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IS PRESSURE-FLOW STUDY USEFUL TO PREDICT THE OUTCOME OF TRANSURETHRAL RESECTION OF PROSTATE?

Hypothesis / aims of study

Despite widespread use of α1-blocker to relieve lower urinary tract symptoms (LUTS) suggestive of benign prostatic obstruction (BPO), not a few patients do need surgical treatment of BPO (prostatectomy). It is generally agreed that pressure-flow study (PFS) enhances better selection of patients who have actual BPO and will have a great benefit by prostatectomy. However, there have been some arguments about the role of PFS as a predictor of surgical outcome. In this study, we correlated the findings of preoperative PFS to the short-term outcome of transurethral resection of prostate (TURP).

Study design, materials and methods

A retrospective study was conducted in 61 patients with LUTS suggestive of BPO who underwent TURP from 2000 to 2007. LUTS and the quality of life were assessed by using I-PSS and QOL index. Preoperative prostatic volume was measured by transabdominal ultrasonography. All patients underwent uroflowmetry (UFM) and PFS before TURP. At 1 to 5 months after TURP the patients were reassessed with UFM. The outcome of TURP was determined by the change of maximum flow rate (Qmax). Increase in Qmax of 10 ml/sec or greater and of 5 to 10 ml/sec are defined as excellent and good, respectively (successful outcome group). Increase in Qmax of 2.5 to 5 ml/sec and of less than 2.5 ml/sec are defined as fair and poor, respectively (unsuccessful outcome group). We firstly analyzed the correlation of UFM data (Qmax and postvoid residual volume (PVR)) and PFS findings, and secondly analyzed what parameters of PFS could predict the outcome of TURP.

Results

LinPURR score correlated with preoperative Qmax and PVR. Qmax was lower and PVR was larger in the patients with LinPURR score of 4 - 6 than those with score of 0-3 (7.7 ml/sec vs. 9.7 ml/sec, p=0.03, and 91.4 ml vs. 55.9 ml, p=0.024). PVR was significantly different between the patients with and without detrusor overactivity (109.7 ml vs. 54.8 ml, p=0.02). The outcome of TURP was excellent in 25 patients, good in 20, fair in 10, and poor in 6. Thus successful outcome was obtained in 74% of the patients. Between those with successful and unsuccessful outcome, preoperative parameters were not significantly different, including total score of I-PSS, QOL index, prostatic volume, Qmax, PVR, and PFS parameters (LinPURR score, detrusor contractility, and presence or absence of detrusor overactivity) (Table 1). The rate of successful outcome was 84% in the patients with LinPURR score 4 - 6 and strong/normal detrusor contractility, while it was 68% in those with LinPURR score 0 - 3 and weak/very weak detrusor contractility (Table 2). This difference was not statistically significant.

Interpretation of results

The outcome of TURP tended to correlate with LinPURR and detrusor contractility on PFS. However, we could not find statistically significant preoperative parameters that could predict the outcome of TURP. Even though PFS indicated LinPURR score of 0 - 3 and weak/very weak detrusor contractility, about 70% of the patients had successful outcome of TURP.

Concluding message

LinPURR and detrusor contractility on PFS are, in part, useful to predict the outcome of TURP in patients with LUTS suggestive of BPO. However about 70% of the patients with no significant obstruction and weak/very weak detrusor contractility still can expect successful outcome of TURP. We conclude that PFS should not be used as a single, sole predictor of the outcome of TURP, but just as an informative tool to discuss with patients about the indication of TURP. Further studies are warranted to establish a multivariate approach using PFS data and other parameters to predict the outcome of prostatectomy.

Table 1

	Excellent / good	Fair / poor	
No. of patients	46	15	
Age (years)	69.9	71.5	ns
I-PSS	20.0	16.6	ns
QOL index	4.8	5.3	ns
Prostatic volume (ml)	33.7	41.0	ns
[Uroflowmetry]			
Maximum flow rate (ml/sec)	9.1	8.1	ns
Postvoid residual volume (ml)	72.4	66.8	ns
[Pressure-flow study]			
LinPURR [No. of patients (%)]			
0-3	25 (54)	10 (67)	
4-6	21 (46)	5 (33)	ns
Detrusor contractility [No. of patients (%)]			
Strong / normal	21 (46)	5 (33)	
Weak / very weak	25 (54)	10 (67)	ns
Detrusor overactivity [No. of patients (%)]			
Present	13 (28)	5 (33)	

Absent	33 (72)	10 (67)	ns

Table 2: The rate of successful outcome (%)

	LinPURR 0-3	4-6	
Detrusor contractility			
Strong / normal	71	84	81
Weak / very weak	68	71	69
	69	81	74

Specify source of funding or grant	**None**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**The ethical committee of Asahikawa Medical College**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**