

DO URINARY INCONTINENCE AND RETROPUBIC OR ROBOT RADICAL PROSTATECTOMY AFFECT THE EVOLUTION OF POSTOPERATIVE PHYSICAL ACTIVITY?

Hypothesis / aims of study

Prostate cancer is worldwide the second most prevalent malignancy among men (1). Radical prostatectomy has become the standard treatment for eradication of localised or locally advanced prostate carcinoma. This surgery was always done via a retropubic approach. However, since technical modifications have expanded robotic prostatectomy became more and more the treatment of choice. Negative consequences, like urinary incontinence and decreased postoperative physical activity remained. The aims of our study were to assess the impact of type of radical prostatectomy (retropubic vs. robotic) and postoperative urinary incontinence on total physical activity level, sports and household activity levels of prostate cancer survivors, preoperatively to 1, 3, and 6 months after surgery.

Study design, materials and methods

All patients with localized or locally advanced prostate cancer, planned for a retropubic or robotic radical prostatectomy between October 2009 and June 2010, were eligible. After catheter withdrawal urine loss per 24 hours was noted. Continence was defined as 3 consecutive days of 0 gram of urine loss. Before surgery, one, three and six months after surgery, all patients were asked to complete the Flemish Physical Activity Computerized Questionnaire (FPACQ) which is a reliable and valid questionnaire (2). Total physical activity level, sports and household activity level (MET hours/week) were calculated from the FPACQ. The influence of type of surgery and urinary incontinence was investigated at 1, 3 and 6 months after surgery. The number of workers (laborers and self-employed persons) and retired patients at each time point were determined. A linear model for repeated measures was used to evaluate the evolution of various continuous variables (total, sports and household activity level) over time. To assess the relationship between the predictor variables and the outcome variables ANOVA, Pearson correlation and point-biserial correlation were performed.

Results

Seventy-six men participated in the study. Fifty-one patients underwent a retropubic radical prostatectomy, 25 patients underwent a robotic radical prostatectomy. Mean age was 61.6 and 61.3 years, respectively. Immediately after catheter withdrawal, 96% of the patients was incontinent. The median amount of urine loss the first day after catheter withdrawal was 116 gram (48-665) for retropubic radical prostatectomy and 76 gram (10-428) for robot surgery. Incontinence, occupational and weight parameters according to type of surgery are summarized in Table 1.

Total, sports and household activity level only significantly decreased one month after surgery compared to preoperatively. At three and six months the values nearly equalled the preoperative values, except for sports activity level six months after surgery (Figure 1 and 2). The type of surgery (retropubic/robot), the occupational status of the patient and overweight, did not have a significant effect on total, sports and household activity level. Before surgery 45% was working, 55% had already retired. Within the working group of patients 8% were self-employed persons. One, three and six months after surgery 83%, 100% and 100% of the self-employed patients was working again versus only 29%, 81% and 91% of the laborers.

Correlation analysis between physical activity and incontinence demonstrated that, at three months postoperatively, total physical and sports activity level of incontinent men were significantly lower compared to continent men. Moreover, a larger amount of urine loss on the first day after catheter withdrawal was significantly associated with a lower total physical activity level three months after surgery. However, no association with the sports activity level could be found. At six months postoperatively, only household activity level was significantly lower in incontinent men. Household activity level at three months after radical prostatectomy also was significantly related with the duration of urinary incontinence.

Table 1 Incontinence parameters according to type of surgery

		Retropubic radical prostatectomy (n= 51)	Robot-assisted radical prostatectomy (n= 25)
Median (IQR) time to continence		32,5 (15-86)	23 (8-48)
Continence status (number (%))			
At 1 month	Missing	5 (10%)	2 (8%)
	Continent	23 (45%)	14 (56%)
	Incontinent	23 (45%)	9 (36%)
At 3 months	Missing	5 (10%)	2 (8%)
	Continent	35 (69%)	19 (76%)
	Incontinent	11 (21%)	4 (16%)
At 6 months	Missing	5 (10%)	2 (8%)
	Continent	42 (82%)	22 (88%)
	Incontinent	4 (8%)	1 (4%)

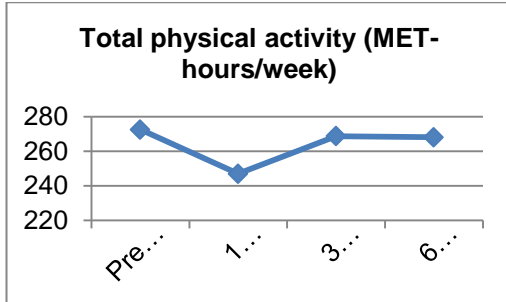


Fig. 1 Evolution of the total physical activity (MET hours/week) level of prostate cancer patients from the preoperative stage to 6 months after surgery.

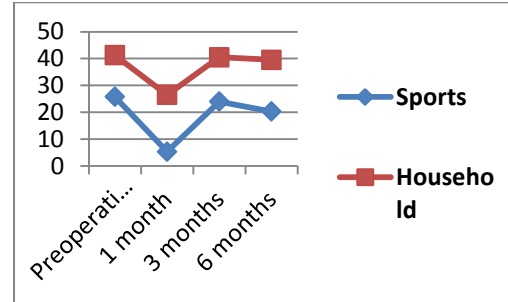


Fig. 2 Evolution of the sports and household physical activity level (MET hours/week) from the preoperative stage to 6 months after surgery.

Interpretation of results

Physical activity decreased one month after prostate surgery. Surgical technique had no influence on postoperative physical activity. Urinary incontinence day one and continence status were predictive for a decrease of physical activity postoperatively.

Concluding message

This is the first research to investigate the impact of a radical prostatectomy on several determinants of physical activity and to find predictive factors for a change in physical activity. Our study showed that physical activity significantly decreased only in the first month after surgery. Important predictive factors were the amount of urinary incontinence on day one and the continence status three months after surgery, which is related to physical activity at the same time. No difference was found between retropubic and robot surgery regarding physical activity. Despite our small sample size, these results are innovative and worth further research to consolidate our findings.

References

1. Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. *CA Cancer J Clin* 2011;61:69-90.
2. Matton L, Wijndaele K, Duvigneaud N et al. Reliability and validity of the Flemish Physical Activity Computerized Questionnaire in adults. *Res Q Exerc Sport* 2007;78:293-306.

Disclosures

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