

*Al -Azhar University  
Faculty Of Medicine  
Urology Department*

# Early Versus late Catheter Removal in Patients with Urinary Retention Secondary to Benign Prostatic Hyperplasia under Tamsulosin Treatment

*Thesis*

Submitted for Partial Fulfillment of  
Master Degree in **Urology**

*By*

Salem Hassan Salem Mohamed  
M.B.B.Ch

*Supervised By*

**Prof. Dr.Mohamed Mabrouk Badr**

Professor of Urology– Al Azhar University

**Dr. Mohamed Fathy El Saeed El Ebiary**

Lecturer of Urology – Al Azhar University

*March 10 ,2017*

# INTRODUCTION

---

**B**enign prostatic hyperplasia (BPH) is defined as the proliferation of prostatic stromal cells, which results in an enlarged prostate gland. As a result the prostatic urethra is compressed, which restricts the flow of urine from the bladder. This interference with urine flow may cause uncomfortable symptoms such as frequency, urgency, nocturia, intermittency, decreased stream, and hesitancy. (*Kapoor , 2012*)

**B**enign prostatic hyperplasia, a histologic diagnosis, is a condition that occurs with aging; the prevalence increases from 25% among men 40 to 49 years of age to more than 80% among men 70 to 79 years of age. (*Sarma amd Wei , 2012* )

**M**any complications may be developed from BPH such as increased post-voiding residual, bladder diverticula or calculi, vesico-ureteral reflux, hydronephrosis, renal insufficiency, and urine retention. (*Oelke et al., 2012*)

**A**cute urine retention (AUR) is a common urological emergency that is characterized by sudden and painful inability to pass urine. The incidence of AUR in patients with BPH varies widely from 0.4% to 25 % (*Kara and Yazici, 2014*).

**M**anagement of AUR consists of immediate bladder decompression by catheterization usually followed by BPH-related surgery. The evidence that emergency surgery was associated with an increased mortality and a higher rate of postoperative complications, and the potential morbidity associated with prolonged catheterization have led to an increased use of a trial without catheter (TWOC) (*McNeill, 2006*).

**T**rial without catheter (TWOC) is preferable compared with leaving the catheter in place, and a 23-28% success rate has been reported. Nevertheless, most patients still require TURP, either as an emergency or elective surgery (*Taube and Gajraj, 1989*).

Alpha-1 ( $\alpha 1$ )-blockers decrease smooth muscle tone in the prostate, thereby rapidly improving urinary symptoms and flow. Currently available  $\alpha 1$ -blockers include the selective  $\alpha 1$ -blockers terazosin, doxazosin and alfuzosin and the highly selective  $\alpha 1A$ -blocker tamsulosin and silodosin. These agents have comparable efficacy, and the major differences between these agents are their tolerability profiles. (*Montorsi and Moncada , 2006*).

All these agents produce their effects on voiding within hours of administration, regardless of prostate size without altering serum prostate specific antigen (PSA) or volume (*Irani , 2006*)

The alpha(1A)- and alpha(1D)-adrenoceptor antagonist tamsulosin, given at a dosage of 0.4 mg once daily in a modified-release formulation, is effective and well tolerated in the treatment of LUTS associated with BPH. Although the drug has been directly compared to date with one other agent only, data show overall that tamsulosin clearly offers advantages over other alpha(1)-adrenoceptor antagonists in terms of the need for a single daily dose only, and its low potential for hypotensive effects or interference with concomitant antihypertensive therapy. Dosage titration at the start of treatment is not necessary. Tamsulosin has a rapid onset of action and is effective in patients with moderate or severe symptoms. The drug is therefore a valuable therapeutic option, with both demonstrated and potential advantages over older nonselective agents, in the management of patients with LUTS associated with BPH.( *Dunn CJ et al., 2002*)

By decreasing the resistance,  $\alpha 1$ -blockers can help relieve AUR and improve the chances of successful TWOC. (*McNeill , 2001*)

Longer catheter duration significantly increases the risk of complications such as urinary tract infections, urine leak and catheter obstruction and urethral stricture, all efforts should be

made to try to minimize the duration of catheterization and so reduce co-morbidity and healthcare costs (*Fitzpatrick et al., 2011*).

**H**owever, the optimum duration of therapy has not been fully assessed, and there is controversy regarding the length of time a catheter should remain in situ during the initial therapeutic phase. (*Kara and Yazici , 2014* )

## AIM OF WORK

---

The aim of this work is to compare between early (3days) and late(7days) removal of urinary catheter after acute urine retention in patients with Benign Prostatic Hyperplasia under Tamsulosin treatment.

## PATIENTS AND METHODS

---

It is a prospective randomized study that will be performed on 60 male patients with acute urinary retention(AUR) secondary to Benign Prostatic Hyperplasia(BPH) having their first attack.

