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Comparison Of Surgical And Long Term Outcomes After Liver Resection In Patients With NAFLD-HCC Versus HBV-HCC: A Multicenter Matched Analysis

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Background : The incidence of hepatocellular carcinoma(HCC) related to non-alcoholic fatty liver disease(NAFLD) is increasing due to obesity and metabolic disorders. However, there is limited research comparing NAFLD-related HCC (NAFLD-HCC) with hepatitis B virus-related HCC (HBV-HCC). This multicenter study aimed to compare the surgical and long-term outcomes after liver resection(LR) in patients with NAFLD-HCC versus HBV-HCC.

Methods : A total of 1081 patients who underwent curative LR for HCC between 2010 and 2019 at multicenter were retrospectively reviewed. Among them, 85 patients had NAFLD-HCC and 996 patients had HBV-HCC. The study compared the clinical and pathological characteristics, surgical outcomes, overall survival (OS), and recurrence-free survival (RFS) between the two groups. Propensity score matching (PSM) was conducted to adjust for baseline, liver function, and tumor factors.

Results : In the total cohort, NAFLD-HCC patients were older (56.4 vs. 65.4 years, P<0.0001) and had larger tumor sizes (3.5 vs. 4.6 cm, P=0.0053) compared to HBV-HCC patients. NAFLD-HCC patients also had a higher prevalence of metabolic disorders, while the prevalence of cirrhosis was lower (48.1 vs. 7.1%, P<0.0001) compared to HBV-HCC. After LR, NAFLD-HCC patients had a higher rate of major complications (4.1 vs. 9.4%, P=0.0492) and worse OS (5-year OS: 88.1 vs. 74.5%, P=0.001), but similar RFS compared to HBV-HCC. After PSM, there was no significant difference in OS between the two groups (P= 0.180). However, NAFLD-HCC patients tended to have poorer RFS compared to HBV-HCC (5-year RFS: 66.3 vs. 54.1%, P=0.063).

Conclusions : In NAFLD-HCC patients, older age, larger tumor size, and comorbidities were associated with worse OS. However, after matching with HBV-HCC patients, OS was similar. Active HCC surveillance is important in patients with metabolic disorders for early detection. Additionally, caution is necessary during LR in NAFLD patients due to the increased risk of complications associated with fatty liver change.

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