322

Lin V C[1], Jiang Y[2], Kuo H[2]
1. *E-Da Hospital, Kaohsiung, Taiwan,* ***2.*** *Tze Chi Medical Center, Hualien, Taiwan*

PREDICTIVE VALUES OF INTERNATIONAL PROSTATIC SYMPTOM SCORE VOIDING/STORAGE RATIO, TOTAL PROSTATIC VOLUME, MAXIMUM FLOW RATE AND POSTVOID RESIDUAL IN THE DIAGNOSIS OF BLADDER OUTLET OBSTRUCTION IN MEN WITH LOWER URINARY TRACT SYMPTOMS

Hypothesis / aims of study

The aim of this study was to investigate the predictive accuracy of International Prostate Symptom Score (IPSS), the ratio of IPSS subscore, total prostate volume (TPV), maximal urinary flow rate (Qmax), and post-void residual (PVR) to detect bladder outlet obstruction (BOO) in men with lower urinary tract symptoms (LUTS) based on the videourodynamic study (VUDS) findings.

Study design, materials and methods

A total of 298 men with LUTS who had been underwent VUDS due to various causes were enrolled and divided into two groups: BOO and non-BOO. The IPSS (total score, IPSS-T), IPSS subscore ratio, TPV, Qmax between the two groups (BOO vs. non-BOO) were collected, analysed to calculate the positive and negative predictive values of BOO.

Results

The mean age was 72.7±9.0 years. 167 patients (56%) had BOO according to VUDS findings. The BOO group had a significantly higher IPSS V/S ratio than non-BOO group (2.28 ± 2.25 vs. 0.90 ± 0.88, p<0.001). In the predictive accuracy of BOO, the combination of TPV ≧30ml and Qmax ≦10ml/sec rendered a 68.8% positive predictive value (PPV) and a 53.5% negative predictive value (NPV) (Table 1). With an additional criteria using IPSS ≧ 12 or IPSS ≧ 15, PPV were increased to 75.0% and 78.5% with NPV to 50.9 % and 50.2%. With an additional criteria using IPSS V/S ratio >1 or >2, PPV were increased to 91.4% and 97.3% with NPV to 54.8% and 49.8%, 8.33 and 27.00 in positive likelihood ratio (+LR), and 0.65 and 0.79 in negative likelihood ratio (-LR), respectively. The combination of TPV ≧ 40ml and Qmax ≦10ml/sec rendered a 67.4% PPV and a 48.6% NPV in the predictive accuracy of BOO. With an additional criteria using IPSS ≧12 or IPSS ≧15, PPV were increased to 75.0% and 76.7%. With an additional criteria using IPSS V/S ratio > 1 or >2, PPV were increased to 92.5% and 100% with NPV to 49.6% and 47.1%, 9.65 and 0.12 / 0 in +LR, and 0.80 and 0.88 in –LR, respectively.

Interpretation of results

Combination of the different parameters using IPSS, TPV and Qmax, the PPV and +LR were both increased in the predictive accuracy of BOO. IPSS V/S ratio could additionally rendered a higher PPV and +LR than IPSS-T.

Concluding message

Our experience indicated that IPSS V/S ratio was promising to magnify the difference between these two groups and being a more useful diagnostic tool than IPSS-T in assessing male BOO in tailoring appropriate treatment.

Table 1. The predictive values of the combination of IPSS, TPV, and Qmax in the diagnosis of BOO in men with LUTS

	BOO No.	Non-BOO No.	Total No.	PPV	NPV	+LR	-LR
TPV ≧ 30ml & Qmax ≦ 10ml/s	88	40	128	68.8%	53.5%	1.73	0.68
+ IPSS-T ≧ 12	60	20	80	75.0%	50.9%	2.34	0.76
+ IPSS-T ≧ 15	51	14	65	78.5%	50.2%	2.85	0.78
+ IPSS V/S > 1	64	6	70	91.4%	54.8%	8.33	0.65
+ IPSS V/S > 2	36	1	31	97.3%	49.8%	27.00	0.79
TPV ≧ 40ml & Qmax ≦ 10ml/s	58	28	86	67.4%	48.6%	1.62	0.83
+ IPSS-T ≧ 12	39	13	52	75.0%	48.0%	2.36	0.85
+ IPSS-T ≧ 15	33	10	43	76.7%	47.5%	2.60	0.87
+ IPSS V/S > 1	37	3	40	92.5%	49.6%	9.65	0.80
+ IPSS V/S > 2	20	0	20	100.0%	47.1%	0.12 / 0	0.88

BOO: bladder outlet obstruction, IPSS-T: total IPSS score, IPSS-V/S: the ratio of IPSS-V and IPSS-S, PPV: positive predictive value, NPV: negative predictive value
+LR: positive likelihood ratio, -LR: negative likelihood ratio

Disclosures

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