

POST-PROSTATECTOMY URINARY INCONTINENCE: A PROSPECTIVE STUDY TO EVALUATE PREVALENCE, RISK FACTORS AND QUALITY OF LIFE (QOL)

Hypothesis / aims of study

Urinary incontinence after radical prostatectomy is related to sphincter damage and/or bladder dysfunction. Currently, little is known about the risk factors for the development of UI and how to predict its occurrence following surgery.

The prevention and treatment of post-prostatectomy still remains as a challenge in urology. Herein, we intend to evaluate prevalence and to identify risk factors for incontinence, by comparing clinical data of patients with or without post-prostatectomy urinary incontinence. Additionally, we focus on evaluating quality of life in this group of patients. We hypothesized that the pre and post-operative pathological criteria (number of positive cores after prostate biopsy, final TNM classification, Gleason score) and clinical parameters, such as pre-operative lower urinary tract symptoms (LUTS), could be predictive of post-prostatectomy UI.

Study design, materials and methods

From January 2011 to December 2012, the charts of 50 consecutive patients who underwent open radical prostatectomy were reviewed. Complete clinical data, including age at surgery, pre-operative report of LUTS, prostate volume, pathological stage and grade, extra-prostatic tumor extension, adjuvant radiotherapy, and length of follow-up were collected.

Continence status and the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) score were determined based on the last clinical visit and telephone interview. UI was defined by any report of leakage, independently of pad usage. Incontinence was defined in the patients as mild (using 1 to 2 pads per day), moderate (3 to 5 pads per day) and severe (more than 5 pads per day). Student's t-test was used to statistically compare continuous variables and chi-square test to compare categorical variables. Statistical Packet for Social Sciences version 13.0 for Windows (SPSS Inc., Chicago, IL, USA) was used for statistical analysis. All differences with a p value less than 0.05 were considered statistically significant.

Results

Patients had a median age of 66.95 years at surgery (SD +/- 7.87, range 37-77) and had a median postoperative follow-up of 14.9 months (SD +/- 3.46, range 4 to 21).

Most patients (28 out of 50) had only one prostate biopsy before surgery. The most frequent Gleason score after prostate biopsy was 7 (62,5%). This has also been demonstrated after radical prostatectomy (63,8% of patients had Gleason score 7). Mean number of positive cores after prostate biopsy was 4,06 (SD +/- 2,39, range 1-10).

According to TNM system, 63,8% of patients were classified as T2 (bilateral tumor), 34% as T3 (extra-prostatic extension) and 2,1% as T4 (tumor fixed or spreading to adjacent structures). Eight patients had seminal vesicle invasion (16%).

Thirteen patients needed adjuvant radiotherapy (26%) and 5 needed androgen-blockage (10%).

28 of 50 (56%) patients reported urinary incontinence at the time of the last follow-up. Urinary incontinence was classified as mild in 67,9% of patients.

Factors such need for multiple biopsies before surgery (p=0.15), Gleason score (p=0.5), number of positive cores after prostate biopsy (p=0.45), apical positive cores (p=0.96), TNM staging (p=0.52), extraprostatic extension (p=0.29), seminal vesical invasion (p=0.6), need for adjuvant radiotherapy (p=0.39) or androgen blockade (p=0.31), report of week urinary stream (p=0.75) or urinary urgency (p=0.73) before surgery were not found to have a significant effect on continent status.

Age was not a predictor factor for urinary incontinence (mean age of patients with UI = 67.48+/-8.4 years; mean age of patients without UI = 66.15+/-7.01 years; p = 0.57). Final prostate weight, which was reported by pathological examination, was also not associated with post-prostatectomy UI (mean prostate weight in patients with UI = 53.51+/-21.35 grams; mean prostate weight in patients without UI = 59.66+/-31.16 grams; p = 0.42).

Mean ICIQ-SF score was 9.5 points in patients who reported urinary incontinence (SD +/- 5.94, range 1-21). Mean ICIQ-SF score was higher in patients with moderate to severe urinary incontinence (15.4+/-6.06) when compared to those with mild urinary incontinence (6.3+/-4.2) (p=.001). This finding supports our belief that moderate to severe urinary incontinence has a huge negative impact on QoL.

Table 1. Quality of Life in Patients with Post-Prostatectomy Urinary Incontinence

Severity of Urinary Incontinence	Number of patients	ICIQ-Short Form score±SD*	P value**
Mild	15	6.33±4.2	-
Moderate to Severe	5	15.4±6.06	0.001

* SD = Standard Deviation

** 2-tailed significance Student's T-Test

Interpretation of results

Urinary incontinence (UI) following radical prostatectomy for prostate cancer has become an increasing concern due to the rising number of prostatectomies being performed nowadays and the associated impairment on quality of life. Reported rates of post-prostatectomy UI range between 2 to 50%, although the definition of incontinence and reporting patterns have been variable (1). In the present study, the definition of UI was rather liberal and included any report of leakage, despite of the use of absorbents. The prevalence of mild urinary incontinence was high after radical prostatectomy at a short followup.

It has been suggested that prostate apical involvement by the tumor could be associated with post-prostatectomy urinary incontinence, but this hypothesis has not been confirmed by our series. In contrast to other studies, our study did not find a clear association between patient age and prostate weight with development of UI. However, one of the potential limitations of this series is the relative small number of enrolled patients.

According to the ICIQ-SF scores, it has been possible to observe the negative impact imposed by urinary incontinence on quality of life. Indeed, moderate to severe UI caused a huge impacts on QoL scores.

Concluding message

This prospective series failed to demonstrate any association between clinical and pathological data with development of post-prostatectomy urinary incontinence. Moderate to severe urinary incontinence was associated with significant negative impact on QoL scores. Patients should be given clear guidance on the risk of developing urinary incontinence after radical prostatectomy, as well as on the potential impairment to the quality of life.

References

1. Herschorn S. Update on management of post-prostatectomy incontinence in 2013. Can Urol Assoc J. 2013 Sep;7(9-10 Suppl 4):S189-S191. Review.

Disclosures

Funding: None **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** ISCMPA Ethics Committee **Helsinki:** Yes **Informed Consent:** No