Impact of Histopathologic Variants on Survival of Patients with Metastatic Urothelial Carcinoma

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Aim: The aim of our study was to investigate the clinical and prognostic impact of histopathologic variants of metastatic urothelial carcinoma patients treated with systemic chemotherapy.

Methods: A retrospective analysis of the in-hospital database was performed in Kaohsiung Chang Gung Memorial Hospital for the period January 1997 to December 2013. We enrolled a total of 206 patients who received systemic chemotherapy for metastatic urothelial carcinoma. Histopathologic types were categorized as pure urothelial carcinoma (PUC, n = 151) or variants of urothelial carcinoma (VUC, n = 55). We analyzed overall survival (OS) and progression-free survival (PFS) by Kaplan-Meier analysis and Cox’s proportional regression models.

Results: The median follow-up was 25.2 months. The most common histopathologic variants were squamous differentiation that accounted for 72% of all variants. Patients with VUC were more likely to have renal pelvis location (44% vs. 24%, p = 0.004) and chronic renal insufficiency (40% vs. 23%, p = 0.02) than those with PUC. All patients received at least one-line of chemotherapy, and the most common regimens were gemcitabine/cisplatin (GC) and methotrexate/vinblastine/doxorubicin/cisplatin (MVAC). On univariable analysis, the median OS of VUC patients were significantly better than PUC patients (16.2 vs. 11.2 months, p = 0.003). The median PFS of first-line chemotherapy were 6.2 months and 4.0 months for PUC and VUC, respectively (p = 0.004). On multivariable analysis, patients with VUC showed independently decreased OS compared with those with PUC (HR 1.54, 95% CI 1.03-2.3, p = 0.035).

Conclusions: In metastatic urothelial carcinoma patients treated with chemotherapy, histopathologic variants showed a significant role in predicting worse survival than pure urothelial carcinoma.

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