

DESCRIPTION OF URINARY RETENTION IN WOMEN A Retrospective Study in Dr Soetomo Hospital Surabaya

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ABSTRACT

Using medical record patient we evaluated the profile of urinary retention in women who were hospitalized in Dr. Soetomo General Hospital from January 2001 to December 2002. Previously, urinary retention in women had often been considered to be due to acute cystitis or triggered by an event, such as surgery or childbirth. From medical record, urinary retention in women during the period between January 2001 and December 2002 was observed. We described the sex ratio, age distribution, events preceding the onset of urinary retention, the cause of urinary retention, laboratory and radiological examination, hospital stay and management of urinary retention. Mean patient's age at the onset of retention was 27.27 years (range 1 to 79). Of the women, 66 % reported an event that apparently precipitated urinary retention, most commonly a gynecologic surgical procedure using general anesthesia. Most of the urinary retention was caused by cystitis (34%). Sex ratio of urinary retention in women and men was 12% : 88%. Length of stay was 1-9 days. Most of them were managed by dauer catheter (DC) for 7 days and antibiotics. In conclusion, we found 12% urinary retention women from January 2001 to December 2002. Most of the urinary retention is caused by cystitis (34%).

Keywords: urinary retention, women, cystitis.

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INTRODUCTION

Urinary retention is a most-commonly found urologic emergency that may occur anytime in any places. If it is not appropriately managed, it may lead to the occurrence of complications that will exacerbate the morbidity of the patient. Basically, particular instruments and skill are not required to detect and treat patients with urine retention, whatever the cause of the abnormality. Urine retention is a condition in which the patient cannot flow the urine collected in the bladder, so that the maximum capacity of the bladder is exceeded (Gardjito 1994). A study conducted by six hospitals in Copenhagen to 700,000 populations for more than 9 months found that the incidence of acute urine retention in women was 7 per 100,000 annually with ratio between sex (female : male) was 1 : 13 (Choong & Emberton 2000), while in Indonesia, such ratio has never been reported.

Bladder has double function. First, to collect urine as reservoir. In this phase, the detrusor muscle of the bladder is relaxed, while the sphincter is tense (closed). At the time when urine volume reaches the physiological capacity (in adults ranging between 250-400 ml), stimulation for micturition occurs. However,

micturition process can be delayed as it is restrained by the subject. When urine volume reaches maximum capacity (in adults ranging between 500-600 ml), stimulation for micturition becomes more intense, resulting in the sense of discomfort, although micturition process can still be delayed temporarily by consciously stretching external urethral sphincter (Gardjito 1994). Second, the process of bladder emptying is called micturition process. This event requires harmonious coordination between contracting detrusor and relaxed sphincter, so that urine can flow out until the bladder becomes empty. In those two phases, the bladder prevents urine to flow back (reflux) into the ureter (Gardjito 1994; Nicholas 1991). Micturition process will run smoothly if detrusor and sphincter have normal function (harmoniously coordinated) and there is no blocking in the urethra.

The cause of urine retention is detrusor impairment, injury or abnormalities in spinal cord, damaged nerve fiber (diabetes mellitus), and detrusor with prolonged excessive stretching/dilatation. Other causes are impaired coordination (dyssynergia) between detrusor-sphincter, injury/abnormalities of spinal cord in cauda equina area, and blockage of urine outflow, such as urethral stricture, urethral stone, urethral damage

(trauma), blood clot in bladder lumen. In most of female patients, underactive detrusor function is the primary cause of acute urine retention, which is at times triggered by certain condition, such as acute cystitis (Choong 2000; Gardjito 1994; Mosliha et al. 1991; Swim et al. 2002).

Due to urine retention, the bladder distends more than its maximum capacity, so that its intraluminal pressure and the stretching of its wall increase. If such condition is left untreated, increased intraluminal pressure will block urine flow from kidney and ureter, resulting in hydronephrosis and hydronephrosis, which gradually leads to renal failure. If pressure within the bladder increases higher than blockage in urethral area, urine will be expelled repeatedly in small amount unrestrainedly by the patient, while the bladder remains full of urine. Such condition is called paradoxical incontinence or overflow incontinence (Choong 2000; Viktor 1999). The strain of bladder wall keeps increasing to reach the tolerable limit, and after this limit is surpassed, bladder muscles will dilate, with the result that the bladder will surpass its maximum capacity. Consequently, bladder muscles strength of contraction reduces. Urine retention is a predilection of urethral infection, and if it occurs it will result in serious emergency, such as pyelonephritis and urosepsis, particularly in elderly patients (Gardjito 1994; Penny et al. 2001).

