

# Acute Retention of Urine: A Case Series to Establish Cause and Various Treatment Modalities

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## Abstract

**Introduction:** Urinary retention is the inability to voluntarily urinate. Acute urinary retention (AUR) is the sudden and often painful inability to void despite having a full bladder. Chronic urinary retention is painless retention associated with an increased volume of residual urine. Patients with urinary retention can present with complete lack of voiding, incomplete bladder emptying, or overflow incontinence.

**Materials and Methods:** A prospective study of 18 months duration consists of patients. The patients were selected consecutively as and when they were presented during the study period considering the inclusion and exclusion criteria. Moreover, the outcome of results was assessed on cases of AUR in male patients aged >5 years in Era's Lucknow Medical College and Hospital.

**Results:** Mostly 69 (69%) patients in spontaneous retention were major AUR type. This may be due to mainly as the result of locoregional/general anesthesia and excessive alcohol intake of studied patients. Associated symptoms of studied patients in which 76 patients had fever followed by 70 patients had obstructive lower urinary tract symptoms (LUTS), 36 patients had hematuria, 30 patients had irritating LUTS, and 10 had discharge complaint, respectively. In the causes of AUR, 43 (43%) patients had found prostate enlargement.

**Conclusion:** Older age, severe LUTS, large drained volume at catheterization, and AUR of spontaneous origin favor Trial without catheter (TWOC) failure. As these variables also predict the risk of recurrent AUR/surgery after a successful TWOC, they could be used to identify the subgroup of patients that cannot be managed by medical therapy alone and should rapidly undergo surgery.

**Key words:** Acute retention, Treatment, Urine

## INTRODUCTION

Urinary retention is the inability to voluntarily urinate. Acute urinary retention (AUR) is the sudden and often painful inability to void despite having a full bladder. Chronic urinary retention is painless retention associated with an increased volume of residual urine. Patients with urinary retention can present with complete lack of voiding, incomplete bladder emptying, or overflow incontinence.<sup>1-3</sup>

In two large cohort studies of US men 40-83 years of age, the overall incidence was 4.5-6.8/1,000 men/year. The incidence dramatically increases with age so that a man in his 70s has a 10% chance and a man in his 80s has more than 30% chance of having an episode of AUR. The prevalence of lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH) increases with increasing age. Similar data from Indian population is not available.<sup>4,6</sup>

### Acute Retention

AUR is usually characterized by the sudden, painful inability to void; painless AUR is rare and is often associated with central nervous system pathology. AUR may be further subdivided into precipitated or spontaneous retention. Precipitated AUR may be triggered by such events as surgical procedures with general or locoregional anesthesia, excessive fluid intake, bladder overdistension, urinary tract

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infections, prostatic inflammation, excessive alcohol intake, or use of drugs with sympathomimetic or anticholinergic drugs. In most cases, no triggering event is identified and AUR is called spontaneous. Spontaneous AUR is most commonly associated with BPH and is regarded as a sign of progression. The difference between precipitated and spontaneous retention has clinical relevance because BPH surgery is less common in cases of precipitated AUR. AUR occurs in an obstructed or decompensated lower urinary tract. The exact cause of AUR is unclear; however, several mechanisms have been suggested.<sup>7-9</sup>

### Causes of Urinary Retention

Although classification systems vary, causes of urinary retention can be categorized as obstructive, infectious and inflammatory, pharmacologic, neurologic, or other. Other causes of lower urinary retention in both males and females include neoplasms, trauma, strictures, valves, and acute inflammation of the lower urinary tract.

### Management of AUR

Because of the painful nature of acute retention, and the complications that may result from any form of retention, and the impact on the patient's quality of life; the initial management is usually an emergency. Urethral catheterization is the quickest and most frequently employed method. Other methods include suprapubic cystostomy, urethral bouginage with or without catheterization, and rarely bladder aspiration. Most of these methods are associated with complications such as pain, urethral trauma, hemorrhage, pericatheter urethritis, septic shock, and catheter retention.

