

SUO WINTER MEETING 2017

#1228

IDENTIFYING THE RATE AND RISKS OF CHRONIC KIDNEY DISEASE DEVELOPMENT AFTER CYTOREDUCTIVE NEPHRECTOMY

Christopher Martin BS¹, Eric Mayer MD², Robert Uzzo MD³, Brian Lane MD, PHD⁴, Alexander Kutikov MD³, Marc Smaldone MD³, Jason Gee MD⁵, Larry Karsh MD⁶, Thomas Gardner MD⁷, Viraj Master MD⁸, William Huang MD⁹, Jeffrey Holzbeierlein MD¹⁰, Neal Shore MD¹¹ and William Lowrance MD, MPH¹²

¹Division of Urology, Department of Surgery, University of Utah, Salt Lake City, UT; ²David Geffen School of Medicine at UCLA, Los Angeles, CA; ³Fox Chase Cancer Center, Philadelphia, PA; ⁴Spectrum Health Urology Group, Grand Rapids, MI; ⁵Lahey Clinic, Burlington, MA; ⁶Urology center of Colorado, Denver, CO; ⁷Indiana University, Indianapolis, IN; ⁸Emory University, Atlanta, GA; ⁹New York University Medical Center, New York, NY; ¹⁰Kansas University Medical Center, Kansas City, KS; ¹¹Carolina Urologic Research Center, Mt Pleasant, SC; ¹²Huntsman Cancer Institute, Salt Lake City, UT

Introduction and Objectives:

Radical cytoreductive nephrectomy has been shown to improve overall survival in patients with metastatic renal cell carcinoma (mRCC). While radical nephrectomy in localized tumors has been estimated on recent meta-analysis to have a 32% risk of chronic kidney disease (CKD) development, treatment outcomes in patients with more advanced disease have not been adequately assessed. Using patients enrolled in The Autologous Dendritic Cell Immunotherapy (AGS-003) Plus Standard Treatment of Advanced Renal Cell Carcinoma (ADAPT) trial that received cytoreductive nephrectomy in the metastatic setting, we intend to study the effect of this procedure on renal function in patients with mRCC.

Methods:

Patients were identified based on screening for the ADAPT trial undertaken from 2012–2015. Of the initial 1148 screened patients, 450 were enrolled in the trial. However, preoperative creatinine was unavailable for 5 of these patients. Our study also excluded patients with an abnormal estimated glomerular filtration rate (<60ml/min/1.73 m²) prior to nephrectomy. Univariate logistic regression analysis was used to evaluate the impact of patient and disease specific factors on post-operative renal function.

Results Obtained:

Our cohort included 371 patients; 15 underwent partial nephrectomy and 354 underwent radical nephrectomy (surgical approach was unknown for 2 patients). 169 patients (45.5%) developed chronic kidney disease stage 3 or worse (<60ml/min/1.73 m²) with short-term follow up. Factors associated with post-operative glomerular filtration rate <60ml/min/1.73 m² were: age (p=<0.001), hypertension (p=0.005), Charlson Comorbidity Index score (p=<0.001), prior history of nephrolithiasis (p=0.021), and presence of liver metastasis (p=0.004).

Conclusions:

Our findings indicate that nearly half of patients with mRCC develop new CKD after cytoreductive nephrectomy. This risk appears more pronounced than treatment in lower stage tumors. Older patients and those with a history of hypertension and a higher comorbidity index appear to be at an increased risk of post-operative CKD. This has important implications as renal replacement therapy could be a competing factor for morbidity and mortality in these patients. More follow-up is needed to better understand the long-term impact of these findings.

Funding: ARGOS Industry Funding for the ADAPT trial