Clinical picture of urine retention is the sense of discomfort, severe pain from the lower part of the abdomen until genital area, palpable fluid accumulation in the lower part of the abdomen, inability to void, and sometimes urine is expelled in drips, often unconsciously and unrestrainedly (paradoxical incontinence). Diagnosis certainty is based on abdominal plain x-ray, in which full bladder is observable. Ultrasonography is used to observe bladder volume, the presence of fluid in the bladder. To find the cause of urine retention, supportive examinations are needed, such as urinalysis, urine culture and sensitivity, renal function, blood glucose, uro-radiology examination, urodynamics, pelvic examination and neurological assessment (Nicholas et al. 1991; Swinn et al. 2002).

When the diagnosis of urine retention has been well established, the treatment is decided based on problems related with the primary cause of the urine retention (Kumar et al. 2002; Masli et al. 1991; Penny et al. 2001). The choices are catheterization, suprapubic cystostomy (trocar or open), and suprapubic puncture. Advanced treatment is also given according to the cause, such as regular catheterization (clean intermittent self-catheterization/CISC) and pelvic floor exercise (PFE). If infection is the cause (cystitis), antibiotics

should be given in line with the result of culture examination and sensitivity test. Culture should be proved to be sterile after the evaluation of examination. If the cause is diabetes mellitus, blood glucose should be regulated to normal. The objective of this study was to find the description of female urine retention patients in Dr Soetomo Hospital, Surabaya, comprised the proportion of female and male urine retention patients, age distribution, triggering factors of urine retention, the cause of urine retention, supportive treatment, length of treatment, and management.

MATERIALS AND METHODS

This study was conducted to 66 female patients with urine retention hospitalized in Dr Soetomo Hospital, Surabaya, from January 2001 to December 2002. This was an analytic descriptive retrospective study. Data were obtained from medical records of the patients and processed and analyzed descriptively.

RESULTS

From January 2001 to December 2002 there were 552 urine retention patients hospitalized in Dr Soetomo Hospital, Surabaya. From these, 66 were female.

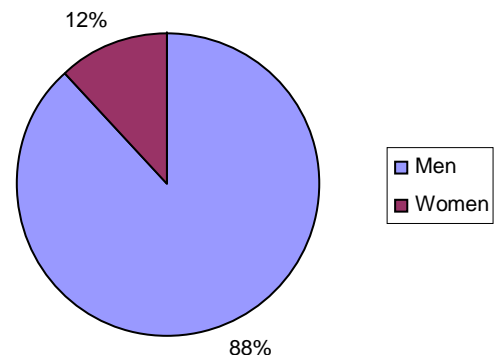


Figure 1. Sex ratio of urinary retention patients.

Figure 1 shows that female patients with urine retention from January 2001 to December 2002 in Dr Soetomo Hospital was 12% (66 from 552 patients). From medical records obtained between January 2001 and December 2002, it was found that there were 66 patients, aged varied from 1 to 79 years. Most of the patients aged 20-24 years, followed with those of 25-29 years and 30-34 years. This confirms the study of Swinn et al. (2002) to 91 female urine retention patients, in which mostly aged 20-24 years, followed with those of 35-39, 30-34, and 25-29 years.

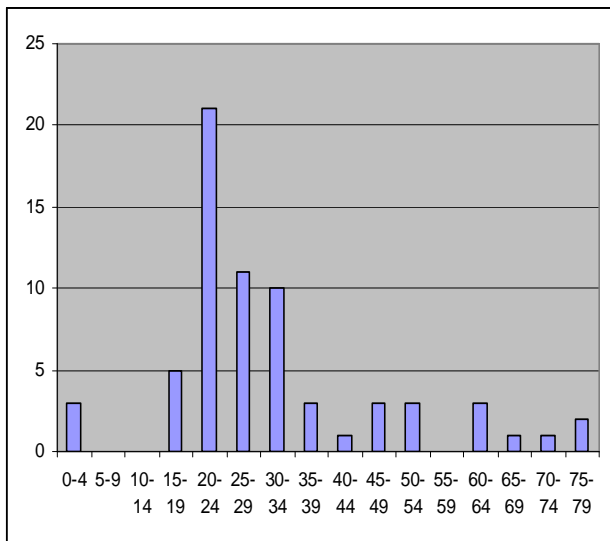


Figure 2. Age distribution of women with urine retention.

