

## Original Research Article

# A study on acute urinary retention in patients with benign prostatic hyperplasia at a rural setup

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## ABSTRACT

**Background:** Acute urinary retention (AUR) is one of the most significant complications of benign prostatic hyperplasia (BPH). Aim was to discuss the management of AUR in BPH in a rural setup.

**Methods:** It was a prospective study, at PESIMSR, Kuppam, on 100 BPH patients who presented to the ER or OPD with AUR from November 2016 to June 2018. All were catheterized initially. Patient clinical characteristics, prostate size, type of AUR and management one (type of catheterization, hospitalization, trial without catheterisation (TWOC), use of medication, immediate and elective surgery) were recorded.

**Results:** Mean age was  $68.33 \pm 9.1$ . Most patients (74 %) had spontaneous AUR and rest had precipitating factors. A per-urethral catheter (PUC) was inserted in most cases (96%), rest had supra-pubic cystostomy (SPC). Patients with prostate volume of  $<30$  ml ( $n=8$ ) were started on alpha-blocker (AB) alone and those with  $>30$  ml were given AB with 5 alpha-reductase inhibitor (ARI) combination. TWOC had an overall success rate of 72% ( $n=72$ ), of them 38 opted for elective surgery. TWOC failed in 28 patients who were re-catheterized and underwent transurethral resection of prostate (TURP) on an elective basis. 66 out of 100 patients underwent TURP in the course of management of AUR in BPH.

**Conclusions:** Management of AUR in BPH patients in real-life practice in a rural setup hospital has been evaluated. It shows that urethral catheterization, medication, TWOC and finally continuing medical management or planning TURP based has become standard practice.

**Keywords:** AUR, BPH, TWOC, TURP

## INTRODUCTION

AUR is a severe complication of BPH characterized by a sudden and painful inability to void voluntarily.<sup>1</sup> 10% of men in their seventies and 30% in their eighties will have AUR within the next five years. BPH is the cause in at least 65% of men presenting with AUR. They often have lower urinary tract symptoms (LUTS) for an average of 32 months prior to the AUR. It is often unexpected, painful and distressing representing a significant worldwide public health issue.<sup>2</sup>

The annual incidence of primary AUR varies from 2.2 to 6.8 per 1000 men, according to a series.<sup>3-5</sup> It is the presenting feature for approximately 1 in 5 men who undergo trans urethral resection of the prostate (TURP).

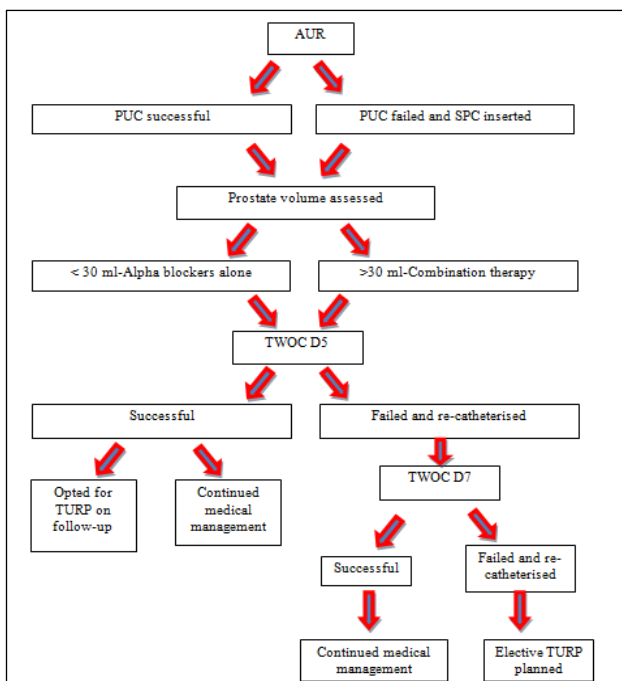
However, in the vast majority of cases, AUR appears simply related to the natural history of BPH (also called 'spontaneous' AUR).<sup>6</sup> In some cases, AUR appears consecutive to a triggering event (also called 'precipitated' AUR).

Management of AUR consists of immediate bladder decompression by catheterization, trial without catheter, alpha blockers, 5-alpha-reductase inhibitors (usually) followed by BPH-related surgery. There is a high variability within and among countries in the management of AUR in 'real-life' practice, in terms of duration of catheterization, hospital admission, Alpha blockers, management after a failed trial without catheter (TWOC), emergency or delayed surgery.<sup>7-9</sup> Urgent prostatic surgery after AUR is associated with greater morbidity and mortality than delayed prostatectomy. Alpha blockers mainly help to delay the surgery and may avoid surgery altogether in a subgroup of patients. TURP remains the "gold standard" if a trial without catheter fails.<sup>10</sup>

This study has been undertaken in a rural setup and presented comprehensively, with reference to the presentation of the case, choice of the mode of management and the subsequent effect of the treatment.

