

Treatment Outcomes Following Water Vapor Energy Therapy in Patients with Benign Prostatic Hyperplasia Under Catheter Management



Mikami K¹

1. Teikyo University Chiba Medical Center

Introduction

Treatment options for benign prostatic hyperplasia (BPH) are diversifying, and there is a growing need for minimally invasive treatments. In Japan, in particular, where the declining birthrate and aging population are expected to continue, traditional surgical treatments are often difficult to implement due to their invasiveness and perioperative risks for patients who are necessitated by long-term catheter placement. Transurethral water vapor therapy (WAVE) has attracted attention as a relatively short, minimally invasive treatment, but there have been limited reports on its treatment outcomes in patients under catheterization. In this study, we performed WAVE in patients with BPH who had catheters in place, and retrospectively examined factors related to its effectiveness.

Method

- We conducted a statistical analysis of the patient characteristics of those who were able to discontinue postoperative catheter management, focusing on 21 of the 39 WAVE procedures performed at our hospital by six surgeons between July 2023 and February 2024 who had been on catheter management prior to surgery, including the results of preoperative urodynamic study. The patients included in this analysis are those who have undergone at least one catheter removal attempt while taking α -blocker.
- (Univariate analysis: Mann-Whitney U test Software used: EZR)

Result

- The catheter removal group and non-removal group comprised 16 and 5 patients, respectively. The median age was 77 years (range 64-88) in the catheter-free group and 80 years (range 70-88) in the catheter-dependent group.
- Univariate analysis of patient characteristics revealed a statistically significant difference in Pdet Qmax from the preoperative urodynamic study ($P=0.05$). No significant differences were observed for other factors such as prostate volume, Schfer classification, or number of waves (Table 1).

Table 1. Postoperative: No catheter: 0 (Yes) / 1 (No)				
Group	0 (n=16)	1 (n=5)	p.value	
	Median [25%–75%]	Median [25%–75%]		
age	77.00 [74.7, 81.5]	80.00 [75.0, 81.5]	0.836	
BMI	21.27 [20.0, 23.2]	22.76 [22.1, 23.0]	0.313	
prostate volume	48.00 [35.2, 68.2]	45.00 [24.0, 73.0]	0.869	
Number of injections	6.00 [4.75, 6.25]	5.50 [5.00, 7.50]	0.922	
Urodynamic study				
Shafer (%)	2 1 (6.7%)	1 (20.0%)	0.291	
	3 0 (0.0%)	1 (20.0%)		
	4 9 (60.0%)	2 (40.0%)		
	5 5 (33.3%)	1 (20.0%)		
PdetQmax	80.00 [47.5, 105.5]	55.00 [47.0, 57.0]	0.05	
Expected Qmax	16.00 [12.00, 20.25]	12.00 [12.00, 17.00]	0.607	

Discussion

- Since WAVE is a procedure that can be performed quickly, carries virtually no postoperative complications, and is generally safe, the number of procedures is expected to continue to rise as it is considered a useful option for the growing elderly population. Joint studies with other institutions have also reported its efficacy over a five-year postoperative period.¹⁾ It can be performed on cases of mid-urethral prolapse and for prostates of a certain size, and is therefore considered useful for a wide range of cases.²⁾

1) McVary, et al :The Journal of urology vol. 206,3 (2021)

2) Woo, Henry et al. European urology open science vol. 58 64-72. 8 Nov. 2023