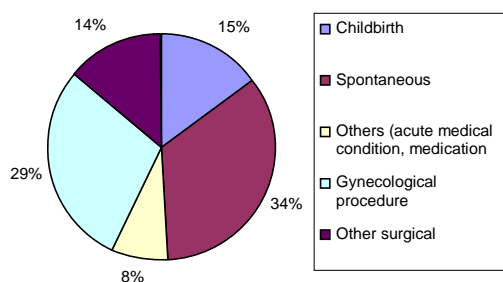


Figure 3. Events preceding the onset of urinary retention in women.

Figure 3 shows that in 66 patients with urine retention, 66% was triggered by various events, such as operation and delivery. Two-third of the triggering factors are the result of operative procedure. Study conducted by Swinn et al. (2002) to 91 female urine retention patients revealed that 65% of the cases were preceded by triggering factors, such as delivery and operation, and two-third of those factors were operating procedure (mostly gynecologic procedure). Velanovich (1992) found that the incidence of post-operative urine retention was 18.8%-57%.

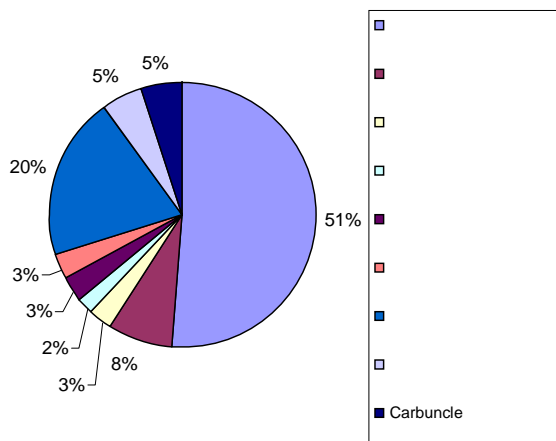


Figure 4. Causes of urinary retention.

Figure 4 reveals that the cause of urine retention in female patients treated in Dr Soetomo Hospital was mostly cystitis (51%). Saultz et al. (1991) had studied the incidence of post-partum urine retention, and found the range between 1.7% to 17.9%. Related factors were first vaginal delivery, epidural anesthesia and caesarean section.

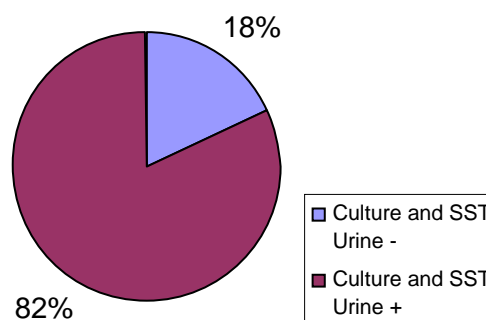


Figure 5. Urine examination in female cystitis.

Figure 5 shows that in 34 cystitic patients, not all had culture examination and sensitivity test. Only 82% of them had these procedures. It was also possible that the examination had been done, but the results were not obtained since it took 7 days to have the results, high cost of examination, and ignorance or unawareness of the examiners themselves.

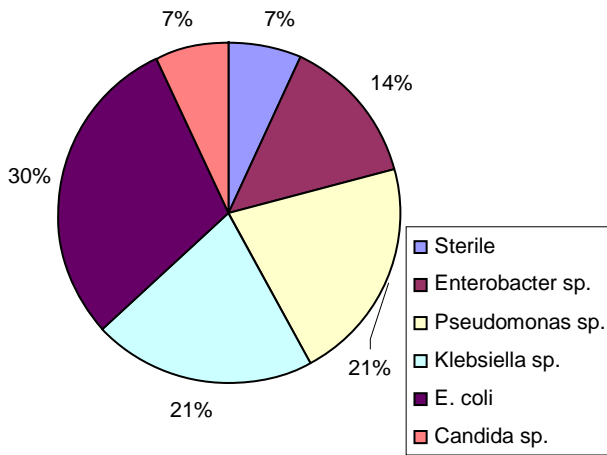


Figure 6. Urine culture and sensitivity.

Results of culture and sensitivity test in Figure 6 demonstrates that most of the causing germs were *Escherichia coli* (30%), followed with *Klebsiella sp.* (21%) and *Pseudomonas sp.* (21%). Several literatures mention that *E. coli* is the most predominant cause of cystitis in women (85%).

