

The Impact of Urinary pH on Tumor Recurrence after Intravesical Mitomycin C Therapy for Non-muscle Invasive Bladder Tumor within Postoperative 24 Hours

Introduction and Objective: The study aims to evaluate the impact of urinary pH on tumor recurrence in patients with non-muscle invasive bladder urothelial carcinoma (NMIBC) who underwent transurethral resection and intravesical Mitomycin-C (MMC) therapy within postoperative 24 hours.

Materials and Methods: We retrospectively analyzed the records of 49 patients with NMIBC. All patients received tumor resection and intravesical MMC therapy within postoperative 24 hours. We followed these patients by urine cytology and cystoscopy every three months. End points were time to recurrence or radical cystectomy. The urine was obtained before MMC administration.

Results: There were 28 patients with urinary pH greater than or equal to 7 (group 2) and 21 patients with pH less than 7 (group 1). Four patients (19.0%) in group 1 had tumor recurrence and 8 patients (28.6%) in group 2 had recurrence. The tumor recurrence-free survival reported 21.9 ± 10 months in group 1 and 29.17 ± 18.8 months in group 2 ($p=0.54$). We found no significance for age, gender or urinary pH as outcome predictors, except high grade tumor.

Conclusion: Urinary pH may not be a risk factor of tumor recurrence for patients who receive intravesical MMC therapy within 24 hours after transurethral resection for NMIBC.

Table 1

Urine PH	PH \geq 7	PH < 7
Number	28	21
Mean Age (y)	69.32	63.95
Ta/T1	1/27	3/18
Low grade(Ta/T1)	7(0/7)	4 (1/3)
High grade(Ta/T1)	21(1/20)	17(2/15)
Recurrence in low grade	3/7(42.9%)	0/4
Recurrence in high grade	5/21(23.8%)	4/17(23.5%)
Bladder recurrence	8(28.6%)	4(19%)
Mean RFS	29.17 mo \pm 18.8	21.9 mo \pm 10

RFS= Recurrence-free survival, mo= months