

Does the degree of bladder outlet obstruction (BOO) correlate with the postoperative results of patients undergoing surgical treatment for benign prostatic enlargement (BPE)?



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BACKGROUND AND OBJECTIVE

- Strong evidence suggests that patients with BOO have greater overall improvement after surgical treatment for BPE, compared to patients without BOO.¹
- However, it is not clear if patients with BOO have greater improvement as the obstruction increases.
- We aim to determine the differences in patients who underwent photovaporization of the prostate (PVP) with GreenLight 180W XPS according to their degree of BOO.

METHODS

- Patients who underwent PVP between 2012 and 2017 with available urodynamic study (UDS) were included.
- Exclusion criterion was patients without BOO in UDS.
- BOOI was categorized into 40 - 100 (mild/moderate obstruction) and >100 (severe obstruction).
- Postoperative complications and effectiveness outcomes were reported.
- Descriptive and inferential statistics were employed.

RESULTS

- 382 patients met inclusion criteria, out of which 242 had BOOI 40-100 and 30 had BOOI >100; the rest had BOOI <40 and were not included in the analysis.
- No differences were found in the effectiveness outcomes between patients with BOOI 40-100 and BOOI >100 (Table 2).
- Pearson correlation coefficient between BOOI >40 and post-IPSS was $r = -0.09$, $p = 0.25$ (Figure 1).
- Age, previous acute urinary retention (AUR), $Q_{max} < 10$ ml/s, PVR >300ml, BCI >150 and prostate volume >120mL were associated with BOOI >100 (Table 3).

