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Continence and Pca Therapy Radiation Therapy Who is at Risk?

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DEFINITION & PREVALENCE

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Urinary incontinence (UI) is a storage symptom and defined as the complaint of any involuntary loss of urine

In men greater than sixty five years old, the prevalence of UI may be as high is 31%

Journal Neurourology and Urodynamics (2002; 21:167- 178 and 2006; 25: 293)

RISK FACTORS

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- ✓ overactive bladder (urge incontinence)
- ✓ poor urethral sphincter function (stress incontinence)
- ✓ age
- ✓ comorbidities
- ✓ obesity
- ✓ prostate cancer and its treatments

Shamliyan TA et al. Rev Urol 2009, 11:145–165.

URINARY INCONTINENCE & QoL

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Physical Incidences
Bacterial infections
Fungal infections
Cellulitis, skin infections
Paratrimma Decubitus ulcers
Falls and fractions
Sexual dysfunction

Psychological Effects
Stress
Depression
Loss of self-respect
Shame

Urinary incontinence

Social incidences
Avoid of social events
Reduce personal activities
Social insularity
Loss of independence
Cost

S. Charalambous et.al; Pelviperineology 2009; 28: 51-53

UI post- PROSTATECTOMY

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..historical series

✓ severe UI ranged from 0-12,5%

✓ mild UI ranged from 4-50%

Hautmann et al. Radical retropubic prostatectomy: morbidity and urinary continence in 418 consecutives cases. Urology 1994; 43:47-51

Catalona et al, Return of erections and urinary continence following nerve sparing Radical retropubic prostatectomy. J Urology 1993; 150:905-907

UI post- PROSTATECTOMY

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ORIGINAL CONTRIBUTION

Urinary and Sexual Function After Radical Prostatectomy for Clinically Localized Prostate Cancer

The Prostate Cancer Outcomes Study

- at 2 years 8.7% of men had a lack of urinary control and 41.9% reported sexual dysfunction.

- Recovery from sexual dysfunction and urinary incontinence occurs over 2-3 years

J.L. Stanford et al. JAMA 2000; 283: 354-360

UI post- PROSTATECTOMY

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Urinary Incontinence and Erectile Dysfunction After Robotic Versus Open Radical Prostatectomy: A Prospective, Controlled, Nonrandomised Trial

Eva Haglind [a,], Stefan Carlsson [b], Johan Stranne [c], Anna Wallerstedt [b], Ulrica Wilderäng [d], Thordis Thorsteinsdottir [d,e], Mikael Lagerkvist [f], Jan-Erik Damber [c], Anders Bjartell [g], Jonas Hugosson [c], Peter Wiklund [b], Gunnar Steineck [d,h], on behalf of the LAPPRO steering committee [†]*

Objective: To compare patient-reported urinary incontinence and erectile dysfunction 12 mo after RALP or RRP.

	<1 pad *	1 pad *	2–3 pads *	4–5 pads *	≥6 pads *
Robot-assisted surgery, %	175 (10)	230 (13)	103 (6.0)	19 (1.1)	14 (0.8)
Open surgery, %	96 (13)	85 (12)	40 (5.6)	12 (1.7)	7 (1.0)
Definition of outcome	>0 <1 pad *	≥1 ≥1 pad *	≥2 ≥2 pads *	≥4 ≥4 pads *	≥6 ≥6 pads *
Adjusted A OR ** (95% CI)	1.00 (0.82–1.23)	1.21 (0.96–1.54)	1.05 (0.74–1.49)	0.91 (0.48–1.71)	0.99 (0.37–2.65)
Adjusted B OR † (95% CI)	1.01 (0.81–1.26)	1.24 (0.96–1.60)	1.17 (0.79–1.74)	1.13 (0.54–2.38)	0.98 (0.33–2.90)

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Definition of urinary incontinence	Open surgery, *n* (%)	Robot-assisted surgery, *n* (%)
Change of pad [§] at least once per 24 h (primary end point)	144 (20)	366 (21)
Not pad free [§] and not leakage free	399 (56)	978 (57)
Urinary leakage daytime	252 (35)	606 (35)
Any urinary leakage daytime	367 (51)	902 (52)
Do you have urinary leakage?	117 (17)	310 (18)
Urinary discomfort	261 (37)	592 (35)

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Results and limitations: Of 2625 eligible men, 2431 (93%) could be evaluated for the primary end point. At 12 mo after RALP, 366 men (21.3%) were incontinent, as were 144 (20.2%) after RRP. The adjusted OR was 1.08 (95% confidence interval [CI], 0.87–1.34).

Conclusions: In a Swedish setting, RALP for prostate cancer was modestly beneficial in preserving erectile function compared with RRP, without a statistically significant difference regarding urinary incontinence or surgical margins.

