

RISK FACTORS OF WEAK DETRUSOR FUNCTION IN BENIGN PROSTATE HYPERPLASIA PATIENTS: DETERMINING A PROGNOSTIC FACTOR TO PREDICT THE OPTIMUM TIMING FOR SURGICAL TREATMENT.

Hypothesis / aims of study

Benign Prostate Hyperplasia (BPH) is a major cause of Lower Urinary Tract Symptoms (LUTS) in men. The main symptom is voiding difficulty and often lead to urinary retention (1). Medication is the first choice for treatment. When medication is insufficient, surgical treatment is required (2). However, due to long terms of difficulty, some patients happen to show very weak detrusor functions (3). Thus, optimum timing of surgery is a very important concern. The aim of this study was to determine the risk of low detrusor function and to prognose the optimum timing of surgical treatment.

Study design, materials and methods

We retrospectively reviewed the medical records of 581 patients who were clinically diagnosed as BPH between 2008 and 2015. BPH was diagnosed using transabdominal ultrasonography and medical history. All of the patients were undergone videourodynamic studies (V-UDSs) to determine lower urinary tract obstruction and indication of surgical treatment. Cases who did not have full results of ultrasonography and V-UDSs were evaluated from this study. Age, prostate volume, post-voided residual urine (PRV) were evaluated. As the UDS parameters, mean bladder compliance, mean abdominal leak point pressure, Amax, and Pdetmax were evaluated. The Schafer's nomogram was used to evaluate the obstruction of lower urinary tract. The correlations among age, prostate volume, and V-UDSs findings were evaluated to determine the causal factor of weak detrusor function. Moreover, to clarify the aging factor influenced on weak detrusor, the enrolled patients were divided into 2 groups; more and less than average age. The results of V-UDSs were compared among the groups. Spearman's rank correlation coefficient was used to evaluate the correlations. And, the UDSs findings were compared among the divided groups using unpaired t-tests.

Results

Among the 581 patients, we evaluated 295 patients who had full results of ultrasonography and V-UDSs. The mean value of prostate volume was 40ml. Mean PVR was 95ml and 95 patients had more than 100ml of PVR. During the filling phase 79 patients had detrusor overactivity. 67 patients showed decrease in urinary sensation. The mean bladder compliance was 36.9 ml/cmH₂O and low compliance bladder was seen inn 57 patients. Stress urinary incontinence was seen in 16 patients and the mean aabdnominal leak point pressure was 92.2 cmH₂O. All patients were evaluated with pressure flow studies. Of those without urinary retention, the mean Qmax was 7.3ml/sec and mean Pdetmax was 85.6 cmH₂O. As the result of Schafer`s nomogram, 246 patients had a stronger obstruction than grade III and 100 patients had a lower detrusor function than weak. Although the values of age and prostate volume did not show a correlation with UDSs findings including obstruction and weak detrusor, age and obstruction showed a correlation. Age and detrusor function also showed a correlation. Prostate volume and obstruction showed a correlation, but prostate volume and detrusor function did now show a correlation (Table 1). When compared by age, patients over 72 years old tended to show a weaker detrusor function (Table 2, Fig 1).

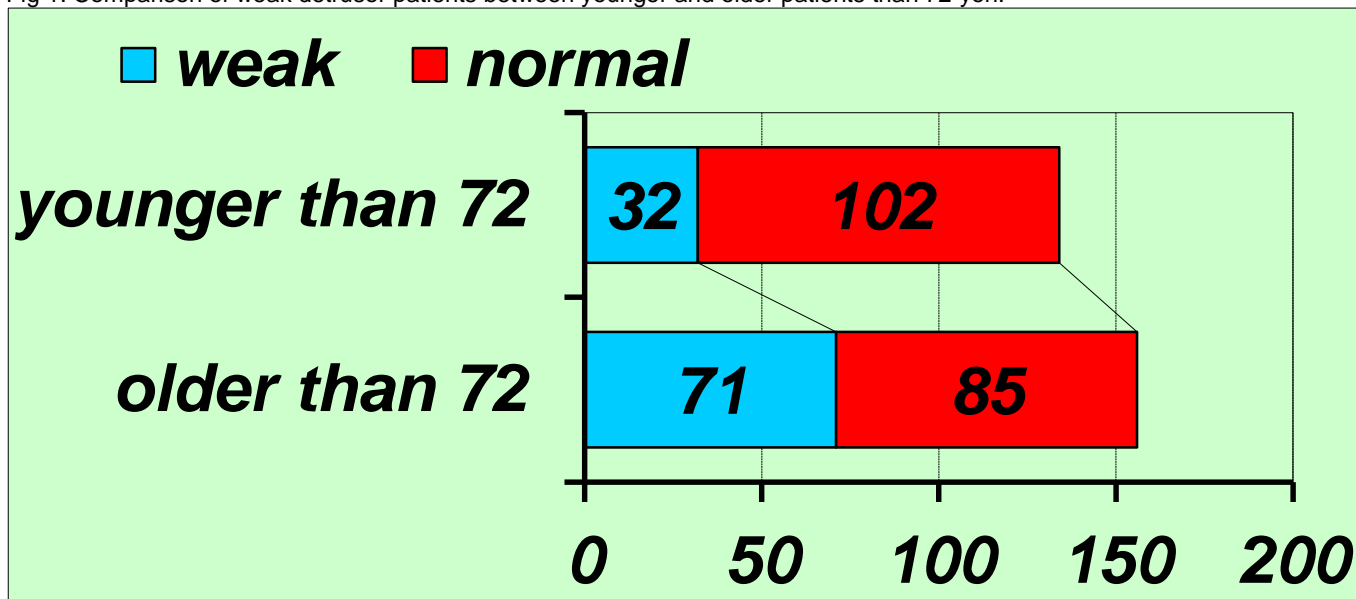
Table 1. The correlation of age, prostate volume and V-UDSs

UDS findings	Obstruction	Weak detrusor
Age	r=0.10320	r=0.17534
Prostate volume	r=0.35551	r=0.04128

Table 2. Results of detrusor function

	Younger than 72 years old	Older than 72 years old
Accontrile	10	10
Very weak	3	7
Weak	19	54
Normal	63	71
Strong	39	14

Fig 1. Comparison of weak detrusor patients between younger and older patients than 72 yon.



Interpretation of results

From this study, prostate volume was not a risk factor for weaker detrusor. Patients over 72 years old tended to have a weaker detrusor function. When considering surgical treatment, patients younger than 72 years old may have a better outcome after surgery.

Concluding message

Ageing may influence on weakness of detrusor contraction among BPH patients. Age should be considered to indication of surgical treatment for BPH.

References

1. BMJ (2014) 14; 349
2. J Urol (2013) 190; 1976-1977
3. J Urol (2006) 186; 213-216

Disclosures

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