

NUMBER OF UROGENITAL DISORDERS VISITS IN THE EMERGENCY ROOM OF dr. H. ANDI ABDURRAHMAN NOOR GENERAL HOSPITAL

Bayu Saputera¹, Heru Prasetya²

¹dr. H. Andi Abdurrahman Noor General Hospital, Tanah Bumbu, South Borneo, Indonesia

²Department of Surgery, Urology Division, Medical Faculty of Lambung Mangkurat
University, Banjarmasin, South Borneo, Indonesia

Email Correspondence: blacklecture@yahoo.com

Abstract: *In urology, urogenital disorders include all male and female urinary tract and male genital organ abnormalities. These disorders can be an infections, blockages due to foreign bodies, dysfunction due to pathological or degenerative processes, trauma, neoplasms, or congenital disorders. This research was a retrospective descriptive study to determine the number of patient visits with urogenital disorders. The place of this research was ER of DHAAN General Hospital, Tanah Bumbu District, South Kalimantan Province, Indonesia. The research data was taken from data on new patient visits to the ER in 2017. The number of patient visits with urinary tract disorders was 475 cases: male 57.1% and female 42.9%. The most cases based on the type of disorder was UTI (38.9%), second was urolithiasis (25.3%), and third was CKD (23.4%). While the number of patient visits with male genital disorders was 79 cases. Most cases was BPE (86.1%). Knowing the number of patient visits with urogenital disorders will make the clinicians be directed in preparing themselves for urogenital emergencies in their respective health services.*

Keywords: DHAAN, number of visits, urogenital disorders, urology.

INTRODUCTION

The genitourinary system or urogenital system is the organ system of the genital organs and the urinary tract system. These are grouped together because of their proximity to each other, their common embryological origin and the use of common pathways, like the male urethra. Also, because of their proximity, the systems are sometimes imaged together. Urology deals with diseases and disorders of both male and female urinary tract (kidney with pelvicaliceal system, ureter, bladder, urethra), the male genital organs (testis, epididymis, vas deferens, vesicles seminal, prostate gland, penis), and the adrenal gland. The abnormalities of this system is call “urogenital disorder”.¹ These abnormalities can be due to an infections, blockages by foreign bodies, dysfunction due to pathological or degenerative processes, trauma, neoplasms, or congenital disorders.² The large variety of urogenital system disorders is not followed by rapid epidemiological studies of this disease. Therefore this study was conducted and hopefully this research can become the basis for the others.

RESEARCH METHODS

This research was a retrospective descriptive study to determine the number of patient visits with urogenital disorders in January to December 2017. The place of this research was emergency room (ER) of dr. H. Andi Abdurrahman Noor (DHAAN)

General Hospital, the largest hospital in Tanah Bumbu District, South Kalimantan Province, Indonesia. The research data was taken from secondary data on daily new patient visits to the emergency room in a year and and a selection was made to determine patients who diagnosed with a urogenital disorders.

In this study, the sampling method was total sampling, where all patients diagnosed with urogenital disorders were included in the study to describe the entire population. Patients must meet the inclusion criteria, the ER visit was the first visit. Whereas if the visit was a repeat visit, the patient was excluded from the sample.

Data was analyzed using the Statistical Package for the Social Sciences (SPSS) program. Data is displayed in beam diagrams, pie charts, and tables according to their ease, so that they could be better understood.

RESULTS AND DISCUSSION

Based on the 2017 report, the number of patient visits at the ER in the hospital was 8,835 patients. From the total, 554 (6.3%) were patients who came and diagnosed with urogenital disorders. The highest number of patient visits was in July 2017 with 80 patients (14.4%). An average visit rate was 46.2 patients per month. The distribution number of patient visits with urogenital disorders can be seen in Figure 1.