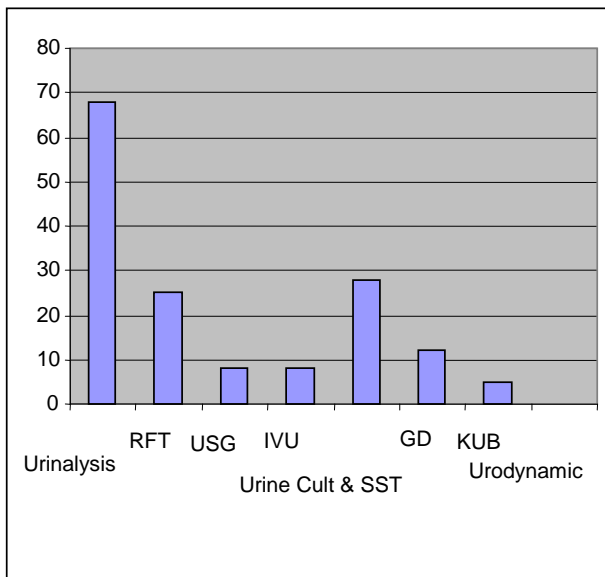


Figure 7. Laboratory examination in urinary retention.

Figure 7 shows that all urinary retention patients carried out urinalysis examination, and none of them had urodynamic examination.

The management of patients with urine retention is mostly the placement of dauer catheter form 7 days to provide recovery for detrusor muscle and the provision of antibiotics until the culture is proved to be sterile.

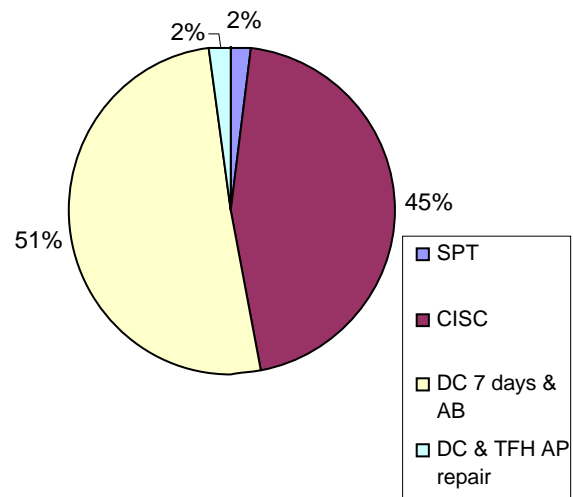


Figure 8. Management of urinary retention.

This is because most of urine retention cases in women were caused by cystitis. One patient with neurogenic bladder underwent suprapubic cystostomy (SPT), and one other patient with uterine prolapse underwent transvaginal hysterectomi (TVH) repair. From several studies carried out on the risk of urinary tract infection in the placement of urethral catheter in women, it was found that the risk of infection in hospitalized patients were higher than that in outpatients with the ratio of 0.5%-1% : 10%-29%.

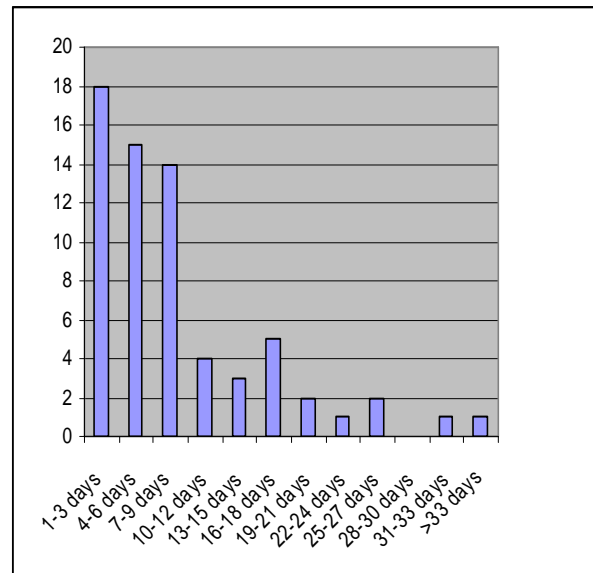


Figure 9. Length of stay of urinary retention patients.

Figure 9 shows the length of stay of the urinary retention patients, which was varied from 1 to 33 days, mostly was 1-3 days.

CONCLUSION

In conclusion, there are 12% of female urine retention patients (66 from 552 patients). Most of these patients aged 20-24 years, and the cause of female urine retention is mostly cystitis (51%), length of stay ranged from 1 to 9 days (mostly 1-3 days). Further studies are needed involving larger samples and culture examination as well as urine sensitivity test should be undertaken in all patients with cystitis-caused urine retention.

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