UI post- RADIOTHERAPY

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✓ The incidence of UI after external beam radiation therapy or brachytherapy varies considerably with a reported range of 10% to 30%

Gray PJ et al. Cancer 2013, 119:1729–1735.

✓ Post-treatment UI develops months to years after radiation therapy without recovery and may adversely affect a patient's sexual function and general quality of life

Ko Y et al. Am J Manag Care 2005, 11:S103–S111.

UI post- RADIOTHERAPY

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Clinical data suggest that hypofractionated radiation therapy may be radiobiologically favorable to smaller fraction sizes in prostate cancer radiotherapy

Fowler JF et al. Acta Oncol 2005, 44:265–276.

Early data from trials of limited hypofractionation (fraction sizes from 2.5 to 3.5 Gy) revealed that such regimens are effective without undue urinary toxicity

Ritter M et.al Cancer J 2009, 15:1–6.

UI post- SBRT

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RADIATION ONCOLOGY

RESEARCH Open Access

Patient-reported urinary incontinence following stereotactic body radiation therapy (SBRT) for clinically localized prostate cancer

Leonard N Chen[1†], Simeng Suy[1†], Hongkun Wang[2], Aditi Bhagat[1], Jennifer A Woo[1], Rudy A Moures[1], Joy S Kim[1], Thomas M Yung[1], Siyuan Lei[1], Brian T Collins[1], Keith Kowalczyk[3], Anatoly Dritschilo[1], John H Lynch[3] and Sean P Collins[1*]

Purpose: Urinary incontinence (UI) following prostate radiotherapy is a rare toxicity that adversely affects a patient's quality of life. This study sought to evaluate the incidence of UI following stereotactic body radiation therapy (SBRT) for prostate cancer.

Chen et al. Radiation Oncology 2014, 9:148

UI post- SBRT

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Methods: Between February, 2008 and October, 2010, 204 men with clinically localized prostate cancer were treated definitively with SBRT at Georgetown University Hospital. Patients were treated to 35–36.25 Gray (Gy) in 5 fractions delivered with the CyberKnife (Accuray). UI was assessed via the Expanded Prostate Index Composite (EPIC)-26.

Results: Baseline UI was common with 4.4%, 1.0% and 3.4% of patients reporting leaking > 1 time per day, frequent dribbling and pad usage, respectively. Three year post treatment, 5.7%, 6.4% and 10.8% of patients reported UI based on leaking > 1 time per day, frequent dribbling and pad usage, respectively. Average EPIC UI summary scores showed an acute transient decline at one month post-SBRT then a second a gradual decline over the next three years. The proportion of men feeling that their UI was a moderate to big problem increased from 1% at baseline to 6.4% at three years post-SBRT.

Chen et al. Radiation Oncology 2014, 9:148

UI post- SBRT

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Conclusions: Prostate SBRT was well tolerated with UI rates comparable to conventionally fractionated radiotherapy and brachytherapy. More than 90% of men who were pad-free prior to treatment remained pad-free three years following treatment. Less than 10% of men felt post-treatment UI was a moderate to big problem at any time point following treatment. Longer term follow-up is needed to confirm late effects.

Chen et al. Radiation Oncology 2014, 9:148

UI and Adjuvant Radiotherapy

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Assessing Adverse Events of Postprostatectomy Radiation Therapy for Prostate Cancer: Evaluation of Outcomes in the Regione Emilia-Romagna, Italy

Timothy N. Showalter, MD, MPH,* Sarah E. Hegarty, MPhil,†,‡
Carol Rabinowitz, BA,† Vittorio Maio, PharmD, MSPH,§
Terry Hyslop, PhD,‖ Adam P. Dicker, MD, PhD,¶ and Daniel Z. Louis, MS†

Purpose: Although the likelihood of radiation-related adverse events influences treatment decisions regarding radiation therapy after prostatectomy for eligible patients, the data available to inform decisions are limited. This study was designed to evaluate the genitourinary, gastrointestinal, and sexual adverse events associated with postprostatectomy radiation therapy and to assess the influence of radiation timing on the risk of adverse events.

UI and Adjuvant Radiotherapy

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Table 2 Adverse events observed after RP alone versus RP followed by RT (RP + RT)

Outcome	RP alone (n=7700) Total events	100 person-years	Rate = total events/100 person-years	RP + RT (n=2176) Total events	100 person-years	Rate = total events/100 person-years	RP + RT vs RP alone, rate ratio (95% CI)
Gastrointestinal events	312	316	0.99	139	90	1.55	1.57 (1.29, 1.92)
Urinary nonincontinence events	383	309	1.24	203	87	2.34	1.89 (1.60, 2.24)
Urinary incontinence events	243	316	0.77	58	91	0.64	0.83 (0.62, 1.10)

Abbreviations: CI = confidence interval; RP = radical prostatectomy; RT = radiation therapy.
Owing to low event rates, erectile dysfunction (37 events) and hip fracture (42 events) adverse events not reported.

