

Lower Urinary Tract Symptoms in Women with Cervical Cancer Receiving Radiotherapy with Curative Intent: A Prospective Observational Study

Introduction and Objective: The objective of this study was to determine the prevalence and cause of lower urinary tract symptoms (LUTS) in women with advanced cervical cancer treated with radiotherapy (RT).

Materials and Methods: A prospective observational study was conducted on 102 women with squamous cell carcinoma of the cervix (mean age 48.2 years, range 23-79) seen February 2010 through April 2011. Patients received external beam RT to the pelvis and intra-cavitary high dose rate brachytherapy with curative intent (total RT dose = mean 69.3Gy, median 74Gy, range 21.4-79Gy). Cisplatin chemotherapy for radiosensitization was given in 85% of patients. Mean follow-up after RT was 7 months (range 2-23). The international prostate symptom score (IPSS) was used to quantify LUTS. Statistical analysis was performed with Fisher's exact test for contingency tables, Mann-Whitney test for nonparametric variables and Wilcoxon matched-pairs signed-ranks test for paired data. Values are expressed as mean (range) or proportions (%).

Results: The cervical cancer was Stage 1-2 in 47.5% of patients, stage 3-4 in 52.5%, grade 1 in 3%, any grade 2 in 35%, any grade 3 in 62%. During follow-up there was an increase in the proportion of patients with urinary frequency (29% to 46%, $p=0.046$), nocturia (64% to 88%, $p=0.028$), urgency (26% to 57%, $p=0.027$) and a decrease in the proportion with macrohaematuria (9.9% to 0%, $p=0.031$) and microhaematuria (36.7% to 11.5%, $p=0.017$). At 3-month compared with 6-month follow-up, non-bladder toxicity decreased from 51.2% to 33.3% ($p=0.0412$). Comparison of stages 1-2 vs. 3-4 and total RT dose <74 vs. >74Gy is shown in the Table.

At baseline	Stage 1-2 N = 47	Stage 3-4 N = 52	p-value
Total RT dose (Gy)	67.5 (26-75)	71.5 (21.4-79.0)	0.0001
Dysuria	8.7%	27.5%	0.020
Frequency	28.3%	27.5%	NS
Nocturia	47.8%	76.5%	0.006
Urgency	23.9%	27.5%	NS
IPSS total	7.2 (0-27)	9.0 (1-30)	NS
IPSS irritative	4.7 (0-13)	5.9 (1-15)	NS
Urinary tract infection (UTI)	26.3%	44.2%	NS
At 3 month follow-up	Stage 1-2 N = 25	Stage 3-4 N = 21	
Frequency	20%	73.9%	0.0004
Urgency	8.3%	52.4%	0.002
IPSS total	5.1 (0-22)	11.2 (1-30)	0.003
IPSS irritative	3.4 (0-13)	8.2 (0-15)	0.002
UTI	13%	50%	0.016
At 3 month follow-up	Total RT dose <74Gy N = 23	Total RT dose >74 Gy N = 25	
Frequency	39.1%	53.8%	NS
Urgency	22.7%	36.0%	NS
IPSS total	7.4 (0-26)	8.2 (1-30)	NS
IPSS irritative	5.0 (0-14)	6.3 (0-15)	NS
UTI	27.3%	20%	NS

Conclusions: In patients with cervical cancer receiving RT with curative intent, irritative LUTS at baseline is related to stage of disease, and during follow-up it is related to stage of disease and presence of UTI rather than the dose of RT given.

