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Significance Of Sarcopenia In Treatment Selection For Intrahepatic Recurrence Of Hepatocellular Carcinoma In Elderly Patients

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Background : Surgery or radiofrequency ablation (RFA) is indicated for patients with intrahepatic recurrence of hepatocellular carcinoma (HCC) Barcelona Clinic Liver Cancer (BCLC) Stage A, while elderly patients may be treated with surgery, RFA, or transcatheter arterial chemoembolization (TACE) for various reasons. We investigated the prognostic impact of sarcopenia on elderly patients with intrahepatic recurrent HCC BCLC Stage A, and the significance of sarcopenia as an indicator of treatment selection.

Methods : We included 65 patients aged 75 years or older with intrahepatic recurrent HCC BCLC Stage A from 2007 to 2020. Twenty-seven patients (41.5 %) had sarcopenia. Patients were classified into the surgery group (22 patients, 33.8%), RFA group (17 patients, 26.2%), and TACE group (26 patients, 40.0%). Sarcopenia was defined as a cutoff of 52.4 cm²/m² in men and 38.5 cm²/m² in women, based on the skeletal muscle index of the third lumbar spine calculated using CT.

Results : (1) Overall survival (OS) rate was not significantly different between the sarcopenia and non-sarcopenia patients ($P = 0.051$). Disease-free survival (DFS) rate was significantly higher in the sarcopenia patients than in the non-sarcopenia patients ($P < 0.001$). (2) The multivariate analysis identified multiple tumors ($P = 0.017$) and sarcopenia ($P < 0.001$) as independent poor prognostic factors of DFS. (3) OS rate was not significantly different between the surgery, RFA and TACE group. DFS rate was significantly higher in the surgery group than in the TACE group ($P = 0.006$). (4) DFS rate was significantly higher in the surgery group than in the TACE group in the non-sarcopenia patients ($P = 0.018$), but not significantly different between the surgery, RFA, and TACE group in the sarcopenia patients. We performed immunostaining on the resected specimens in the surgical group and evaluated tumor-infiltrating lymphocytes. Anti-tumor immune responses were significantly depressed in the patients with sarcopenia (CD4⁺ high: 14.3 % vs. 66.7 %, $P = 0.032$, CD8⁺ high: 0.0 % vs. 73.3 %, $P = 0.002$, CD45RO⁺ high: 0.0 % vs. 73.3 %, $P = 0.002$).

Conclusions : Repeat hepatectomy may improve DFS for intrahepatic recurrence of HCC in elderly patients without sarcopenia. In contrast, surgery did not improve the prognosis for patients with sarcopenia, potentially in part due to the depression of anti-tumor immune responses.

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