Prostate Int xxx (2017) 1–5

Contents lists available at ScienceDirect

Prostate International

journal homepage: https://www.journals.elsevier.com/prostate-international

Original Article

A match-pair analysis of continence in intermediate and high-risk prostate cancer patients after robot-assisted radical prostatectomy: the role of urine loss ratio and predictive analysis

Antonio Tienza [a], Yigit Akin [b], Jens Rassweiler [c], Ali Serdar Gözen [c, *]

[a] Department of Urology, Clinica Universidad de Navarra, Pamplona, Spain
[b] Department of Urology, Harran University School of Medicine, Yenisehir Campus, Sanliurfa, Turkey
[c] Department of Urology, SLK Klinikum Heilbronn, Am Gesundbrunnen 20, Heilbronn, Germany

ARTICLE INFO

Article history:
Received 6 August 2017
Received in revised form
17 August 2017
Accepted 13 September 2017
Available online xxx

Keywords:
Predictive value of tests
Prostatectomy
Prostatic neoplasm
Urinary incontinence

ABSTRACT

Background: We aimed to study the continence between intermediate and high-risk cancer patients and the influential factors to recover continence.
Materials and methods: In total, 655 patients underwent surgery by robot-assisted radical prostatectomy between 2010 and 2015. Of 655 patients, 294 were classified according to D'Amico risk groups as intermediate risk or high risk and completed the micturition protocol. Patients with intermediate risk were matched in a 1:1 ratio to patients with high risk for age and body mass index. Urine loss ratio (ULR) was defined as urine loss divided by micturition volumes. Immediate continence was defined with the best cut-off value of ULR.
Results: In total, 117 patients with intermediate risk were matched to those with high risk. The comparison did not show any statistically significant difference in the ULR value ($P = 0.359$) or continence rate ($P = 0.449$). Predictive analysis was performed for the 294 patients (intermediate and high risk), of which 9.5% were classified as incontinent (>1 pad/d). Immediate continence was defined as ULR < 0.049 in 232 (78.9%) patients. Age, preoperative hemoglobin, and duration of catheterization were found by univariate analysis. Only age [odds ratio (OR) = 1.072; 95% confidence interval (CI) = 1.020–1.127; $P = 0.006$] and duration of catheterization (OR = 1.060; 95% CI = 1.003–1.120; $P = 0.040$) were independent influential factors to predict immediate continence.
Conclusion: D'Amico intermediate- and high-risk groups do not differ in continence terms. The ULR value of < 0.049 identifies those patients who recover continence earlier. Age and duration of catheterization were influential factors in predicting immediate continence.
© 2017 Asian Pacific Prostate Society, Published by Elsevier Korea LLC. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

1. Introduction

Prostate cancer is one of the most prevalent solid cancer in men, which is treated by surgery or radiation therapy.[1] Nowadays, D'Amico low-risk patients can also start a program of active surveillance, receive treatment by focal therapy, brachytherapy, or minimally-invasive radical prostatectomy (RP).[1,2] The benefit of radical treatment is in doubt.[3] In this scenario, surgery has taken advantage for D'Amico intermediate- or high-risk patients. RP has undergone an evolution over time from retropubic to laparoscopic and finally to robot assisted RP (RARP). All techniques have changed with the aim to improve outcomes; however, urinary incontinence (UI) is still a secondary effect.[4,5] UI may appear in 4–31% cases after surgery and reduce the quality of life.[6] Identifying those patients who will have difficulties in recovering continence is useful for the physician, as the question of incontinence is frequently asked by patients. In 2006, a new parameter was introduced to address this question: the urine loss (UL) volume.[7] In 2007, it was reported that UL ratio (ULR) parameter predicts time to continence.[8] Continuing with the micturition protocol of this study, we aimed to study the continence between intermediate- and high-risk cancer patients and the influential factors to recover continence.

* Corresponding author. Department of Urology, SLK Klinikum Heilbronn, Am Gesundbrunnen 20, D-74078 Heilbronn, Germany.
E-mail address: asgozen@yahoo.com (AS Gözen).

https://doi.org/10.1016/j.prnil.2017.09.001
p2287-8882 e2287-903X/© 2017 Asian Pacific Prostate Society, Published by Elsevier Korea LLC. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Please cite this article in press as: Tienza A, et al., A match-pair analysis of continence in intermediate and high-risk prostate cancer patients after robot-assisted radical prostatectomy: the role of urine loss ratio and predictive analysis, Prostate Int (2017), https://doi.org/10.1016/j.prnil.2017.09.001

UNCORRECTED PROOF

2. Materials and methods

2.1. Study design

The study was a non-randomized and non-placebo study with retrospective view of prospective recorded data.

Between 2010 and 2015, a total of 655 patients underwent surgery by RARP, performed by one surgeon. Patients were diagnosed after transrectal prostate biopsy if elevated levels of prostate-specific antigen and/or suspicious digital rectal examination results were found, and then classified according to D'Amico risk groups as low risk, intermediate risk, or high risk. Surgical treatment was performed using Heilbronn technique[9] with or without unilateral or bilateral nerve sparing technique (NST), bladder neck–sparing procedure, and Van Velthoven anastomosis technique.[10] Surgical techniques did not differ between risk groups, except in selected cases.