UI and Quality of Life

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Quality of Life and Satisfaction with Outcome among Prostate-Cancer Survivors

Martin G. Sanda, M.D., Rodney L. Dunn, M.S., Jeff Michalski, M.D., Howard M. Sandler, M.D., Laurel Northouse, R.N., Ph.D., Larry Hembroff, Ph.D., Xihong Lin, Ph.D., Thomas K. Greenfield, Ph.D., Mark S. Litwin, M.D., M.P.H., Christopher S. Saigal, M.D., M.P.H., Arul Mahadevan, M.D., Eric Klein, M.D., Adam Kibel, M.D., Louis L. Pisters, M.D., Deborah Kuban, M.D., Irving Kaplan, M.D., David Wood, M.D., Jay Ciezki, M.D., Nikhil Shah, D.O., and John T. Wei, M.D.

The NEW ENGLAND JOURNAL *of* MEDICINE

METHODS

We prospectively measured outcomes reported by 1201 patients and 625 spouses or partners at multiple centers before and after radical prostatectomy, brachytherapy, or external-beam radiotherapy. We evaluated factors that were associated with changes in quality of life within study groups and determined the effects on satisfaction with the treatment outcome.

UI and Quality of Life

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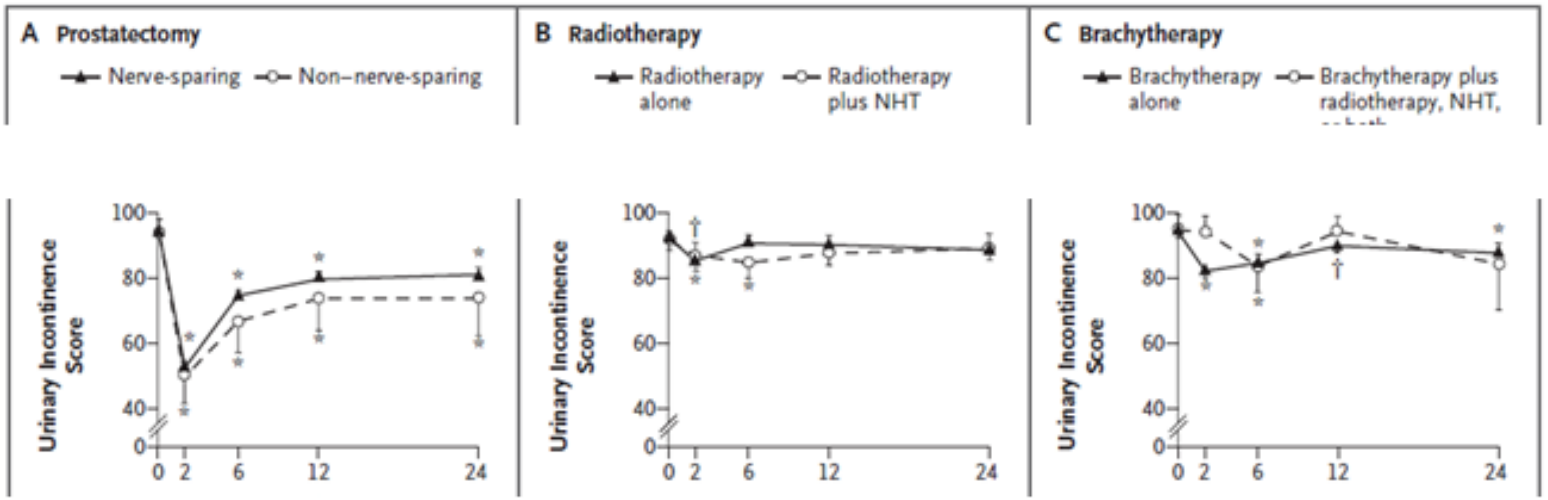
Quality of Life and Satisfaction with Outcome among Prostate-Cancer Survivors



Sanda et al. N Engl J Med 2008;358:1250-61

Conclusions

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✓ Urinary incontinence has a relevant negative effect on patients who undergo radical prostatectomy and/or radiotherapy

✓ increasing age, comorbidities, the presence of LUTS = higher risk of urinary incontinence

✓ …Few prospective studies of the quality of life after radiotherapy and prostatectomy

✓ ***…UI after RT is an overstimated phenomenon***?

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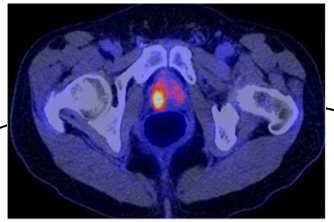

IMAGING

NEW DRUGS

Better outcomes!!!

NEW SURGICAL TECHNIQUE

IMAGE-GUIDED RADIOTHERAPY (IGRT/ VMAT)