EP-41

Long-term survival of elderly patients undergoing curative liver resection for early-stage hepatocellular carcinoma: An international multicenter competing risk analysis

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Introduction: The impact of non-cancer-specific death needs concern when elucidating survival benefits from curative liver resection among patients with hepatocellular carcinoma (HCC), especially for the elderly. This study aimed to evaluate long-term prognosis of elderly patients following curative liver resection for early-stage HCC.

Methods: Patients undergoing curative-intent liver resection for early-stage HCC, which was defined as HCC within Milan criteria, were identified using a multicenter database. Patients were divided into the young (aged < 70 years) and elderly (aged ≥ 70 years) groups. Using Fine and Gray's competing-risk regression model, multivariate analyses were performed to identify the real impact of age on recurrence, cancer-specific death and non-cancer-specific death, respectively.

Results: Among 1,354 patients, 286 (21.3%) and 1,068 (78.7%) were the elderly and the young, respectively. The 5-year cumulative incidence of NCSD of the elderly were higher than that of the young (12.6% vs. 3.7%, $p < 0.001$), while the 5-year cumulative incidences of recurrence and CSD of the elderly were lower than those of the young, respectively (20.3% vs. 21.1%, $p = 0.041$, and 14.3% vs. 15.5%, $p = 0.066$). After adjustment for other confounding risks on multivariate competing-risk regression analyses, age was independently associated with NCSD (subdistribution hazard ratio [SHR], 3.003; 95% confidence interval [CI], 2.082–4.330; $p < 0.001$), but neither associated with recurrence (SHR, 0.837; 95% CI, 0.659–1.060; $p = 0.120$) nor CSD (SHR, 0.736; 95% CI, 0.537–1.020; $p = 0.158$).

Conclusions: For patients undergoing curative liver resection for early-stage HCC, older age was independently associated with non-cancer-specific survival, but not recurrence and cancer-specific survival.

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