this retrospective study across 6 centers (2000-2022), we employed Cox proportional-hazards regression and log-rank tests to assess survival differences. A prognostic score model was developed to categorize patient survival. The efficacy of tyrosine kinase inhibitors was evaluated through propensity score matching. In our study, 431 of 3349 (14%) patients with HCC who underwent transplantation developed recurrence within a median interval of 18 (IQR: 9-32) months. One hundred forty-seven (34%) underwent curative-intent treatments, 207 (48%) received palliative treatments, and 77 (18%) were given best-supportive care. Patients undergoing curative-intent treatments had better survival from the time of recurrence with a median survival of 45 (95% CI: 36-63) months and 1/3/5-year survival of 90%/56%/43% compared to those receiving noncurative treatments (median: 11 [95% CI: 10-13] mo, 1/3/5-y survival of 46%/10%/7%, log-rank $p < 0.001$). Patients with recurrence diagnosed in the era 2018-2022 showed improved survival over the previous era (HR 0.64 [95% CI: 0.47-0.86]). Multivariable analysis identified 5 prognostic factors: ineligibility for curative-intent treatment (HR: 3.5 [95% CI: 2.7-4.6]), recurrence within 1 year (HR: 1.7 [95% CI: 1.3-2.1]), poor tumor differentiation (HR: 1.5 [95% CI: 1.1-1.9]), RETREAT score ≥ 3 (HR: 1.4 [95% CI: 1.1-1.8]), and alpha-fetoprotein at recurrence ≥ 400 ng/mL (HR: 1.4 [95% CI: 1.1-1.9]). These factors contributed to a prognostic scoring system (0-9) that stratified patients into 3 prognosis groups. Both propensity score-matched analysis and multivariable regression indicated that lenvatinib was not statistically superior to sorafenib in terms of efficacy. Curative-intent treatments should be advocated for patients with posttransplant recurrence whenever possible. Prognostic factors linked to aggressive tumor biology significantly influence survival. Advancements in HCC management have improved survival outcomes over the past 5 years.

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