

Stereotactic Body Radiation Therapy for upper urinary tract Transitional cell carcinoma

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Abstract

Background: Transitional cell carcinoma (TCC) accounts for more than 95% of urothelial tumors of the upper urinary tract. Radical nephroureterectomy is the gold-standard therapy for upper-tract cancers. There is no previous data on the use of modern radiotherapy for upper urinary tract TCC. The objective of this study is to present our experience in the treatment of this disease using SBRT.

Materials and Methods: Four patients with early stage and low- to high-grade unilateral obstructive ureter TCC and one patient with primary TCC of the renal pelvis were treated with SBRT. All patients were not candidates for surgical resection. Ages ranged from 73 to 93 years-old. Patients received 40 Gy in 8 daily fractions to the ureter. Normal tissue constraints were set as per the RTOG 0348 protocol. Charts were reviewed for evaluation of symptoms and development of toxicity using the CTCAE v3.0, serum creatinine measurements, and changes on tumour sizes based on abdominal CT-scans using the RECIST v1.1.

Results: Treatments were delivered with no undue complications. Acutely, two patients presented with grade 1 diarrhoea. No chronic side effects were observed. No increased creatinine levels were observed. CT-scans showed that 2 patients had stable disease at 2-3 months, one patient had partial response at 6 months, one had complete response at 10 months. One long-term survivor has no evidence of disease 6 years after treatment. Two patients died for causes unrelated to their ureter cancer, and one died 1 year after radiotherapy from complications related to metastases from the tumour of the renal pelvis. All patients remained free of obstructive symptoms.

Conclusions: This small case series suggests that SBRT for upper urinary tract TCC is safe and might be beneficial at reducing tumour size. Further larger scaled studies are warranted.

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