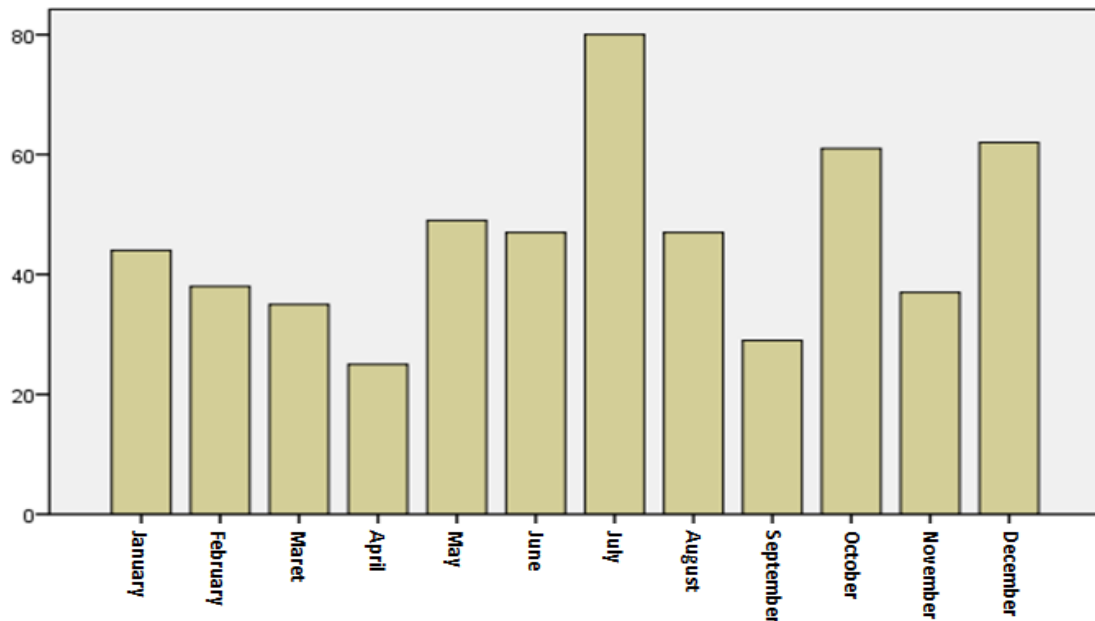


Figure 1. The distribution number of patient visits with urogenital disorders

From age group, the majority of patients with urogenital disorders were in the older adult group (41-60 years) with 215 patient visits in one year. While the young adult group (18-40 years) with a number of visits was 183 patients, children (6-17 years) with 24 patients, and toddlers

(0-5 years) with 6 patients. The group of elderly (61-100) also had a large number of visits, with 126 patients. There was no visit of patients over 100 years old (very old group) in this study.^{1,3} More complete results can be seen in Figure 2.

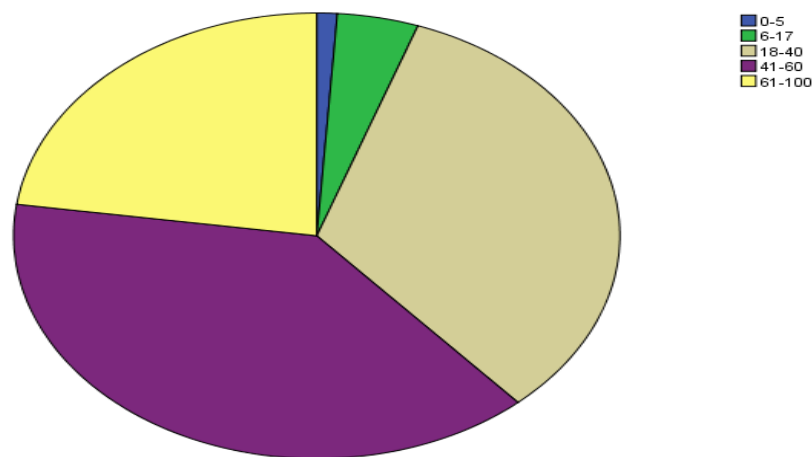


Figure 2. The distribution number of patient visits with urogenital disorders base on age group

In one year, the number of urinary tract disorders visits was 475 patients with an average visit rate of 39.6 patients per month. The number of male patient visits was greater (57.1%) compared to female

patients. The average number of male visits with urinary tract disorders is 25.6 patients per month, while female are 17.0 patients per month. Comparison number of visits each month can be seen in **Figure 3**.