All patients will be catheterized and the urine volume will be assessed and subjected to culture and sensitivity tests. After catheter insertion, the patients will receive prophylactic dose of levofloxacin 500 mg once and they will be divided randomly into two groups:

*Group I:* 30 patients will receive Tamsulosin hydrochloride 0.4 mg once daily and the catheter will be removed after 3 days.

*Group II:* 30 patients will receive Tamsulosin hydrochloride 0.4 mg once daily and the catheter will be removed after 7 days.

### Exclusion criteria:

- 1) Renal impairment.
- 2) Suspected urethral stricture.
- 3) Neurogenic bladder.
- 4) Cancer prostate.
- 5) Medically induced retention.
- 6) Previous use of alpha blockers.
- 7) History of drug hypersensitivity or allergy to Tamsulosin.
- 8) Chronic retention.

## Inclusion criteria:

Patients having first attack of acute urinary retention secondary to BPH.

## Patients Evaluation:

- 1) All patients will be subjected to complete medical history with stress on lower urinary tract symptoms (LUTS) before acute urine retention (AUR) using International Prostate Symptom Score (IPSS) .
- 2) Detailed past medical and operative history will be taken.
- 3) Complete physical examination will be carried out including Digital Rectal Examination (DRE).
- 4) All patients will be subjected to Pelvi-Abdominal Ultrasound and estimation of prostate size.
- 5) Follow up :
  - A. Complications related to catheter such as hematuria, obstruction, Urinary leakage and urinary tract infections will be recorded in the two groups.
  - B. After catheter removal, patients will be allowed to void and will be discharged home who will have a successful void more than 200 cc of urine. Patients who will fail to void will be re-catheterized and will be prepared for prostatectomy.
  - C. Two weeks after catheter removal :
    - All patients will be subjected to:
      - Pelvi-abdominal ultrasound with estimation of post voiding residual urine .
      - Uroflowmetry.
      - Urine analysis ,urine culture and sensitivity tests.
      - Prostatic specific antigen (PSA).
  - D. Six weeks after catheter removal:

- The previous investigation will be repeated.

### Statistical Methods:

The numerical data will be statistically presented in terms of range, mean, standard deviation, median and interquartile range (IQR). Categorical data will be summarized as percentages.

Comparisons between numerical variables of two groups will be done by Student's unpaired t-test for parametric data . (*Mahadik, et al.,2013*)

Comparing categorical variables will be done by Chi-square test or Fisher exact test for small sample size.

Correlations between various variables will be done using Pearson moment correlation equation for linear relation, P-value will be considered significant when P-values less than 0.05. (*Desgrandchamps F et al., 2006*)



## REFERENCES

---

- **Desgrandchamps F, De La Taille A, Doublet JD; RetenFrance Study Group:**The management of acute urinary retention in France: a cross-sectional survey in 2618 men with benign prostatic hyperplasia. *BJU Int.* 2006 Apr;97(4):727-33.
- **Dunn CJ, Matheson A, Faulds DM.** Tamsulosin: a review of its pharmacology and therapeutic efficacy in the management of lower urinary tract symptoms. *Drugs Aging.* 2002;19(2):135–61.
- **Fitzpatrick JM, Desgrandchamps F, Adjali K, Guerra LG, Hong SJ, El Khalid S and Ratana-Olarn K :** Management of acute urinary retention: a worldwide survey of 6074 men with benign prostatic hyperplasia. *BJUI* 2011;109:88-95.
- **Irani J:** are all alpha blockers created the same? *Eur Urol* 2006; 49:420-2 .
- **Kapoor A:** Benign Prostatic Hyperplasia management in primary care setting. *Can J Urol* 2012;19:10-17.
- **Kara O and Yazici M:** Is the Double Dose Alpha-Blocker Treatment Superior Than the Single Dose in the Management Of Patients Suffering From Acute Urinary Retention Caused By Benign Prostatic Hyperplasia?. *Urol J* 2014;11:1673-77.
- **McNeill SA:** Spontaneous versus precipitated AUR: the same?. *World J Urol* 2006; 24 : 354 – 9.
- **McNeill SA:** Does acute urinary retention respond to alpha-blockers alone? *Eur Urol* 2001;39:7-12.
- **Montorsi F and Moncada I:** Safety and tolerability of treatment for BPH. *Eur Urol Suppl* 2006;5:1004-12.
- **Oelke M, Hermanns RK, Thiruchelvam N and Heesakkers J :**Can we identify men who will have complications from benign prostatic obstruction. *Neurourol Urodynam* 2012;31:322-26.
- **Punit Mahadik, Surya PV, Chandra-MG, V. Vijaya KR and Venkat KS:** Factors Affecting Trial Without Catheter for First Spontaneous AUR. *Int Neurourol J* 2013;17:121-126
- **Sarma AV and Wei JT:** Benign Prostatic Hyperplasia and Lower Urinary Tract Symptoms. *N Engl J Med* 2012;367:248-57.
- **Taube M and Gajraj H:** Trial without catheter following acute retention of urine. *Br J Urol* 1989;63:180-25.