

AN IN DEPT ANALYSIS OF POST PROSTATECTOMY INCONTINENCE USING THE INTERNATIONAL CONSULTATION ON INCONTINENCE QUESTIONNAIRE

Hypothesis / aims of study

Bothersome urinary symptoms are a common side effect of radical prostatectomies but reported incidence rates vary widely and are the subject of much discussion. One reason for this is that most studies employ a dichotome outcome by simply categorizing patients as continent or incontinent using a variety of different definitions. Clinical experience, however, shows that the picture may be more complex. The purpose of this study was to evaluate post prostatectomy incontinence using the validated "International Consultation on Incontinence Questionnaire" (ICIQ) along with additional questions relating to patient expectations, sexual activity and alcohol intake.

Study design, materials and methods

The study was a part of a single centre, cross sectional questionnaire based study at a large university Hospital, conducted between December 2012 and February 2013. The study population was predefined as patients who had undergone radical prostatectomy at our department between 3 months and 3 years prior to the study initiation. Preoperative urinary function of the participants had been evaluated using the Danish Prostate Symptom Score (DANPSS), which is a validated, multi component instrument designed to assess storage, voiding, and incontinence symptoms. Disease characteristics and information regarding the surgeries were retrieved from hospital records.

A questionnaire was designed to capture information regarding demographics, co-morbidity, patient behavior and satisfaction, sexual aspects, and urinary function. Continence outcomes were assessed by the ICIQ, which provides scores from 0 to 21 with higher scores correlating with higher degrees of incontinence. Furthermore, the questionnaire provides information on the type of incontinence. In addition, we included 1 question designed to assess if post operative continence lived up to preoperative expectations, 1 question on the influence of incontinence on sexuality, and 2 questions on the influence of alcohol consumption on incontinence. These questions were tested using 6 face to face interviews and were further validated by a test-retest questionnaire mailed to 75 randomly chosen participants 4-6 weeks after their initial reply.

Questionnaires were mailed to 386 patients and 314 questionnaires (81%) were returned. A total of 308 (79%) were eligible for the analysis of incontinence. Descriptive statistics were performed regarding demographics, disease characteristics and continence outcomes. A multiple linear regression analysis was performed to identify independent predictors of a high ICIQ score after surgery. Statistics were performed using R statistical software.

Results

The median age was 65 years (range 45-77) and the median time since surgery was 17.3 months (range 3.1-36.1). The mean BMI was 25.6 (95% CI; 19.5-32.1) and 6% of the patients had diabetes. The median preoperative DANPSS was 3 (range 0-55). According to the D'Amico classification 10% had low risk cancers, 62% had intermediate risk cancers, and 27% had high risk cancers. Robotic assisted operations were performed in 77% of the cases. Bilateral nerve-sparing was employed in 31% and unilateral nerve-sparing was employed in 45% of the patients. Following surgery 7% had received radiation therapy, and 8% had received hormonal manipulation with bicalutamid and/or androgen deprivation therapy.

The median ICIQ score was 4 (range 0-21) and 72% stated that their post operative continence had met their expectations. According to the ICIQ, 34% never experienced urinary incontinence while 28% experienced incontinence once a week or less. Meanwhile, 8% experienced problems 2 or 3 times per week, 6% experienced problems once per day and 22% leaked urine several times a day. Finally, 3% reported to leak urine constantly. Of the patients who reported any degree of urinary leakage, 88% leaked a small amount, 10% leaked a moderate amount and 2% reported to leak large amounts of urine. Overall 8% of the patients reported to leak more than a small amount of urine at least once a week. The median bother score in patients with leakage was 2 (range 0-10) and high scores were significantly correlated with both a high frequency of urine loss ($p < 0.0001$) and the amount of urine lost ($p = 0.002$). Stress incontinence was the most predominant feature, however, 15% of the patients with urinary problems had an urge incontinence component and 3% experienced urinary leakage during their sleep.

Of the patients with urinary problems, 32% stated that these had a negative influence on their sex life and 36% had experienced an exacerbation of their incontinence problems during alcohol intake. The problems started after a median intake of 4 units of alcohol (range 1-12).

On multivariate analysis, the presence of lower urinary symptoms before surgery (High DANPSS) was an independent predictor of higher ICIQ scores ($p = 0.04$). There was a non-significant trend toward lower ICIQ scores with increasing follow up time ($p = 0.09$).

Interpretation of results

Some degree of urinary leakage is common after radical prostatectomies. However the degree of incontinence and the significance of the symptoms show significant variation. Over all, it seems that patients can be divided into 3 groups with about a third of the patients experiencing no problems, a little less than two thirds experiencing minor problems and about one in ten experiencing severe and bothersome incontinence. The importance of minor incontinence symptoms was generally limited with a median bother score of only 2. However there were important individual variations as the scores ranged from 0 to 10 and as 28% of the participants stated that their post operative continence did not live up to their expectations. With regard to the type of

post prostatectomy incontinence it is generally accepted that stress incontinence predominates. However, our study shows that urge symptoms are present in a large subset of patients. This may have important clinical implications as the treatments of stress and urge incontinence are fundamentally different.

Urinary leakage during sexual activity may be another factor of clinical importance. The problem was shown to be present in about a third of incontinent patients and could represent a barrier to post prostatectomy sexual rehabilitation. Finally, the connection between alcohol intake and urinary incontinence could have a negative effect on the social functioning of some patients; however this will have to be investigated more thoroughly in future studies.

Our multivariate analysis showed that the presence of urinary symptoms prior to surgery influenced the ICIQ score. This knowledge may be used in preoperative counselling of patients. It should be noted that most patients in our study had undergone surgery more than a year before filling out the questionnaire. This could explain that time since surgery only reached borderline significance with regard to lowering the ICIQ score.

Concluding message

The common practice of simply categorizing patients as continent or incontinent after a radical prostatectomy does not seem reasonable based on our results. On the contrary urinary symptoms vary significantly although only relatively few patients suffer from severe incontinence. Patients should be thoroughly informed about these possible outcomes before surgery in order to let them make an informed decision about treatment and to give them realistic expectations if they decide to undergo surgery. The presence or absence of preoperative urinary symptoms may improve predictions of post operative outcomes. During post prostatectomy follow up the significance of incontinence on sexual and social function should be addressed.

Disclosures

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