

# ANALYSIS OF THE RELATIONSHIP BETWEEN BENIGN PROSTATIC ENLARGEMENT/LOWER URINARY TRACT SYMPTOMS AND TOTAL SERUM TESTOSTERONE LEVEL

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## Aim

The aim of our study was to evaluate the possible relationship between hormonal serum levels, lower urinary tract symptoms (LUTS) and Benign Prostatic Enlargement (BPE) in a group of Italian patients

## Materials & Methods

- ✓ From 2009 onwards, a consecutive series of patients with LUTS related to BPE were prospectively enrolled
- ✓ For each patient the International Prostatic Symptom Score (IPSS) and a ultrasound prostate volume were evaluated
- ✓ Body mass index (BMI) as well as waist circumferences were measured
- ✓ Blood samples were collected and tested for: PSA levels, testosterone, Sex Hormone Binding Globuline (SHBG), 17-Beta estradiol
- ✓ The association between hormone serum levels and LUTS/BPE using logistic regression analysis and Spearman correlation test

## Results

	Mean (DS)	Median (IQR)
Age (yrs)	67,2 (7,96)	68 (61/63)
BMI (kg/m <sup>2</sup> )	27,6 (12)	26,8 (24/29)
PSA (ng/ml)	7,4 (5,7)	5,4 (4/10,3)
Testosterone (ng/ml)	4,06 (1,6)	3,9 (3/4,8)
IPSS score	10,6 (6,7)	10 (5/15)
TRUS prostate volume (ml)	54,8 (28,45)	49,4(36/66)

Table 1: Population Characteristics (719 patients)

	EUGONADAL (554/719)	IPOGONADAL (165/719)	P
Age (yrs)	67,4 (8) 68(62/74)	67,3 (7,8) 67(62/73)	0,57
Trus Volume (ml)	48(36/65) 54,1 (27)	55(10) 49(36/67)	0,58
Waist circumferences (cm)	100,3(9,2) 100(94/106)	105(10,6) 104(98/111)	0,00
Bmi (Kg/m <sup>2</sup> )	26,7(3,4) 26,5(18/24)	28,2 (25/30) 28,6 (27)	0,00
IPSS	9,9(6,8) 9 (4/14)	10,5(7,4) 9(5/15)	0,50
PSA (ng/ml)	7,1(5,4) 5,2(4/10)	7,6(6) 5,3(3/10)	0,33
Testosterone (ng/ml)	4,5 (1,5) 4,2 (3,5/5)	2,2(0,5) 2,3(1,9/2,6)	0,00
17-beta estradiol (pg/ml)	25(12) 23(17/30)	22(12) 20(15/28)	0,00
SHBG (nmol/ml)	46(17) 44(34/55)	32(14) 29,4(24/36)	0,00

Table 2: Patient's characteristics according to testosterone level  
Data presented as: Mean (DS) and Median (IQR)

Risk of having LUTS			
	OR	95% CI	p
Hypogonadism	1,015	0,65-1,57	0,97
Age	1,004	0,98-1,02	0,71
TRUS volume	1,014	1,00-1,02	0,00

Table 4: Risk Factors for LUTS (IPSS>7)

Risk of having BPE			
	OR	95% CI	p
Hypogonadism	0,84	0,53-1,33	0,47
Age	0,99	0,96-1,01	0,42
IPSS score	1,06	1,03-1,09	0,00

Table 3: Risk Factors for BPE (Prostate Volume>40 ml)

## Conclusions

In our single center study, hormone serum levels were not associated with LUTS or BPE. Hypogonadal patients were not at higher risk of LUTS or BPE although they were obese and consequently presented a higher prostatic inflammation. Further studies should better investigated the role of hormone serum level in the development and progression of LUTS and BPE