## METHODS

It was a prospective study, conducted at PESIMSR, Kuppam, Andhra Pradesh. The study included 100 patients with BPH who presented to ER or surgery OPD with AUR from Nov 2016 to Jun 2018. Approval from Institutional Ethics committee was obtained. Patients presenting with AUR in whom BPH is the only cause, who were willing to participate and sign the informed consent, were included in our study. Patients having stricture urethra, proved cases of carcinoma of the prostate, history of pelvic irradiation, neurogenic bladder, and surgery for bladder neck were excluded.

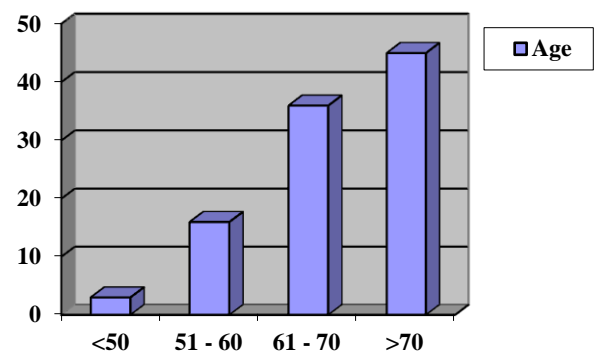


**Figure 1: The protocol followed in patients presenting with BPH presenting in AUR to PESIMSR.**

The demographics and significant relevant history was captured on a case record form. All were catheterized initially. The history of AUR was noted and thereafter the causes for retention were evaluated. For recurrent episodes of AUR, the precipitating cause for current episode was found out. The blood and urine investigations were done for the evaluation of the general condition of the patient and to rule out other disorders. Ultrasonography of abdomen including the urinary system was done specifically to know the size of the prostate. Depending on the factors involved, further management was decided and its outcome was evaluated in terms of resolution of symptoms. The management protocol followed is described in Figure 1. All the data was processed using SPSS software.

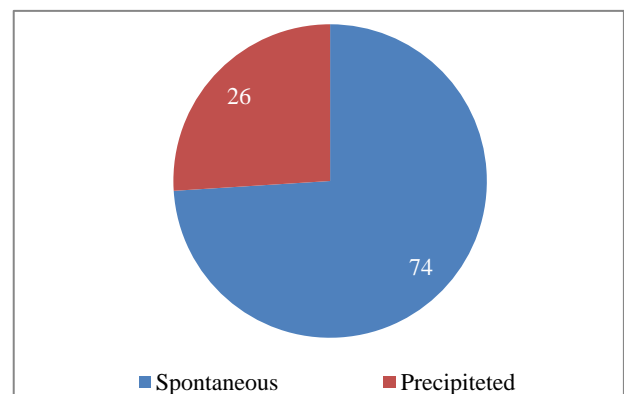
## RESULTS

There were 100 patients were studied. Mean age of presentation was  $68.33 \pm 9.1$  and ranged from 48 to 86 years (Figure 2).



**Figure 2: Age distribution.**

There were 74 patients had spontaneous AUR and rest had precipitating factors like bladder over distension, UTI, alcohol intake, medication with sympathomimetic and anticholinergic effect, surgical procedures with local and general anaesthesia (Figure 3).



**Figure 3: Type of acute urinary retention.**

Out of 100 patients, 96 underwent PUC insertion and 4 patients underwent SPC. Then patients with PUC whose prostate volume was <30 ml (n=8) were started on alpha blockers (Tab.Urimax) and those with a prostate volume >30 ml (n=88), were given a combination therapy of

alpha blockers with 5-ARI (Tab.Urimax D). All patients with SPC (n=4) were started on combination therapy (tab.Urimax-D) because the prostate volume was >30 ml (Table 1).

**Table 1: Catheterisation, prostate volume and medication started.**

Medication	PUC with prostate volume <30 ml	PUC with prostate volume >30 ml	SPC with prostate volume <30 ml	SPC with prostate volume >30 ml	Total
<b>Alpha blockers</b>	8	0	0	0	8
<b>Alpha blockers+5 Alpha reductase inhibitors</b>	0	88	0	4	92

**Table 2: TWOC D5 and D7.**

TWOC D5 (100)		TWOC D7 (43)	
Successful	Failed and recatheterised	Successful	Failed and recatheterised
57	43	15	28

**Table 3: TURP vs continued medical management.**

Status post TWOC	Number of patients
<b>Unsuccessful TWOC and failed medical management planned for TURP</b>	28
<b>Successful TWOC on medication but opted for surgery due to various reasons</b>	38
<b>Successful TWOC, continued on medication</b>	34

TWOC was done for 100 patients on day 5. Out of which TWOC was successful in 57 cases and failed in 43 cases (Table 2). (Catheter removed and trial void tried in all per urethral patients. In SPC group the catheter was clamped and trial void tried).