A cystogram was performed 5 days after the surgery to remove the urethral catheter in the case of no leakage. The cystogram was repeated at 7 days or 10 days after surgery in the cases of slight leakage at 5 day. If there was urine debit through the drainage, the cystogram was performed in the absence of leakage. Difficult cases with blood loss, increased anastomosis time or difficulty, evidence of slight leakage during surgery, or urine debit in drainage were the main reasons to maintain the urethral catheter.

A total of 294 patients completed the micturition protocol and were suitable for inclusion. These 294 patients were classified as intermediate risk and 224 patients as high risk. Furthermore, 117 patients with intermediate risk were matched in a 1:1 ratio to patients with high risk for age and body mass index (BMI).

2.2. UI

Continence status was evaluated after 12 months by a self-administered modified International Continence Society (ICS) questionnaire by mail. Incontinence status was defined as the need for more than one pad after 12 months of recovery.

2.3. Micturition protocol

The protocol was performed 24 hours after removing the catheter. A 24-hour modified pad test was performed to measure UL. The micturition volumes were collected, and ULR was calculated on the last day of the patient's hospital stay. ULR was defined as UL divided by micturition volumes. Immediate continence was defined with the best cut-off value of ULR.

2.4. Data analysis

Clinical characteristics of patients were collected as absolute value or percentage.

Matched-pair analysis was performed manually choosing controls depending on the match criteria (age and BMI). To test the normality of the distribution, Shapiro–Wilk test was performed. A comparison between patient characteristics of matched groups was performed by Student *t* test or Mann–Whitney *U* test for mean comparison, or by Pearson's Chi-square test or Fisher exact test. The best cut-off value of ULR was obtained by the minimum description length principle method and confirmed by a sensitivity/1-specificity chart.[11]

Univariate and multivariate logistic regression analyses were performed to identify the influential variables in predicting immediate continence.

All data were collected prospectively in a specific database (Microsoft Excel). All statistical analyses were performed using IBM SPSS Statistics for MAC version 21.0 (IBM Corp., Armonk, NY, USA). A P value < 0.05 was considered to be statistically significant.

3. Results

Patients characteristics of all patients included in analysis are shown in Table 1. The matched population is divided into intermediate- and high-risk groups according to age and BMI. All continuous variables obtained a P value < 0.05 by Shapiro–Wilk test, implying a non-normal distribution.

No differences were found in prostate volume, transurethral resection of the prostate, time of surgery, and catheterization time between the groups. Only NST differed between the groups. After matching intermediate-risk patients with high risk patients, according to age and BMI, we did not find differences in terms of continence prevalence or ULR.

We continued the analysis with the whole population that completed the micturition protocol ($n = 294$). The best cut-off value of ULR was searched and matched with the previously reported

Table 1
Patient characteristics of the study

		Matched population		P
		Intermediate risk	High risk	
No. of patients (%)	294 (100%)	117 (39.7%)	117 (39.7%)	–
Age (y)				0.851
Mean	65	65.37	65.53	–
Range	44–80	45–77	46–76	–
Body mass index (kg/m^2)				0.820
Mean	26.97	26. 7	26.8	–
Range	16.59–37.74	16.59–37.74	18.7–37.74	–
TURS volume (cc)				0.286
Mean	40.57	39.78	43.09	–
Range	10–150	10–135	10–150	–
Prior TURP	20 (6.8%)	8 (6.8%)	7 (6.8%)	–
DRE abnormal	175 (59.5%)	49 (41.9%)	93 (79.5%)	0.79
PSA (ng/mL)				
Median	13.53	8	19.5	–
Range	1–425	1.2–19.2	1.8–425	–
D'Amico risk categories				
Intermediate risk	146 (49.7%)		–	–
High risk	148 (50.3%)		–	–
NST				
Bilateral	256 (87.1%)	115 (98.3%)	106 (90.6%)	0.019
Surgical time (min)				
Mean	217	217	218.5	0.644
Range	104–500	104–500	50–2000	–
Estimated blood loss (mL)				
Mean	485	485	485	0.446
Range	50–2000	50–2000	50–2000	–
Pathological stage				
T2	153 (52%)	72 (61%)	53 (46.1%)	–
T3a	70 (23.8%)	27 (23.1%)	24 (20.9%)	–
T3b	64 (21.8%)	14 (12%)	38 (33%)	–
Pathological Gleason				
2–6	29 (10.3%)	11 (9.4%)	12 (10.5%)	–
7	201 (71.3%)	92 (78.6%)	73 (64%)	–
8–10	52 (18.4%)	7(6%)	29 (25.4%)	–
Catheterization time (d)				
Mean	9.21	9.48	9.18	0.668
Median	7	7	7	
Range	5–35	5–29	5–35	
ULR				
Mean	0.04	0.0291	0.049	
Median	0.01	0.01	0.01	0.359
Range	0–0.49	0–0.25	0–0.49	
Incontinence:				
>1 pad/d	28 (9.5%)	12 (8.2%)	16 (10.8%)	0.449

DRE, digital rectal examination; NST, nerve sparing technique; PSA, prostatic specific antigen; TURP, transurethral resection of the prostate; TURS, transrectal ultrasound; ULR, urine loss ratio.

UNCORRECTED PROOF

Please cite this article in press as: Tienza A, et al., A match-pair analysis of continence in intermediate and high-risk prostate cancer patients after robot-assisted radical prostatectomy: the role of urine loss ratio and predictive analysis, Prostate Int (2017), https://doi.org/10.1016/j.prnil.2017.09.001

Download English Version:

https://daneshyari.com/en/article/8952884

Download Persian Version:

https://daneshyari.com/article/8952884

Daneshyari.com