Title

1733 LOWER URINARY TRACT SYMPTOMS AND DIET QUALITY: FINDINGS FROM THE 2000-2001 NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY

Journal

Investigative Urology, 187(4)

ISSN

0021-0005

Authors

Erickson, Bradley
Vaughan-Sarrazin, Mary
Lu, Xin
et al.

Publication Date

2012-04-01

DOI

10.1016/j.juro.2012.02.1694

Peer reviewed

5-AR2 in adult prostates has implications for using 5-AR2 inhibitors for management of BPH and chemopreventive strategies for prostate cancer.

Source of Funding: NIH/R01: DK091353-01

1732

CHANGE OF OXIDATIVE STRESS MARKERS, 8-HYDROXY-2'-DEOXYGUANOSINE AND BIOPYRRIN, IN THE URINE OF PATIENTS WITH PROSTATIC ENLARGEMENT TREATED WITH DUTASTERIDE

Naoki Wada, Seiji Matsumoto, Masafumi Kita, Kazumi Hashidume, Hidehiro Kakizaki, Asahikawa, Japan*

INTRODUCTION AND OBJECTIVES: Recent studies suggest that bladder outlet obstruction (BOO) increases oxidative stress in the bladder that may play a critical role in the development of lower urinary tract symptoms (LUTS) in men. Dutasteride, a dual 5α-reductase inhibitor, improves LUTS by reducing prostatic volume (PV) that significantly affects BOO. We prospectively studied the change of two kinds of urinary oxidative stress markers in patients with LUTS suggestive of benign prostatic obstruction (LUTS/BPO) before and after dutasteride treatment.

METHODS: This study included 22 patients with LUTS/BPO whose PV was more than 30 ml. Urine samples were collected through voiding at normal desire to void before and 24 weeks after dutasteride treatment (0.5 mg daily). Urinary 8-hydroxy-2'-deoxyguanosine (8OHdG) and biopyrrin levels were measured using an enzyme-linked immunosorbent assay and normalized by urinary creatinine (Cr) levels. Before and 24 weeks after dutasteride, we also assessed International Prostate Symptom Score (IPSS) and urodynamic study including free uroflometry (UFM), filling cystometry and pressure-flow study (PFS). Patients were further divided into two subgroups depending on the severity of LUTS.

RESULTS: Twenty-four weeks after dutasteride treatment, 8OHdG/Cr levels significantly decreased from 7.2±5.4 to 4.9±3.2 ($p<0.05$), but there was no significant change in biopyrrin/Cr levels (from 1.9±2.0 to 2.0±1.8). Compared to the patients with mild to moderate LUTS (IPSS<20) before dutasteride, patients with severe LUTS (IPSS≥20) had severe obstruction grade assessed by the Schäfer nomogram on PFS and higher urinary 8OHdG/Cr levels. Significant reduction of obstruction grade and urinary 8OHdG/Cr levels after dutasteride treatment was only noted in patients with severe LUTS, but not in those with mild to moderate LUTS (table).

CONCLUSIONS: Based on the change of urinary 8OHdG/Cr levels, dutasteride exerts antioxidant effect through relieving obstruction and adjunctively contributes to improvement of severe LUTS. This study is only preliminary and we need to explore appropriate urinary oxidative stress markers for patients with LUTS.

	IPSS<20	20≤IPSS	
N	11	11	
Age (yrs)	72 ±5.2	75 ±4.4	ns
PV before dutasteride (ml)	61 ±32	66 ±27	ns
PV after dutasteride (ml)	45 ±28	46 ±28	ns
	<0.01	<0.01	
IPSS before dutasteride	10.9 ±4.6	26.5 ±4.3	<0.01
IPSS after dutasteride	9.5 ±4.6	19.2 ±5.9	<0.01
	ns	<0.01	
BOO grade before dutasteride	2.5 ±1.7	3.9 ±1.0	<0.05
BOO grade after dutasteride	1.9 ±1.3	2.7 ±1.3	ns
	ns	<0.01	
Biopyrrin/Cr level before dutasteride	1.6 ±1.5	2.1 ±2.4	ns
Biopyrrin/Cr level after dutasteride	2.0 ±1.4	2.0 ±2.1	ns
	ns	ns	
8OHdG/Cr level before dutasteride	4.9 ±4.8	9.5 ±5.1	<0.05
8OHdG/Cr level after dutasteride	3.7 ±2.6	6.1 ±3.4	0.07
	ns	<0.05	

