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Clinical implication of tumor location in intrahepatic cholangiocarcinoma and assessment of the current staging system

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Introduction : Intrahepatic cholangiocarcinoma (ICC) exhibits a variety of morphologic and histologic growth pattern, and its treatment and prognosis are known to vary depending on the location and extent of tumor. This study aims to compare the clinical data according to the tumor location in ICC and to verify the current staging system used in ICC.

Methods : 302 patients who underwent curative resection were reviewed. Central type ICC (C-ICC) was defined when the tumor had an invasion of intrahepatic secondary confluence or segmental branches of the bile duct and peripheral type ICC (P-ICC) when the tumor was located more peripherally. Clinicopathologic characteristics, oncological outcomes, and prognostic stratification of the AJCC 8th staging system were assessed.

Results : Among 302 patients, 123 were classified as C-ICC and 179 as P-ICC. Bigger tumor size, higher rate of elevated CA19-9 level, vascular invasion, periductal invasion type, R1 rate, and advanced T stage was found in C-ICC. Five-year overall survival rates were 34.0% for C-ICC and 47.5% for P-ICC ($p=0.005$). A significant difference in disease-free survival was seen as well ($p=0.036$).

The prognostic utility of ICC T stage was assessed in N0 C-ICC but failed to stratify T2, T3, and T4 tumors (median survival; T2: 37m. T3: 34m. T4: 33m. $p=0.591$). When applying the perihilar cholangiocarcinoma staging system ($p<0.001$), stratification was improved and similar results were also seen in the overall staging.

Conclusions : C-ICC has a worse aggressive clinical course compared to P-ICC. The perihilar cholangiocarcinoma cancer staging system is better than ICC staging to stratify the prognosis of C-ICC.

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