

## INTRODUCTION

- ✓ Controversy whether men experience transient changes in erectile function and/or lower urinary tract symptoms (LUTS) after prostate needle biopsy (PNBx)
- ✓ Some studies have shown relationship(s) between type of local anesthesia, number of PNBx cores, serial PNBx and presence of urologic symptoms
- ✓ Prostate cancer (CaP) diagnosis has been associated with psychological changes, anxiety and depression
- ✓ Unknown whether CaP diagnosis influences erectile function or LUTS following PNBx

## OBJECTIVE

- ✓ To prospectively characterize the relationship(s) between CaP diagnosis and the presence of erectile dysfunction and LUTS following PNBx

## METHODS

- ✓ From June 2002 to March 2010, 85 men underwent a single 12-core PNBx at our institution as part of an evaluation for CaP screening. 27% (23/85) of the men were diagnosed with CaP on PNBx
- ✓ All men completed an American Urologic Association Symptom Index (AUA-SI), quality of life (QoL) and International Index of Erectile Function (IIEF) questionnaires at least 60 days prior to biopsy
- ✓ All men completed the same follow-up questionnaires between 1-26 weeks post-biopsy
- ✓ The IIEF score was used as a tool to assess erectile function. For some analyses, the IIEF questionnaire was divided into 5 sub-domains, as previously described: erectile function (Items 1,2 3, 4, 5, and 15), orgasmic function (Items 9 and 10), sexual desire (Items 11 and 12), intercourse satisfaction (Items 6, 7 and 8) and overall satisfaction (Items 13 and 14). The Sexual Health Inventory for Men (SHIM-5) was also used as an abbreviated form of the IIEF (Items 1-4 and 15)
- ✓ Chi-square test was used to compare the changes in pre- and post-PNBx characteristics in men with and without CaP on PNBx
- ✓ Univariate and multivariate analyses were performed to determine which patient characteristics predicted a significant change in erectile function (defined by a difference in total IIEF score of  $\geq 5$  points)

## RESULTS

**Table 1. Baseline Patient Characteristics**

Characteristic	Overall Population (n=85)	Negative Biopsy (N=62)	Positive Biopsy (N=23)	P-Value (neg vs. pos biopsy)
Age $\pm$ SD (years)	61.0 $\pm$ 8.3	59.6 $\pm$ 8.1	64.8 $\pm$ 7.9	0.009
% Caucasian	48%	34%	61%	0.02
Mean PSA $\pm$ SD (ng/ml)	5.2 $\pm$ 3.4	5.0 $\pm$ 3.6	5.6 $\pm$ 2.9	0.46
Mean AUA-SI $\pm$ SD (points)	10.0 $\pm$ 7.1	10.8 $\pm$ 6.9	8.1 $\pm$ 7.4	0.13
Mean QoL $\pm$ SD (points)	1.9 $\pm$ 1.5	2.1 $\pm$ 1.5	1.4 $\pm$ 1.3	0.04
Mean Total IIEF $\pm$ SD (points)	57.8 $\pm$ 12.9	57.4 $\pm$ 13.6	58.8 $\pm$ 11.0	0.65
Mean SHIM-5 $\pm$ SD (points)	19.7 $\pm$ 5.4	19.7 $\pm$ 5.9	19.8 $\pm$ 3.8	0.93

**Table 2. Characteristics of Lower Urinary Tract Symptoms Following Prostate Biopsy**

Characteristic	Overall Population (n=85)	Negative Biopsy (N=62)	Positive Biopsy (N=23)	P-Value (neg vs. pos biopsy)
Mean Post Biopsy AUA-SI $\pm$ SD	9.8 $\pm$ 7.0	10.1 $\pm$ 6.8	8.5 $\pm$ 7.7	0.36
Mean Post Biopsy QoL $\pm$ SD	1.8 $\pm$ 1.3	1.9 $\pm$ 1.4	1.6 $\pm$ 1.3	0.46
Mean Change AUA-SI $\pm$ SD	-0.3 $\pm$ 4.8	-0.4 $\pm$ 5.7	0.1 $\pm$ 1.7	0.55
Mean Change QoL $\pm$ SD	-0.1 $\pm$ 1.1	-0.2 $\pm$ 1.1	0.2 $\pm$ 0.8	0.07

**Table 3. Characteristics of Erectile Function Following Prostate Biopsy**

Characteristic	Overall Population (n=85)	Negative Biopsy (N=62)	Positive Biopsy (N=23)	P-Value (neg vs. pos biopsy)
Time Post Biopsy Eval. $\pm$ SD (days)	128.1 $\pm$ 91.6	156.6 $\pm$ 83.6	51.5 $\pm$ 64.9	<0.0001
Mean Post Biopsy IIEF $\pm$ SD	54.3 $\pm$ 17.2	56.3 $\pm$ 17.2	48.7 $\pm$ 16.1	0.07
Mean Post Biopsy Shim 5 $\pm$ SD	18.5 $\pm$ 6.8	19.2 $\pm$ 6.9	16.6 $\pm$ 6.0	0.11
Mean Change Total IIEF	-3.5 $\pm$ 11.8	-1.1 $\pm$ 11.3	-10.1 $\pm$ 10.7	0.001
Mean Change SHIM 5	-1.2 $\pm$ 5.1	-0.5 $\pm$ 5.1	-3.3 $\pm$ 4.5	0.02
Mean Change Erectile Function Domain	-1.7 $\pm$ 5.6	-0.8 $\pm$ 5.5	-4.3 $\pm$ 5.2	0.01
Mean Change Orgasmic Function Domain	-0.4 $\pm$ 3.3	0.0 $\pm$ 3.5	-1.4 $\pm$ 2.3	0.04
Mean Change Sexual Desire Domain	-0.4 $\pm$ 1.8	0.0 $\pm$ 1.5	-1.3 $\pm$ 2.1	0.01
Mean Change Intercourse Satisfaction Domain	-1.1 $\pm$ 3.0	-0.6 $\pm$ 2.8	-2.4 $\pm$ 2.9	0.009
Mean Change Overall Satisfaction Domain	0.0 $\pm$ 1.8	0.3 $\pm$ 1.9	-1.0 $\pm$ 1.3	0.002

**Table 4. Univariate and Multivariate Analyses of Clinical Characteristics to Predict a Significant Change ( $\geq 5$  pts) in Total IIEF Score**

	Univariate		Multivariate	
	OR (95% C.I.)	P Value	OR (95% C.I.)	P Value
Age	--	--	0.98 (0.91-1.06)	0.65
Days post assessment	--	--	1.00 (0.99-1.00)	0.36
Positive Cancer Biopsy	4.39 (1.11-20.01)	0.03	3.39 (1.00-15.36)	0.04

## SUMMARY

- ✓ CaP diagnosis does not appear to influence the severity of LUTS following PNBx as measured by AUA-SI and QoL scores
- ✓ Data suggest that the diagnosis of CaP has an impact on the erectile function. Specifically, men with a positive biopsy were 3.39x more likely to have a significant decrease in IIEF compared to men without cancer
- ✓ CaP diagnosis appears to exert its influence over the erectile function domain of the IIEF more than other domains
- ✓ Because men without a cancer diagnosis did not consistently experience a change in erectile function following PNBx, our results suggest that anxiety and/or other psychological influences related to a CaP diagnosis may influence post-biopsy erectile function
- ✓ These results suggest that a man's erectile function should be assessed prior to performing the PNBx
- ✓ Future prospective studies involving larger populations and assessing for psychological factors should be performed