Source of Funding: None

1733

LOWER URINARY TRACT SYMPTOMS AND DIET QUALITY: FINDINGS FROM THE 2000-2001 NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY

Bradley Erickson, Mary Vaughan-Sarrazin, Xin Lu, Iowa City, IA; Benjamin Breyer, San Francisco, CA; Karl Kreder, Peter Cram, Iowa City, IA*

INTRODUCTION AND OBJECTIVES: We evaluated the association between diet quality and the prevalence of lower urinary tract symptoms (LUTS).

METHODS: Urinary symptom and dietary data obtained from the 2000-2001 National Health and Nutrition Examination Survey (NHANES) was utilized for the study. Men were considered to have lower urinary tract symptoms (LUTS) if they reported "yes" to a question about "incomplete emptying" and/or 'difficulty starting urinary stream.' Diet quality was assessed using the 10-component United States Department of Agriculture (USDA) Healthy Eating Index (HEI) which grades diets by their conformance to USDA recommendations (total score 0-100, component score 0-10; higher scores = more conformance). The diet quality of study participants reporting urinary symptoms was compared to those not reporting symptoms. Multivariable logistic regression was used to calculate odds ratios after applying sample weights and controlling for known LUTS risk factors including age, race, smoking, diabetes, alcohol intake, BMI and exercise.

RESULTS: There were 1385 men ≥ 40 years included in the analysis, of which the adjusted LUTS frequency was 21.1%. Comparison of men with poor (total score <50; component score < 5) and good (total score > 80, component score ≥8) diets, as determined by USDA standards, revealed that men with poor dietary intake of dairy (22.4 v 16.4%, p = 0.013), protein (24.6 v 17.9%, p = 0.012), those with overall poor diets (25.8 v 17.8%, p = 0.018) and men with little dietary variety (26.1 v 17.6%, p = 0.001) had higher rates of LUTS. On multivariate analysis, an unhealthy diet (OR 1.7; 95% confidence interval (CI) 1.05 - 2.90) was associated with more LUTS while alcohol intake was protective from LUTS (OR 0.67; 95% CI 0.48 - 0.93) (Table 1). Individual HEI diet categories were not different on multivariable analysis.

CONCLUSIONS: In an analysis of NHANES and HEI data, we found evidence that a less healthy diet was an independent risk factor for LUTS.

Multivariable Logistic Regression Model for LUTS association

Model Variable	OR (95% CI)	p-value
Overall HEI Score	1.7 (1.1, 2.9)	0.031
Age > 60	2.4 (1.6, 3.5)	< 0.0001
Race		
___African American	2.8 (2.0, 4.0)	< 0.0001
___Hispanic	2.9 (1.8, 4.8)	< 0.0001
Diabetes	1.4 (0.8, 2.5)	0.24
Alcohol	0.7 (0.5, 0.9)	0.015
Smoking	1.0 (0.7, 1.4)	0.77
Exercise	0.8 (0.5, 1.3)	0.28
BMI	1.1 (0.7, 1.7)	0.67

Odds ratios: Overall HEI represents most healthy tertile relative to least healthy tertile. Age > 60 relative to Age ≤ 60; Race relative to reporting white race; Diabetes relative to no diabetes; Alcohol relative to no alcohol intake in past month; Smoking relative to no current smoking; Exercise relative to sedentary; BMI >30 (obese) relative to BMI < 30.

Source of Funding: None