There were 57 patients in whom TWOC was successful on 5 the day, continued medical management. 19 out of 57 continued medication without recurrent AUR in the entire course. 38 Out of 57 patients in the course of management have opted for surgery.

Out of 43 cases failing TWOC on the 5th day, who were re-catheterized, TWOC was repeated on day 7. 15 cases were successful on TWOC and continued medical management without recurrent AUR, 28 cases which failed TWOC were re-catheterized and planned for elective surgery (Table 2).

Out of 34 patients ( 19 cases successful TWOC on 5 the day + 15 cases TWOC successful on 7 the day) who were continued on medical management, 8 patient was treated with Tab. Urimax 0.4mg (whose prostate size is less than 30ml) and 26 patients were treated with Tab. Urimax-D (whose prostate size is more than 30 ml). All these patients were followed up on once a month basis followed by once in 3 months period.

There were 66 out of 100 patients (28 failed TWOC and 38 with successful TWOC but other reasons as mentioned

above) underwent TURP in the course of management of AUR in BPH in the rural setup hospital (Table 3).

## DISCUSSION

BPH is characterized by the obstruction of urine outflow from the bladder caused by an enlarged prostate. This then leads to clinical manifestations of irritative and obstructive lower urinary tract symptoms with reduction in urinary flow rates. Data from clinical trials show that BPH is a progressive disease associated with an increase in prostate volume and the risk of serious complications such as AUR.<sup>11</sup> BPH progression is different between individuals. Although the etiology of AUR is not fully understood, it is conceivable that bladder outlet obstruction plays a key role in its occurrence.<sup>12</sup>

This study depicts the usefulness of the standard methods to be followed and needs for operative vs nonoperative management of patients presenting with BPH presenting in AUR.

Clinical BPH is a highly prevalent disease. In the present study majority of patients belong to elderly age group. To compare, by the age of 60 years, nearly 60% of the cohort of the Baltimore longitudinal study of aging had some degree of clinical BPH.<sup>12</sup> In the USA, results of the Olmstead county survey, in a sample of unselected Caucasian men aged 40-79 years, showed that moderate-to-severe symptoms can occur among 13% of men aged

40-49 years and among 28% of those older than 70 years.<sup>13</sup>

Patients had one or other symptoms suggestive of BPH in their history but failed to present early and landed in AUR. This shows the lack of awareness in rural areas and possible fear of financial burden on visiting a hospital. In Canada, 23% of the cohort studied presented with moderate-to-severe symptoms.<sup>14</sup> The findings for the prevalence of LUTS in Europe are similar to those in the USA. In Scotland and in the area of Maastricht, the Netherlands, the prevalence of symptoms increased from 14% of men in their 40s to 43% in their 60s.<sup>15,16</sup> Depending on the sample, the prevalence of moderate-to-severe symptoms varies from 14% in France to 30% in the Netherlands.<sup>17,18</sup> The proportion of men with moderate-to-severe symptoms doubles with each decade of life.<sup>19</sup>

We have seen that though TWOC is a painful and time-consuming process, it gives a sub group of patients the opportunity to avoid or postpone surgery. The assessment of prostate size guided the line of management.

In this study during the course of management those who successfully voided on TWOC were continued on medical management. Some of these patients (38) though didn't have further episodes of AUR opted for surgery (TURP) because of the following reasons.

- Inability to urinate with increasing pain
- Follow up visits to the physicians
- Discomfort and distress
- Low socioeconomic status
- Persistent bothersome symptoms
- Fear of Re-admission.

Request from patients side (38) played a major role compared to surgeons decision (28) in planning for surgery.

## CONCLUSION

This study evaluates the management of AUR in real-life practice in a rural setup hospital. It stresses the important risk factors and precipitation factors for the development of AUR in BPH patients. Regarding emergency management, it shows that urethral catheterization followed by TWOC has become standard practice. Prostate size assessed by USG was a significant factor in deciding medication to be started and predicting the outcome of a TWOC in AUR with BPH. Many aspects in the field of AUR in BPH patients need further evaluation and more studies are needed.

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