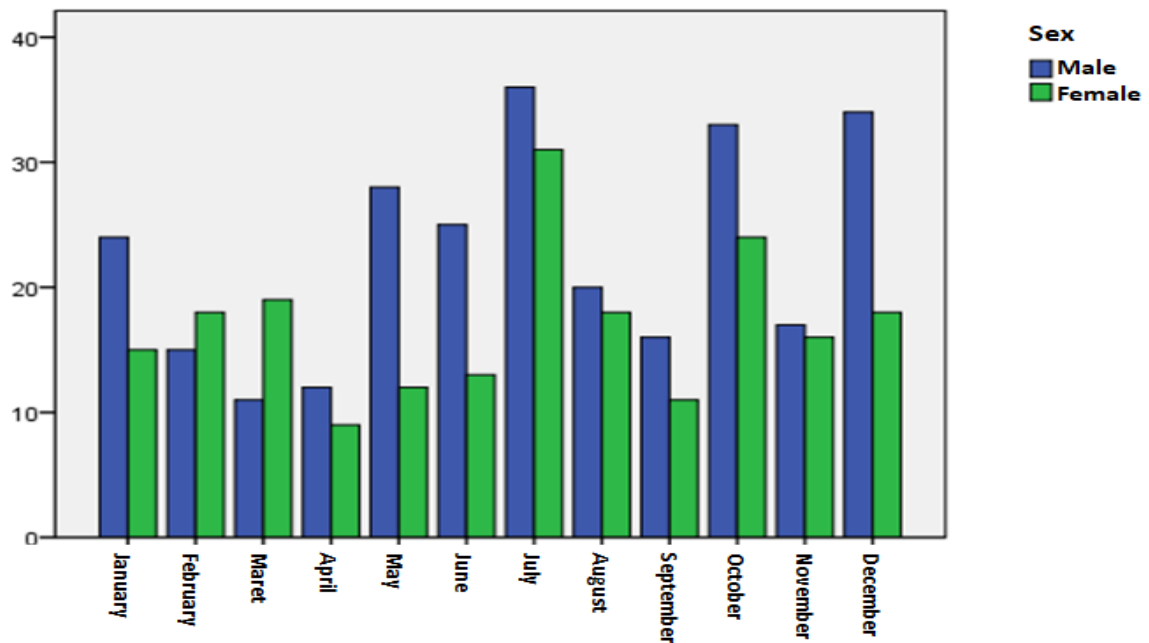


Figure 3. The distribution number of patient visits with urinary tract disorders
distribution number of patient visits per month can be seen in Figure 4.

The other 79 patients were male patients with genital organ disorders, with an average visit rate of 6.6 per month. The

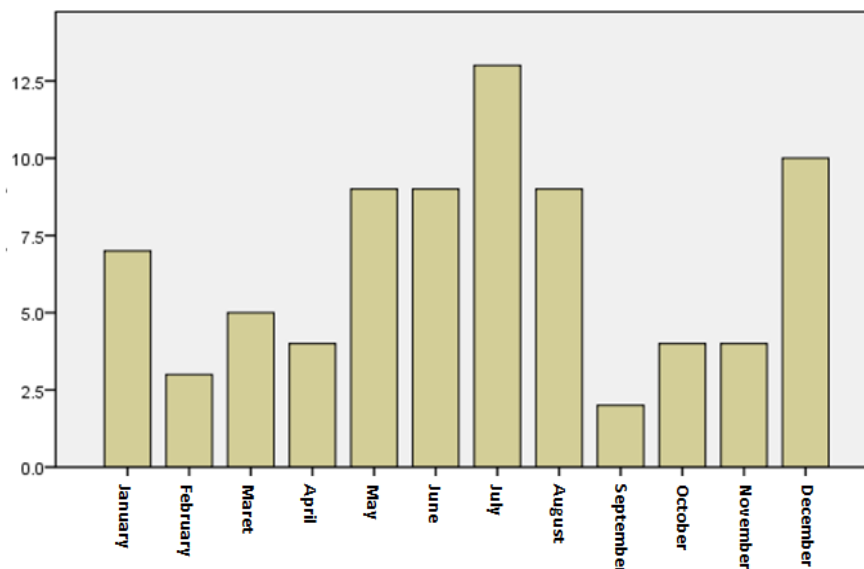


Figure 4. The distribution number of male patient visits with genital organ disorders
divided based on the following organs (see Table 1).

