Ureteroscopic and Extirpative Treatment of Upper Urinary Tract Urothelial Carcinoma: 15 Year Comprehensive Review of 160 Consecutive Patients

Introduction and Objectives: We present long-term oncologic outcomes of all patients treated surgically for Upper Urinary Tract Urothelial Carcinoma (UTUC) over a 15 year time period.
Materials and Methods: All patients (N=160) treated from January 1996 to August 2011 by a single surgeon (MG) were prospectively studied and placed into three distinct groups after initial diagnostic ureteroscopy (URS); Group 1 (N=66): low grade lesions treated with URS, Group 2 (N=14): high grade lesions palliatively treated with URS, and Group 3 (N=80): extirpative surgery (nephroureterectomy (NU)). Statistical analysis was performed using Kaplan-Meier methodology to calculate overall survival (OS), cancer specific survival (CSS) and metastasis-free survival (MFS).
Results: Median patient age was 73 years, with a mean follow-up time of 38.2 months (range 1-185). At initial diagnostic URS, 71 (44.4%) patients presented with high grade and 89 (55.6%) patients presented with low grade disease. The 2, 5 and 10 year CSS for all patients with low grade disease was 98, 87 and 81%, with a 2, 5, 10 year CSS of 97, 87 and 78% for the URS treated group (Group 1) not significantly different than those patients with low grade disease treated with NU (Group 3) (p=0.54). Of the patients treated ureteroscopically for low grade disease, 10 (15.2%) progressed to high grade disease at a mean time of 38.5 months. Patients with high-grade disease treated with NU had a 2, 5, and 10 year CSS of 70, 53 and 38%, with MFS of 55, 45 and 35%. Median survival of patients with high-grade disease treated with palliative URS was 29.2 months with a 2 year OS of 54%. On multivariate analysis only high grade lesions on initial presentation was found to be a negative predictor of OS and CSS ($p<.0001$, HR = 7.27, 95%CI 3.3-15.7).
Conclusions: Grade is the most significant predictor of OS and CSS in those with UTUC, regardless of treatment modality. Ureteroscopic and extirpative therapy are acceptable options for those with low-grade disease showing excellent long term CSS. Extirpative therapy has relatively poor long-term CSS in patients with high grade disease, underscoring the need for adjuvant or neoadjuvant therapies.