

## **Management of Acute Urinary Retention Secondary to Benign Prostatic Hyperplasia**

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**Objective:** To analyze patients' status and current practice in the management of acute urinary retention (AUR) secondary to benign prostatic hyperplasia (BPH).

**Setting:** Salmaniya Medical Complex (SMC), Kingdom of Bahrain.

**Method:** Records of 478 patients with AUR were reviewed. The patients were managed by five consultant urologists during period of eight years (1995-2003). We have documented: in patients and methods.

**Results:** Urethral catheterization was the initial management of choice in 459 (96%) and suprapubic catheters in 19 (4%). Digital rectal examination (DRE) and abdominal ultrasonography were done in the majority, of patients. Prostate specific antigen (PSA) was done in 229 (48%); transrectal ultrasonography in 14 (3%) and intravenous pyelography (IVP) in 129 (27%). Fifty-three patients (11%) were managed successfully with trial without catheter (TWOC), 2-3 days after starting alpha blocker. Four hundred twenty-five patients (89%) underwent endoscopic examination, of these 10 patients had prostatic stenting only, one had open prostatectomy and the remainder had transurethral resection of the prostate (TURP).

**Conclusion:** This study revealed a reasonable uniformity in the management of AUR secondary to BPH in SMC without or with guidelines, which needs to depend on evidence-based studies.

*Bahrain Med Bull 2005;27(2):*

Acute urinary retention (AUR) represents the most common urological emergency. It is usually caused by benign prostatic hyperplasia (BPH), which is the most common benign tumor in men<sup>1</sup>. It is defined histologically as a chronic process characterized by stromal and epithelial cell hyperplasia and clinically characterized with lower urinary tract symptoms. It is also a major contributor to reduce quality of life and the

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consequent psychological sequelae of many aging men around the world, especially with observed increase in life expectancy. The natural history of benign prostatic hyperplasia could eventually cause a devastating outcome as far as death. Acute urinary retention is an undesirable event, which frequently occurs with the natural history of chronic disease. It is a painful, unpleasant experience requiring immediate medical and frequently surgical intervention.

There is a considerable change in our management of AUR ranging from prostatectomy as an absolute indication to medical treatment or watchful waiting<sup>2-4</sup>. There is also variation in the initial management of AUR when presented to Accident and Emergency department either by urethral catheterization or suprapubic catheterization (SPC) depending on the type of patients and urologists concerned.

The aim of this study is to analyze patients' status and current practice in the management of acute urinary retention (AUR) secondary to benign prostatic hyperplasia (BPH).

## **METHODS**

Records of 478 patients with AUR were reviewed those managed by five consultant urologists during period of eight years (1995-2003).

## **RESULTS**

Ninety-three percent were Bahrainis and 7% non-Bahrainis. The age ranged between 50-90 years with an average of 64 years. Urethral catheterization was the initial management of choice (96%); failing that, suprapubic catheters were inserted (4%). Digital rectal examination (DRE) and abdominal ultrasonography were done in the majority of patients. Prostate specific antigen (PSA) was done in 48%, transrectal ultrasonography in 3% and intravenous pyelography (IVP) in 27% especially in patients with history of hematuria. Fifty-three patients (11%) were managed successfully with trial without catheter (TWOC) 2-3 days after starting alpha blocker. Four hundred twenty five patients (89%) underwent endoscopic examination of these 10 patients had prostatic stenting only, one had open prostatectomy and the remainder had transurethral resection of the prostate (TURP).

## **DISCUSSION**

All urologists in SMC preferred urethral catheterization as the initial management, failing which a suprapubic catheter was inserted in 4% of patients. Apart from routine blood investigations, abdominal ultrasonography and digital rectal examination were done in the majority of patients and PSA assay was part of the routine assessment by some. A trial without catheter, irrespective of the residual urine volume at the time of the initial catheterization was successful in 11% of patients after starting alpha blocker for 2-3 days. All urologists followed patients who had successful TWOC, once failed was an indication for TURP.

AUR is characterized by sudden inability to void, which is usually but not always painful. In a community-based study from Minnesota, men aged 70-79 years had a 10% chance of developing AUR in the subsequent 5 years<sup>5</sup>. The exact cause of AUR

remains poorly understood. Some suggested causes like prostatic infection, bladder over-distension, excessive fluid intake, alcohol consumption, alpha adrenergic over activity, sexual activity and prostatic infarction<sup>6-9</sup>. Risk factors include age, mild to moderate symptoms of prostatism, maximum flow rate of <12ml/second, prostatic volume of >30ml and an increasing PSA level<sup>3,5,10</sup>. AUR can be classified into “precipitated” (eg., resulting from surgery other than prostate, anesthesia or medications); “spontaneous”, this has implication for managing patients as those with spontaneous AUR may be more likely to require surgical intervention than the precipitated group<sup>11</sup>. Since the advent of alpha-blockers, this concept has changed. AUR accounts for 25-30% of men undergoing prostatectomy<sup>2,12,13</sup>. Urethral catheterization represents the standard treatment for AUR for any cause as reflected in this study 459 (96%), suprapubic catheterization (SPC) is used if that fails 19 (4%). SPC has the advantage that the incidence of urinary tract infection is less<sup>14-17</sup>. Also patients requiring TWOC can have their catheter spigoted, and hence those failing to void do not need to be re-catheterized, thus reducing further trauma. Complications of SPC include bowel perforation and dislodgment, which although infrequent, must be considered<sup>15,17</sup>. Other factors in favor of SPC include comfort, easier management and cost effectiveness<sup>14,15</sup>. These factors have to be balanced against that most patients with AUR present to the accident and emergency department, where personnel may not be trained for SPC insertion. This may have to be addressed if SPC is to become the initial management in AUR.

After the initial management, patients are either admitted or sent home and reviewed in the outpatient clinic depending on the availability of hospital beds in SMC. In the present study 90-95% of patients admitted to the hospital. Evidence suggests that it is safe to send home patients with catheter after catheterization and have them returned for TURP<sup>13</sup>. Patients with precipitated AUR have higher chance of successful TWOC than those who had spontaneous AUR<sup>19</sup>. Factors associated with an unsuccessful TWOC are, age more than 75 years, residual drained urine more than 1 liter and detrusor contraction less than 25 cm H<sub>2</sub>O<sup>20</sup>.

With the advent of alpha-blocker more men are having a TWOC<sup>21-23</sup>. The success rate in this study was 29%, many other patients will require surgical intervention within 1-2 years after presentation<sup>4,23</sup>. Surgical intervention is considered to be the endpoint for AUR, TURP remains the reference standard for BPH and failed TWOC.

This study shows that there is a reasonable uniformity in the management of AUR secondary to BPH in SMC. Some aspects of patients’ management is evidence-based including starting alpha-blockers and the follow-up of patients after successful TWOC. The opinion for uniform guidelines for managing AUR secondary to BPH is divided among the treating urologists. We propose that patients with AUR be catheterized by suprapubic route, assessing the PSA should be avoided, alpha blocker should be started and TWOC undertaken at one week. Overall, management should be individualized to the patients.

## CONCLUSION

**This study identified a reasonable uniformity in the management of AUR secondary to BPH in SMC, but significant aspects of the current practice are not evidence-based.**

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