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HYPOTHESIS / AIMS OF STUDY

Aim of this study was to assess the role and the values of the preoperative post-void residual (PVR) urine in males underwent transurethral resection of the prostate (TURP) for lower urinary tract symptoms (LUTS) and the related outcomes after the procedure.

STUDY DESIGN, MATERIALS AND METHODS

This is a prospective ongoing study started in January 2017 involving males with LUTS candidates for TURP. The medical and urological history was recorded in all the population. Both preoperative evaluation and the 1-year follow-up consisted in: peak flow (Qmax), PVR, PVR-ratio as the ratio of PVR to bladder volume (BV: voided volume + PVR), and the International Prostate Symptoms Score Questionnaire (IPSS). Patients were also distributed in groups according to preoperative PVR thresholds: i) PVR 0-50ml; ii) PVR 51-100ml; iii) PVR 101-150ml; iiiii) PVR 151-200ml; iiiiii) PVR>200ml. Statistical analysis was performed using T-test, Wilcoxon test, one-way ANOVA test, Kruskal-Wallis Test.

RESULTS

Data were complete in 52 patients (mean age of 68.9+8.5 yrs). A significant improvement in voided volume, Qmax, PVR, IPSS score was documented (Table 1). The majority of the males showed a PVR < 100ml (59.6%), while the remaining 21/52 patients (40.4%) had a PVR >100ml (Table 2). No significant difference was found in Qmax and IPSS score among the groups, in both preoperative and postoperative assessment (Table 3). In each group we found a significant improvement in Qmax and IPSS score after transurethral resection of the prostate (Tables 4), except in the decrease of PVR in the Group i (PVR 0-50ml). This finding may be related to the low preoperative PVR.

Table 1: TUR-P outcomes.

	Pre-operative	1-year follow-up	P
N° pz	52	52	
VV, mean (SD)	214.8 (102.1)	301.0 (335.9)	0.08
Qmax, mean (SD)	9.7 (4.2)	19.5 (10.2)	<0.001
PVR, mean (SD)	120.5 (125.9)	25.8 (25.4)	<0.001
PVR%, mean (SD)	31.1 (22.3)	9.0 (8.8)	<0.001
IPSS tot, mean (SD)	22.6 (7.0)	8.7 (6.0)	<0.001

Table 2: preoperative PVR and stratification according to PVR:

- < 50ml: 40.4% (21/52)
- ≤ 100ml: 59.6% (31/52)
- > 100ml: 40.4% (21/52)
- > 150ml: 28.9% (15/52)

PVR, ml	0-50	51-100	101-150	151-200	>200
N. pts. (%)	21 (40.4)	10 (19.2)	6 (11.5)	7 (13.5)	8 (15.4)

Table 3: Preoperative and postoperative Qmax and IPSS score according to PVR threshold.

PVR, ml	0-50	51-100	101-150	151-200	>200	P
Number of pts.	21	10	6	7	8	
Pre-op. Qmax (mean)	10.9 ± 4.3	8.3 ± 3.3	10.4 ± 4.0	9.2 ± 4.4	8.4 ± 5.0	0.64
Pre-op. IPSS (mean)	24.3 ± 5.7	20.6 ± 7.7	17.8 ± 12.5	24.1 ± 5.8	23.0 ± 3.5	0.27
Post-op. Qmax (mean)	17.6 ± 7.0	18.1 ± 12.9	22.6 ± 11.2	29.2 ± 16.3	15.3 ± 3.4	0.32
Post-op. IPSS (mean)	6.3 ± 4.4	10.1 ± 5.6	9.3 ± 6.4	8.4 ± 8.6	5.8 ± 4.3	0.47

Table 4: comparison between pre and postoperative and Qmax, IPSS score, PVR according to PVR thresholds.

	Qmax pre, mean	Qmax post, mean	P
PVR pre TURP			
0-50	10.9 ± 4.3	17.6 ± 7.0	<0.01*
51-100	8.3 ± 3.3	18.1 ± 12.9	0.03*
101-150	10.4 ± 4.0	22.6 ± 11.2	<0.01*
151-200	9.2 ± 4.4	29.2 ± 16.3	<0.01*
>200	8.4 ± 5.0	15.3 ± 3.4	0.03*
IPSS pre, mean			
PVR pre-TURP			
0-50	24.3 ± 5.7	6.3 ± 4.4	<0.01*
51-100	20.6 ± 7.7	10.1 ± 5.6	<0.01*
101-150	17.8 ± 12.5	9.3 ± 6.4	<0.01*
151-200	24.1 [5.8]	8.4 ± 8.6	<0.01*
>200	23.0 ± 3.5	5.8 ± 4.3	<0.01*
PVR pre, mean			
PVR pre-TURP			
0-50	27.0 ± 18.2	23.4 ± 19.4	0.55*
51-100	71.0 ± 13.7	33.9 ± 26.8	<0.01*
101-150	133.3 ± 19.7	18.0 ± 24.9	<0.01*
151-200	184.6 ± 13.6	27.5 ± 29.9	<0.01*
>200	362.5 ± 113.9	21.3 ± 15.5	<0.01

INTERPRETATION OF RESULTS & CONCLUDING MESSAGE

Preoperative PVR:

- Did not significantly correlate with TURP outcomes, but decreases after TURP
- High in a minor part of the candidates for TURP
- Low association with other parameters influencing the decision-making in men with LUTS

Low impact in the decision-making

PVR controversial and poor reliable in the evaluation of men with LUTS

