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A STUDY OF PREDICTORS OF SUCCESSFUL TRIAL WITHOUT CATHETER IN ACUTE URINARY RETENTION IN MALES:

Urology

Dr Rajeev T P Professor and HOD, Department of Urology,K S Hegde Medical Academy, Deralakatte, Mangalore

Dr Suraj hegde P* Assistant Professor, Department of Urology,K S Hegde Medical Academy, Deralakatte, Mangalore.*Correspondence Author

ABSTRACT

Urinary retention is complex and may present in various ways as a result of a myriad of pathologic processes. Acute retention of urine is defined as a painful, palpable or percussable bladder, when the patient is unable to pass any urine. AUR may be further subdivided into precipitated or spontaneous retention. Aim of treatment is to restore the ability to void spontaneously as soon as possible, to avoid catheter-related complications and improve patient quality of life. Trial without Catheter (TWOC) is now considered for most patients. It involves catheter removal allowing the patient to successfully void which enables patients to return home without the potential morbidities associated with an in situ catheter. TWOC also allows surgery to be delayed to an elective setting or may prevent the need for surgery. This study puts in a sincere effort to identify predictors of successful trial without catheter after an episode of acute urinary retention

KEYWORDS

Successful, Trial, Cathter, Acute Urinary Retention.

Introduction:

Urinary retention is complex and may present in various ways as a result of a myriad of pathologic processes. Acute retention of urine is defined as a painful, palpable or percussable bladder, when the patient is unable to pass any urine. AUR may be further subdivided into precipitated or spontaneous retention.

Precipitated AUR may occur due to surgical procedures with general or loco-regional anaesthesia. The most common being the post-operative urinary retention (POUR) and is potentially serious morbidity but is poorly understood. POUR has generally been defined as the inability to pass any urine in the presence of a palpable or percussible bladder after surgery but the definition varies widely [1]. Its incidence generally ranges from 4 to 25% [2]. The widely varying reported incidence of POUR reflects differences in patient characteristics, the lack of uniform defining criteria, and the multifactorial etiology of POUR, including age, gender, inadequate perioperative fluids, type of anesthesia and type of surgery [1]. To date, several contributing mechanisms to POUR have been suggested [2]. These include traumatic instrumentation, bladder overdistention, diminished awareness of bladder sensation, decreased bladder contractility, increased outlet resistance, decreased micturition reflex activity, nociceptive inhibitory reflex and preexistent outlet pathology [2]. Several previous studies have reported that factors such as comorbidities, type of surgery, duration of surgery, type of anesthesia or analgesia, amount of intravenous fluid during surgery, and drugs used during the perioperative period, especially anticholinergics or sedatives, can influence the development of POUR [1,3-7]. However, most of these studies on the factors influencing POUR showed contradictory results. The other causative factors being Excessive fluid intake, Bladder over distension, Urinary tract infections, Prostatic inflammation, Excessive alcohol intake and Use of drugs with sympathomimetic or anticholinergic drugs.

In Spontaneous AUR no triggering event is identified and AUR is called spontaneous. It is most commonly associated with benign prostatic hyperplasia and is regarded as a sign of progression.

Pathogenesis of the condition includes Prostatic infarction, Prostatic inflammation, α- Adrenergic activity, Neurotransmitter modulation and thus Decrease in the stromal–epithelial ratio. Aim of treatment is to restore the ability to void spontaneously as soon as possible, to avoid catheter-related complications and improve patient quality of life Trial Without Catheter (TWOC) is now considered for most patients. It involves catheter removal allowing the patient to successfully void which enables patients to return home without the potential morbidities associated with an in situ catheter. TWOC also allows surgery to be delayed to an elective setting or may prevent the need for surgery. This study puts in a sincere effort to identify predictors of successful trial without catheter after an episode of acute urinary retention

OBJECTIVES

To identify predictors of successful trial without catheter after an episode of acute urinary retention

Materials and Methods:

Prospective study June 2016 – June 2017
Department of Urology,
88 patients who presented to our institution with acute retention were included

The following were checked and noted

- Urine volume on catheterization
- Urinary tract infection
- Digital rectal examination to assess prostate
- Prostate size
- CRP levels
- Serum PSA

Inclusion Criteria:

- The patients were males
- The age of the patients were between 30-80 years.

