ORIGINAL RESEARCH

Outcome of initial trial without catheter in benign prostatic hyperplasia patients with acute urinary retention

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ABSTRACT
Background: A common urological emergency requiring hospitalization is acute urine retention (ARU) brought on by benign prostatic hyperplasia (BPH), which is typically treated with urethral catheterization. The present study was conducted to assess outcome of initial trial without catheter in benign prostatic hyperplasia patients. **Materials & Methods:** 75 patients of acute urine retention of both genderswere divided into three groups according to intravenous prostatic protrusion. IPP was less than 5 mm in group I, 5–10 mm in group II, and greater than 10 mm in group III.Post-void residual urine volume (PVRU), IPP and its grade, total prostate volume, serum prostate specific antigen (PSA), international prostate symptom score (IPSS), and peak flow rate of patients who had voids were all measured. **Results:** The mean PSA was 5.98 ng/ml, 5.37 ng/ml and 4.98 ng/ml. The mean TPV was 43.9 ml, 48.4 ml and 43.1 ml. The mean TZV was 11.6 ml, 20.2 ml and 30.5 ml and the mean TZI was 0.37, 0.32 and 0.57 in group I, II and III respectively. The difference was significant (P< 0.05). There was significant difference in total score, irritative subscore and obstructive subscore of IPSS, QOL, Qmax and PVR in group I, II and III (P< 0.05). **Conclusion:** One useful metric for assessing the success of a voiding trial following ARU is intravenous prostatic protrusion.

Keywords: Acute urine retention, Intravesical prostatic protrusion, obstructive subscore

INTRODUCTION

A common urological emergency requiring hospitalization is acute urine retention (ARU) brought on by benign prostatic hyperplasia (BPH), which is typically treated with urethral catheterization.[1] Transurethral prostate resection, once thought to be the gold standard of treatment, was performed on BPH patients in ARU. Nonetheless, a sizable portion of patients vaginated on their own after the catheter was removed, negating the need for surgery. Since then, there has been doubt about the usual prudence of routine transurethral prostate removal after ARU.[2]

The preferred candidate for medical treatment includes patients without bothersome LUTS, without obstructive complications, small sized prostate and unwilling or surgically unfit patients.[3] Acute urinary retention (AUR) is the most important event in the natural history of benign prostatic hyperplasia (BPH) that calls for urinary catheterization.[4] Trial without catheter (TWOC) is an ambulatory care protocol, failure of which requires re-catheterization, a follow-up visit, subsequent evaluation, and surgical intervention. Intravesical prostatic protrusion (IPP), a unique anatomical configuration has recently become a very significant component in the evaluation of BPH patients.[5]After acute urine retention (AUR), the result of a trial without a catheter is predicted by intravenous prostatic protrusion. However, urologists, doctors, and general practitioners are not adequately aware of its technical significance in BPH patients who arrive with AUR.[6,7] The present study was conducted to assess outcome of initial trial without catheter in benign prostatic hyperplasia patients.

MATERIALS & METHODS

The present study consisted of 75 patients of acute urine retention of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Trans-abdominal ultrasounds (TAUS) were performed on everyone. Post-void residual urine volume (PVRU), IPP and its grade, total prostate volume,

serum prostate specific antigen (PSA), international prostate symptom score (IPSS), and peak flow rate of patients who had voids were all measured. Patients were divided into three groups according to intravenous prostatic protrusion. IPP was less than 5 mm in group I, 5–10 mm in group II, and greater than 10 mm in group III. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Assessment of parameters

Parameters	Group I	Group II	Group III	P value
PSA (ng/ml)	5.98	5.37	4.98	0.72
TPV (ml)	43.9	48.4	43.1	0.22
TZV (ml)	11.6	20.2	30.5	0.05
TZI	0.37	0.32	0.57	0.04

Table I, graph I shows that mean PSA was 5.98 ng/ml, 5.37 ng/ml and 4.98 ng/ml. The mean TPV was 43.9 ml, 48.4 ml and 43.1 ml. The mean TZV was 11.6 ml, 20.2 ml and 30.5 ml and the mean TZI was 0.37, 0.32 and 0.57 in group I, II and III respectively. The difference was significant (P< 0.05).