Our objectives were to assess the causes of urinary retention in male patients aged >5 years, methods of relief of individual causes, associated complications, and the problems encountered in the process of management, in our setting of limited resources in Era's medical college, Lucknow.

## MATERIALS AND METHODS

A prospective study of 18 months duration consists of patients. The patients were selected consecutively as and when they were presented during the study period considering the inclusion and exclusion criteria. Moreover, the outcome of results was assessed on cases of AUR in male patients aged >5 years in Era's Lucknow Medical College and Hospital.

### Selection of Patients

A predesigned pro forma was used to record the relevant information (patients data, clinical findings, investigation

reports) from the individual patient selected with inclusion and exclusion criteria.

The study group consists total of patients from Emergency and General surgery OPD of Era's Lucknow Medical College:

1. Group A: 5-25 years
2. Group B: 25-45 years
3. Group C: 46-65 years
4. Group D: >65 years.

All male patients admitted in emergency with complaint of AUR and age <5 years were included in our study.

Patients with age  $\leq 5$  years and post-operative cases due to effect of anesthesia were excluded from the study.

### Statistical Analysis

The results obtained in the study were presented in a tabulated manner as mean  $\pm$  standard deviation and were analyzed using Statistical Package for Social Sciences 20.0. Chi-square test was used for the analysis of the dichotomous data.  $P < 0.05$  was considered statistically significant.

## RESULTS

1. In the present study, the overall mean age was  $42.27 \pm 19.1$  (range 6-79). Age is an important risk factor for developing AUR.
2. Mostly 69 (69%) patients in spontaneous retention were major AUR type. This may be due to mainly as the result of locoregional/general anesthesia and excessive alcohol intake of studied patients.
3. 94% were come with pain as symptom.
4. Associated symptoms of studied patients in which 76 patients had fever followed by 70 patients had obstructive LUTS, 36 patients had hematuria, 30 patients had irritating LUTS, and 10 had discharge complaint, respectively.
5. In the causes of AUR, 43 (43%) patients had found prostate enlargement.
6. The difference between age categories and causes was statistically significant ( $P < 0.05$ ).
7. We have done immediate management of studied patients in which mostly 35 (35%) patients were urethral catheterization, 23 (23%) patients were suprapubic catheterization, 25 (25%) patients were alpha blocker + Trial without catheter (TWOC), 10 (10%) patients were TWOC, and 7 (7%) patients were circumcision, meatal dilatation.
8. The mean drained urine was  $710.25 \pm 150.7$  (range 210-950).

## DISCUSSION

AUR is usually characterized by the sudden, painful inability to void; painless AUR is rare and is often associated with central nervous system pathology. AUR may be further subdivided into precipitated or spontaneous retention.<sup>10</sup>

Because of the painful nature of acute retention and the complications that may result from any form of retention and the impact on the patient's quality of life; the initial management is usually an emergency. Urethral catheterization is the quickest and most frequently employed method. Other methods include suprapubic cystostomy, urethral bouginage with or without catheterization, and rarely bladder aspiration.<sup>11</sup>

Although classification systems vary, causes of urinary retention can be categorized as obstructive, infectious and inflammatory, pharmacologic, neurologic, or other. Other causes of lower urinary retention in both males and females include neoplasms, trauma, strictures, valves, and acute inflammation of the lower urinary tract.<sup>12</sup>

Final management of AUR where mostly 57 (57%) patients was prolonged catheter and elective surgery group, 13 (13%) patients were immediate surgery and 30 (30%) patients were an indwelling catheter.

## CONCLUSION

Older age, severe LUTS, large drained volume at catheterization, and AUR of spontaneous origin favor

TWOC failure. As these variables also predict the risk of recurrent AUR/surgery after a successful TWOC, they could be used to identify the subgroup of patients that cannot be managed by medical therapy alone and should rapidly undergo surgery.

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