Exclusion criteria

- Known prostate cancer
- Clot retention
- History of traumatic catheterization
- Catheter related problems
- Prior lower urinary tract surgery
- Patients subsequently underwent trial without catheter during the subsequent visit in OPD
- Where clinically indicated, prostate biopsies were obtained
- Data analysed using SPSS 18.0

Results

Table 1: TWOC

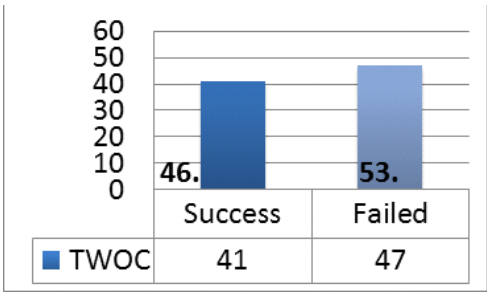


Table 2: Mean Residual Volume

Mean Residual urinary volume on catheterisation was 660 ml.

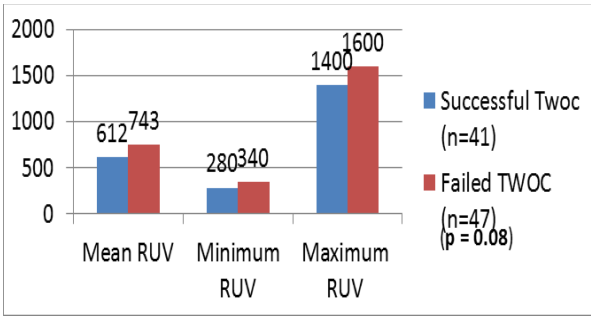


Table 3: Age Distribution

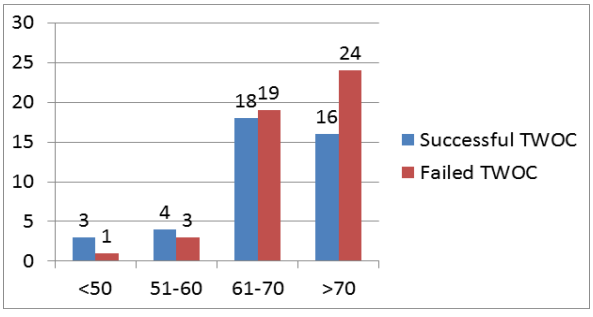


Table 4: Serum CRP

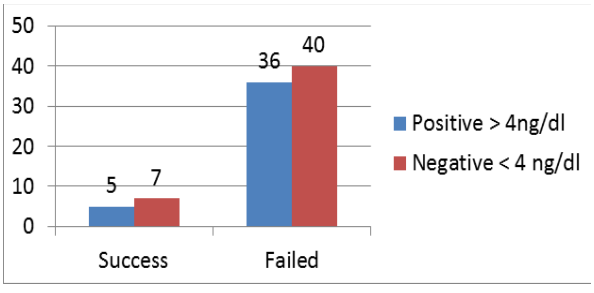


Table 5: Prostate Volume

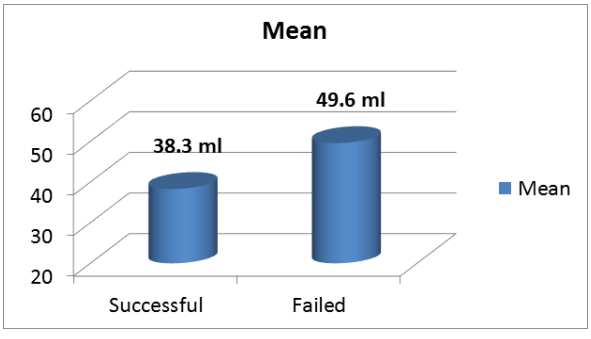


Table 6:Serum PSA

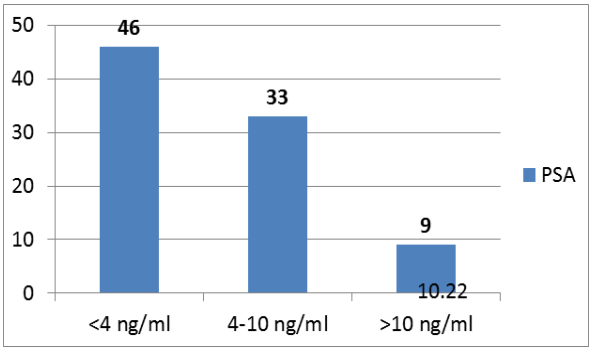
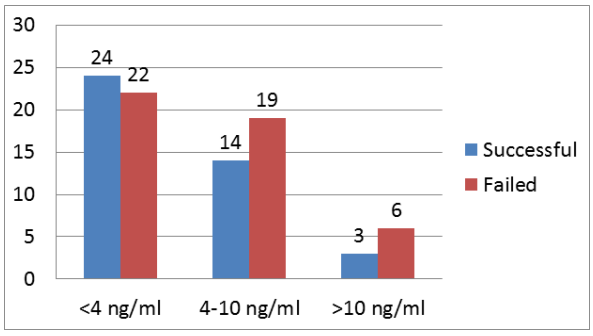


Table 7: PSA and TWOC



- Five patients were newly diagnosed with prostate cancer in our study. All five patients had failed TWOC.
- Serum PSA levels were positively correlated with new diagnosis of prostate cancer (p = 0.013)

Predictors were

- Smaller sized prostate (p = 0.004)
- Newly diagnosed prostate cancer (p=0.04)
- Benign feeling prostates (p= 0.06)
- Lower residual volumes (p = 0.08)
- Lower initial PSA levels (p= 0.13)

Discussion:

Although it is well known clinically that Urinary Retention is a frequent and potentially serious condition that can prolong hospital stay, limited data is available regarding the predictors of outcome of TWOC. The present study extends the current state of knowledge in the study of Urinary retention by further exploring the outcome of TWOC and factors influencing success in patients with Urinary retention. The contractility of the detrusor decreases with advancing age [2]. Accordingly, in light of previous studies, it was generally assumed that Urinary retention increases with age, with the risk increasing in patients over 50 years of age [3,5-7]. The duration of catheterization before TWOC for urinary retention