Graph I Assessment of parameters

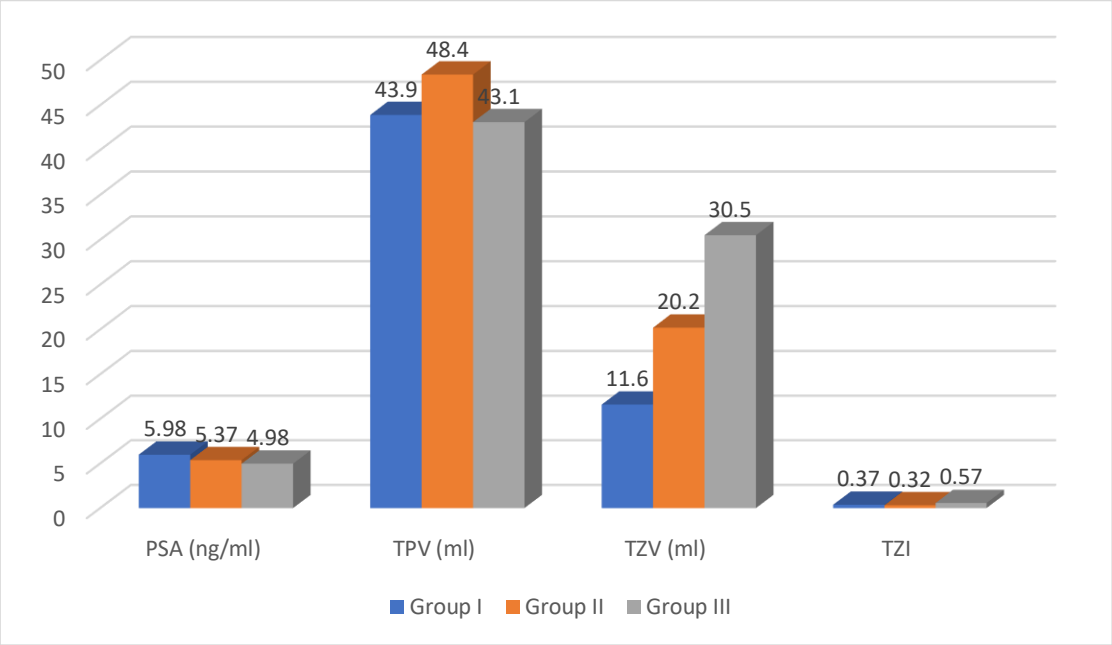

Table II Assessment of baseline and endpoint parameters

Parameters		IPSS			QOL	Qmax (ml/sec)	PVR (ml)
		Total score	Irritative subscore	Obstructive subscore			
Group I	Baseline	22.50	7.49	15.01	2.1	13.3	74.3
	Endpoint	11.4	4.50	6.9	1.6	15.2	42.8
	P value	0.01	0.05	0.02	0.02	0.05	0.01
Group II	Baseline	23.2	7.2	16.0	3.7	11.1	81.5
	Endpoint	13.1	4.5	8.6	2.4	13.7	65.1
	P value	0.01	0.04	0.02	0.92	0.89	0.61
Group III	Baseline	27.0	8.3	18.7	4.6	6.7	152.4
	Endpoint	21.5	5.6	15.9	4.8	6.4	184.5
	P value	0.58	0.80	0.91	0.91	0.92	0.95

Table II shows that there was significant difference in total score, irritative subscore and obstructive subscore of IPSS, QOL, Qmax and PVR in group I, II and III (P< 0.05).

DISCUSSION

One of the most dangerous side effects of BPH is thought to be ARU.[8] On the management of ARU because of BPH, there is disagreement, nevertheless. In certain units, TWOC is used to evaluate the patient's capacity for spontaneous voiding, but in

others, an episode of ARU serves as a sign for prostatectomy without the requirement for TWOC.[9] It has been shown, meanwhile, that up to 23% of individuals did not need surgery.[10,11] The present study was conducted to assess outcome of initial trial without catheter in benign prostatic hyperplasia patients.

We found that mean PSA was 5.98 ng/ml, 5.37 ng/ml and 4.98 ng/ml. The mean TPV was 43.9 ml, 48.4 ml and 43.1 ml. The mean TZV was 11.6 ml, 20.2 ml and 30.5 ml and the mean TZI was 0.37, 0.32 and 0.57 in group I, II and III respectively. Tan et al[12] used transabdominal ultrasound to assess a straightforward, non-invasive technique for predicting the result of a voiding trial after acute urine retention (ARU) based on intravesical prostatic protrusion (IPP). The study included males over 50 who presented with their first episode of ARU. Prostate volume, serum prostate specific antigen, residual urine volume, and catheterization duration were all noted. A catheter was used in situ to fill the patient's bladder with 200 milliliters of normal saline. Transabdominal ultrasound was used to measure IPP in the mid-sagittal area. Grades 1—5 mm or less, 2—greater than 5 to 10 mm, and 3—greater than 10 mm—were used to categorize the degree of protrusion. Following catheter removal, uroflowmetry and post-void residual urine were measured. If the patient was unable to regain adequate micturition, with a maximum urine flow of less than 10 ml per second and a post-void residual pee of more than 100 ml, the voiding trial was considered a failure. The study involved 100 patients in total. According to grades 1 through 3 IPP, the voiding trial failure rates were 36% (13 of 36 cases), 58% (11 of 19), and 67% (30 of 45).

We observed that there was significant difference in total score, irritative subscore and obstructive subscore of IPSS, QOL, Qmax and PVR in group I, II and III ($P< 0.05$). A protuberance of larger median and/or lateral lobes into the bladder as a result of morphological alterations inside the prostate is known as an intraavesical prostatic protrusion. Due to a ball-valve-style exit and irritation of the bladder neck or trigone, respectively, it has a major effect on the bladder's ability to store and void. ARU is among the most serious side effects of BPH. However, there is no consensus on how to treat ARU brought on by BPH. While TWOC is sometimes used to assess the patient's capacity for spontaneous voiding, in other situations, an episode of ARU acts as a clear indication that surgery is necessary without the need for TWOC.[13]

The limitation the study is small sample size.

CONCLUSION

Authors found that one useful metric for assessing the success of a voiding trial following ARU is intravenous prostatic protrusion.

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