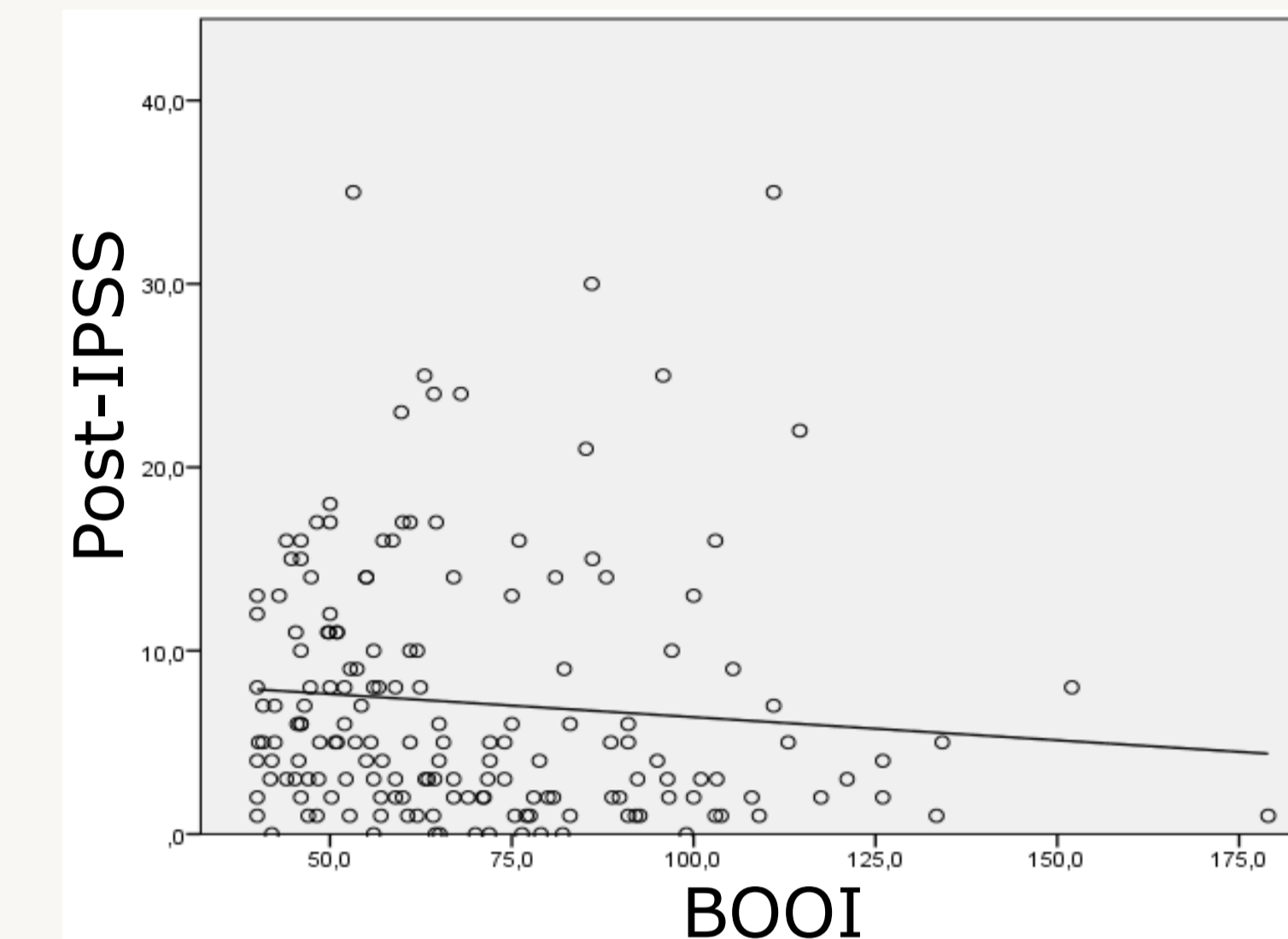


Figure 1. Scatter plot. Correlation between BOOI and Post-IPSS.

Table 1. Preoperative characteristics.

	BOOI 40-100	BOOI ≥100	p
Age (mean ± SD)	67 ± 9	63 ± 10	0.04
BMI ↓	26 ± 3	26 ± 4	0.98
Pre-PSA ¥	3 (1-5)	3 (2-6)	0.36
Pre-creatinine ¥	1 (0.9-1.2)	1 (0.9-1.1)	0.54
Diabetes mellitus (%)	19.4	16.7	0.71
History of AUR (%)	25.0	48.3	<0.01
Prostate volume ↓	68 ± 32	83 ± 33	0.03
IPSS ↓	18.9 ± 7.6	18.9 ± 7.1	0.99
QoL ¥	4 (3-5)	4 (3-6)	0.82
Urodynamic parameters			
Q_{max} ¥	9 (6-12)	6 (3-9)	<0.01
BCI ¥	105 (91-128)	145 (124-164)	<0.01
Voided volume (mL) ↓	241 ± 142	149 ± 121	<0.01
Voiding efficiency ↓	54 (30-74)	23 (9-52)	<0.01
PVR ¥	200 (130-300)	364 (200-450)	<0.01

¥ Median, IQR.

Table 2. Intra- and postoperative characteristics.

	BOOI 40-100	BOOI ≥100	p
Lasing time (min) ¥	38 (28-51)	47 (37-61)	<0.01
Energy per gr. of prostate (kJ/gr) ¥	4.8 (3.3-6.3)	4.7 (4.0- 5.3)	0.97
Surgical time (min) ¥	70 (54-100)	88 (68-116)	<0.01
AUR (%)	9.4	16.0	0.30
UTI (%)	10.9	16.0	0.45
Clavien-Dindo (%)			0.47
I-II	22.7	30.8	
III-IV	4.5	7.7	
Catheterization (h) ¥	18 (15-23)	19 (15-24)	0.59
Effectiveness outcomes			
Post-IPSS ¥	5 (2-11)	3 (1.8-8.3)	0.31
Post-QoL ¥	1 (1-3)	1 (0-2)	0.63
VAS ¥	9 (8-10)	9 (7.5-10)	0.71

¥ Median, IQR; VAS, visual analogue scale (symptomatic improvement)

Table 3. Multivariate logistic regression analysis to identify associations with BOOI >100.

	AOR	95% CI	p
$Q_{max} < 10$ mL/seg	4.3	1.1-17.1	0.039
PVR >300 MI	3.6	1.1-11.5	0.034
History of AUR	3.6	1.1-11.8	0.033
Age <64 y/o	6.8	1.8-24.9	0.004
Prostate volume >120 mL	5.6	1.1-30.9	0.046
BCI >150	4.8	1.6-20.8	0.007

CONCLUSIONS

- Severely obstructed patients were younger, had larger prostates, lower Q_{max} , stronger detrusor contractility, higher PVR and were more likely to have previous AUR compared to patients with BOOI 40-100.
- No correlation was found between BOOI >40 and post-IPSS.
- Regardless of their degree of BOO, patients showed similar symptomatic improvement after PVP.

References:

- Kim M, Jeong CW, Oh S-J (2017) Diagnostic value of urodynamic bladder outlet obstruction to select patients for transurethral surgery of the prostate: Systematic review and meta-analysis. PLoS ONE 12(2): e0172590. doi:10.1371/journal.pone.0172590