

Risk Factors for Recurrence in Patients with Pathological T1a (pT1a) Renal Cell Carcinoma

Introduction and Objective: Patients with pT1aN0M0 renal cell carcinoma (RCC) rarely metastasize and generally have favorable clinical course after surgery. However, in fact, metastatic lesion appears postoperatively in a few patients with pT1a RCC. The present study was undertaken to determine risk factors for predicting recurrence in patients with pT1aN0M0 RCC.

Materials and Methods: We reviewed 133 patients with pT1aN0M0 RCC who underwent radical nephrectomy or partial nephrectomy in our institute since 1990 (median follow-up=57.8 months). Clinicopathological factors including age, gender, tumor size, histological type, tumor grade, microvascular invasion, histological tumor necrosis, C-reactive protein levels, and ECOG performance status were reviewed. These factors were compared between patients with recurrence (n=5, 3.8%) and those without (n=128). Recurrence-free survival (RFS) rates and cause-specific survival (CSS) rates were calculated by Kaplan-Meier method. To determine independent factors predicting recurrence in patients with pT1aN0M0 RCC univariate and multivariate analyses were performed by cox's proportional hazards model.

Results: The 5-year RFS and CSS rates were 97.2 and 99.1%, respectively. When clinicopathological factors were compared between patients with recurrence and those without, tumor size (3.5 ± 0.4 vs. 2.8 ± 0.7 cm, $p=0.0390$) and percentage of tumor necrosis (60 vs. 3.1%, $p<0.0001$) were significantly different between the two groups. All patients who recurred had primary lesions ≥ 3 cm. By univariate analysis, tumor size ($p=0.0379$) and presence of tumor necrosis ($p=0.0319$) were significant predictors for recurrence. And only tumor necrosis ($p=0.0143$) was independent predictors for recurrence by multivariate analysis. When we additionally evaluated patients with pT1b tumors ≤ 5 cm (recurrence rates=16.8%, median follow-up=52.4 months, n=48), percentage of tumor necrosis was significantly different between patients with recurrence and those without (50 vs. 15%, $p=0.0261$), suggesting that tumor necrosis is an important predictor for recurrence in low-stage tumors.

Conclusions: Although a possibility of recurrence is low in pT1a RCC, tumor size ≥ 3 cm and presence of tumor necrosis appeared to be important risk factors for recurrence. Especially, patients who had pT1a RCC with histological tumor necrosis should be followed up carefully.