The description number of patient visits with urinary tract disorders can be

Table 1. The distribution number of patient visits with urinary tract disorders based on the following organs

Organ	Disorders	Age group	Sex		Total
			Male	Female	
Kidney	Nephrolithiasis	18-40	3	2	5
		41-60	2	1	3
		61-100	3	0	3
		<i>Total</i>	<i>8</i>	<i>3</i>	<i>11</i>
	Acute Kidney Injury (AKI)	18-40	3	2	5
		41-60	9	2	11
		61-100	2	4	6
		<i>Total</i>	<i>14</i>	<i>8</i>	<i>22</i>
	Chronic Kidney Disease (CKD)	6-17	0	1	1
		18-40	9	12	21
		41-60	28	26	54
		61-100	19	16	35
		<i>Total</i>	<i>56</i>	<i>55</i>	<i>111</i>
Ureter	Ureterolithiasis	41-60	1	0	1
		<i>Total</i>	<i>1</i>	<i>0</i>	<i>1</i>
Bladder	Vesikulolithiasis	18-40	1	1	2
		41-60	2	0	2
		61-100	1	0	1
		<i>Total</i>	<i>4</i>	<i>1</i>	<i>5</i>
	Bladder Tumor	61-100	2	0	2
		<i>Total</i>	<i>2</i>	<i>0</i>	<i>2</i>
Urethra	Urethral rupture	6-17	2	0	2
		18-40	2	0	2
		41-60	2	0	2
		61-100	1	0	1
		<i>Total</i>	<i>7</i>	<i>0</i>	<i>7</i>
Unspecified organ	Urinary tract infection (UTI)	0-5	2	2	4
		6-17	7	9	16
		18-40	36	56	92
		41-60	31	29	60
		61-100	3	10	13
		<i>Total</i>	<i>79</i>	<i>106</i>	<i>185</i>
	Urolithiasis	0-5	1	0	1
		6-17	1	2	3
		18-40	31	15	46
		41-60	49	10	59
		61-100	8	3	11
		<i>Total</i>	<i>90</i>	<i>30</i>	<i>120</i>
	Urine retention	18-40	2	0	2
		41-60	5	1	6
		61-100	2	0	2
		<i>Total</i>	<i>9</i>	<i>1</i>	<i>10</i>
	Gross hematuria	61-100	1	0	1
		<i>Total</i>	<i>1</i>	<i>0</i>	<i>1</i>

Note: naming for disorders is based on *International Classification of Disease* edisi 11 (ICD-11)⁴

Not all kidney disorders are classified in emergency cases. Emergency cases of the kidneys that are often the reason for

patients visiting ER include kidney trauma, stones in the pelvicaliceal system, infections and other diseases. In

this study there were no cases of kidney trauma. Whereas cases of nephrolithiasis were found in 11 patients a year (72.7% male and 27.3% female). This small number is thought to be related to the lack of diagnostic modalities in this case so that the most common cases were only unspecified urolithiasis (120 patients).

Kidney disorders were found in 133 patients (52.6% male and 47.4% female). This case is divided into AKI (22 patients) and CKD (111 patients). There were 1 case of kidney failure reported in female patients aged between 6-17 years. Kidney failure in these children can be caused by various diseases, including hemolytic-uremic syndrome, glomerulonephritis, intrinsic kidney disease, urinary obstruction, postoperative sepsis, ischemic and pre-renal, organ and bone marrow transplants, and miscellaneous.⁵ Good understanding by the clinician about the etiology, and rapid action (as in the case of urinary obstruction) can reduce morbidity.

In adults, the most common etiology of AKI is renal and post-renal disorders.⁶ Unlike CKD that are caused by pre-renal disorders such as metabolic disorders and drug abuse.⁷ This is because in patients with pre-renal disorders rarely found complaints that force patients coming to health services. This delay causes the process of acute illness to become chronic is difficult to prevent.

Trauma and stones in the ureter are reasons why patients come to the ER. In this study there were no cases of ureteral trauma, whereas for ureterolithiasis there were 1 case of male aged 41-60 years. Like nephrolithiasis, this case also has a small number of visits compared to unspecific urolithiasis.

In this study 5 patients with vesiculolithiasis and 2 patients with bladder tumors were found. Complaints that encourage patients to come to the ER in both hematuria (gross), urine retention, may be accompanied by dysuria or suprapubic pain. Whereas for cases of bladder trauma, no reports were found.

Compared to the previous three organs, the cases of urethral disorders that were found actually related to genital organ trauma (urethra rupture) were 7 male patients who were evenly distributed in the 6-100 year age group. Urethral rupture is a common case of blunt trauma, especially in pelvic fractures. In the case of blunt trauma, the posterior part of the urethra can rupture and cause hematuria. Whereas if the rupture is anterior to the urethra, the most etiology is penetrating trauma. