

ORIGINAL RESEARCH

Assessment of outcome of initial trial without catheter in benign prostatic hyperplasia patients with IPP of different grades presented with acute urinary retention

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ABSTRACT

Background: Acute urine retention (ARU) due to benign prostatic hypertrophy (BPH) is a common urological emergency for hospital admission that is usually managed by urethral catheterization. The present study was conducted to assess outcome of initial trial without catheter in benign prostatic hyperplasia patients with IPP of different grades presented with acute urinary retention. **Materials & Methods:** 58 patients of acute urine retention (AUR) of both gender under went trans-abdominal ultrasound (TAUS). International prostate symptom score (IPSS), serum prostate specific antigen (PSA), total prostate volume, IPP and its grade, peak flow rate of voided patients, post-void residual urine volume (PVRU) was recorded. Based on intravesical prostatic protrusion, patients were classified into 3 groups. Group I had IPP of <5 mm, group II had 5-10 mm and group III had >10 mm. **Results:** The mean PSA (ng/ml) was 5.90, 5.32 and 4.92. The mean TPV (ml) was 43.6, 48.1 and 43.7. The mean TZV (ml) was 11.3, 20.4 and 30.2 and the mean TZI was 0.34, 0.39 and 0.52 in group I, II and III respectively. The difference was significant (P< 0.05). There was significant difference in total score, irritative sub score and obstructive subscore of IPSS, QOL, Qmax and PVR in group I, II and III (P< 0.05). **Conclusion:** IPP is a helpful indicator for determining whether a voiding trial after ARU was successful.

Key words: Acute urine retention, benign prostatic hypertrophy.

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INTRODUCTION

Acute urine retention (ARU) due to benign prostatic hypertrophy (BPH) is a common urological emergency for hospital admission that is usually managed by urethral catheterization.¹ Previously patients with BPH who were in ARU have undergone transurethral prostate resection, which was regarded as the gold standard treatment.² However, a significant number of patients voided spontaneously at catheter removal and did not require any surgical intervention. The conventional wisdom of routine transurethral prostate resection following ARU has since been questioned.³

The preferred candidate for medical treatment includes patients without bothersome LUTS, without obstructive complications, small sized prostate and unwilling or surgically unfit patients. 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 Intravesical prostatic protrusion predicts the

outcome of a trial without catheter following acute urine retention (AUR). However, its technical consideration in BPH patients presented with AUR is not well known to the community of the urologists, physicians and general practitioners.⁶ The present study was conducted to assess outcome of initial trial without catheter in benign prostatic hyperplasia patients with IPP of different grades presented with acute urinary retention.

MATERIALS & METHODS

The present study consisted of 58 patients of acute urine retention (AUR) of both genders. All gave their written consent to participate in the study.

RESULTS

Table I: Assessment of parameters

Parameters	Group I	Group II	Group III	P value
PSA(ng/ml)	5.90	5.32	4.92	0.12
TPV(ml)	43.6	48.1	43.7	0.25
TZV(ml)	11.3	20.4	30.2	0.05
TZI	0.34	0.39	0.52	0.04

Table I, graph I shows that mean PSA (ng/ml) was 5.90, 5.32 and 4.92. The mean TPV (ml) was 43.6, 48.1 and 43.7. The mean TZV (ml) was 11.3, 20.4 and 30.2 and the mean TZI was 0.34, 0.39 and 0.52 in group I, II and III respectively. The difference was significant (P< 0.05).

Graph I: Assessment of parameters

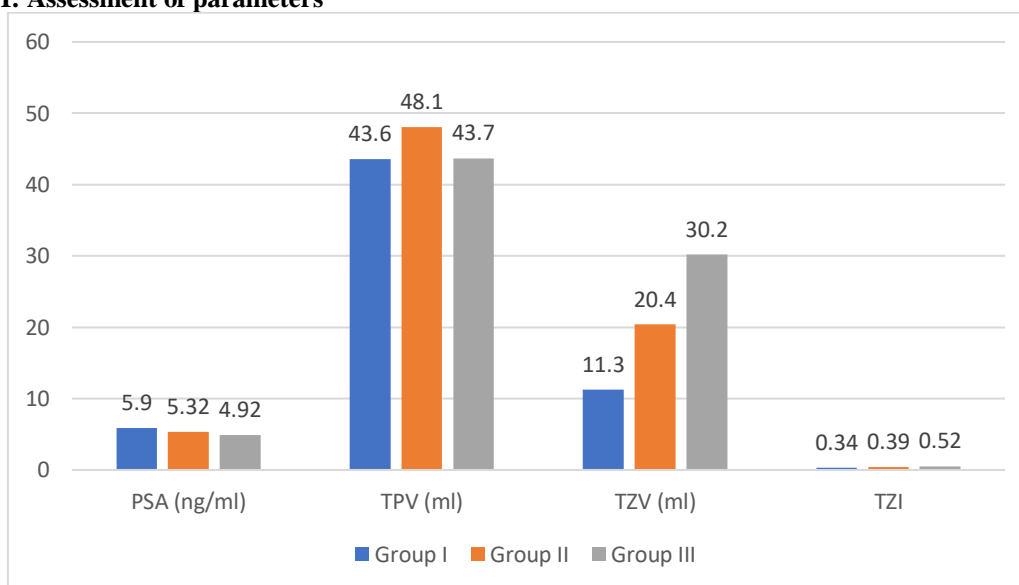


Table II: Assessment of baseline and endpoint parameters

Parameters		IPSS			QOL	Qmax (ml/sec)	PVR (ml)
		Total score	Irritative subscore	Obstructive subscore			
Group I	Baseline	22.42	7.41	15.01	2.3	13.6	75.3
	Endpoint	11.2	4.52	6.68	1.2	15.4	43.8
	P value	0.02	0.05	0.04	0.03	0.05	0.01
Group II	Baseline	23.9	7.5	16.4	3.4	11.2	82.5
	Endpoint	13.3	4.1	9.2	2.1	13.4	63.1
	P value	0.01	0.04	0.02	0.91	0.82	0.51
Group III	Baseline	27.2	8.0	19.2	4.5	6.1	157.4
	Endpoint	22.5	5.1	17.4	4.8	6.2	180.5
	P value	0.84	0.82	0.92	0.95	0.97	0.92

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

ARU is considered one of the most serious complications of BPH.^{7,8} However, there is no consensus on the management of ARU due to BPH. At some units TWOC is done to assess spontaneous voiding ability, while at others an episode of ARU is an indication for prostatectomy without the need of TWOC.⁹ However, it has been noted that up to 23% of patients did not require surgery.^{10,11} The present study was conducted to assess outcome of initial trial without catheter in benign prostatic hyperplasia patients with IPP of different grades presented with acute urinary retention.

We found that mean PSA (ng/ml) was 5.90, 5.32 and 4.92. The mean TPV (ml) was 43.6, 48.1 and 43.7. The mean TZV (ml) was 11.3, 20.4 and 30.2 and the mean TZI was 0.34, 0.39 and 0.52 in group I, II and III respectively. Tan et al¹² evaluated a simple, non-invasive method to predict the outcome of a voiding trial following acute urine retention (ARU) based on intravesical prostatic protrusion (IPP) using transabdominal ultrasound. Males older than 50 years presenting with an initial episode of ARU were included in the study. The duration of catheterization, residual urine volume, serum prostate specific antigen and prostate volume were recorded. The patient bladder was filled with 200 ml normal saline via a catheter in situ. IPP was measured in the mid sagittal section using transabdominal ultrasound. The degree of protrusion was classified as grades 1—5 mm or less, 2—greater than 5 to 10 mm and 3—greater than 10 mm. Uroflowmetry and post-void residual urine were recorded after catheter removal. The voiding trial was judged to be unsuccessful if the patient failed to re-establish satisfactory micturition, with post-void residual urine greater than 100 ml and maximum urine flow less than 10 ml per second. A total of 100 patients were included in the study. The failure rate of the voiding trial based on grades 1 to 3 IPP were 36% (13 of 36 cases), 58% (11 of 19) and 67% (30 of 45).

We found that there was significant difference in totalscore, irritativesubscore and obstructivesubscore of IPSS, QOL, Qmax and PVR in group I, II and III ($P < 0.05$). Lodh et al¹³ evaluated the outcome of initial trial without catheter in Benign prostatic hyperplasia patients with IPP of different grades presented with acute urinary retention. Mean patient age was 69.76 ± 9.54 years (range 52 to 87) in group A, 67.80 ± 7.70 years (range 54-82) in group B and 66.23 ± 8.84 years (range 51-81) in group C. Mean value of IPP was greater in group C.

Intravesical prostatic protrusion can be defined as a protuberance of enlarged median and or lateral lobes into the bladder secondary to morphological changes within the prostate. It produces significant impact on the storage and voiding function of the bladder because of a ball-valve type of outlet, and irritation of the bladder neck or trigone respectively. One of the

most severe complications of BPH is ARU. On how to treat ARU caused by BPH, there is no agreement, though. While TWOC is performed at certain circumstances to evaluate spontaneous voiding ability, at others an episode of ARU serves as a direct signal for surgical intervention without the requirement for TWOC.¹⁴

The limitation the study is small sample size.

CONCLUSION

Authors found that IPP is a helpful indicator for determining whether a voiding trial after ARU was successful.

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