Clinical Significance of Preoperative Total Serum Cholesterol Level in Patients with Nonmetastatic Renal Cell Carcinoma

Introduction and Objective: Several studies have shown an association between low serum cholesterol level and cancer mortality. However, a study to elucidate the prognostic significance of serum cholesterol level in patients with nonmetastatic renal cell carcinoma (RCC) has not been performed. The aim of this study was to investigate the association between total serum cholesterol (TSC) level and prognosis in patients with nonmetastatic RCC.
Materials and Methods: We retrospectively reviewed the records of 348 patients with nonmetastatic RCC who underwent nephrectomy. TSC level was determined before the operation. The association among TSC level, age, gender, presentation mode, tumor size, clinical stage, performance status (PS), other laboratory variables, and oncological outcome (cancer-specific survival [CSS] and recurrence-free survival [RFS]) was analyzed.
Results: Preoperative mean ± standard deviation (SD) TSC level was 193 ± 37.8 mg/dl. The TSC level was positively correlated with body mass index. On the other hand, preoperative TSC level was inversely correlated with tumor size, pathological tumor stage, nuclear grade, and C-reactive protein level. The 10-year RFS rate of patients with TSC < 160 was significantly lower than that of patients with TSC ≥ 160 (55.0% vs. 75.1%, P = 0.002). Furthermore, the CSS rate of patients with TSC < 160 was significantly lower than that of patients with TSC ≥ 160 (73.5% vs. 92.7%, P < 0.0001). However, preoperative TSC level was not an independent predictor for RFS and CSS on multivariate analyses.
Conclusions: Low preoperative TSC level is associated with poor prognosis in patients with nonmetastatic RCC.