is still an area of debate. A previous study by Djavan et al. [8] reported that a successful TWOC was achieved in 44% of patients with in-and-out catheterization, in 51% of those with 2 days of indwelling catheterization and in 62% of those with 7 days of indwelling catheterization, which suggests that prolonged catheterization may usually be associated with a greater success rate of TWOC. Recently, Emberton and Fitzpatrick [9] suggested that the benefits associated with a duration of catheterization of more than 3 days appear to be marginal in terms of TWOC success (59.6%) compared with a shorter duration of catheterization (56.4%). Previous studies have shown that a drained volume at catheterization of ≥1 L could be a risk factor for unsuccessful TWOC, which suggests a correlation between retention volume at POUR and outcome of TWOC [9]. Even a single episode of bladder over-distention may lead to the deposition of collagen between the muscle fibers of the detrusor, decreasing the contractility and leading to impairment of bladder emptying . Furthermore, bladder ischemia may contribute to the persistent impairment of contractility after bladder over-distension. Thus, avoidance of excessive bladder distention by indwelling catheterization might be important for recovery of micturition from Urinary retention in patients with a retention volume over 600 mL9. This can be further supported by the experimental observation of a reduced bladder response to sacral neural stimulation during over-distention and after over-distention.

Limitations

- Limited number of subjects
- Though all patients with newly diagnosed prostate cancer showed failed TWOC, the number is too small to generalise this finding

Conclusion

- Successful TWOC is more likely in smaller sized and benign feeling prostates
- Neither PSA nor CRP levels help to predict TWOC outcome
- Residual urinary volumes on catheterisation may be of no or little value in predicting TWOC outcome

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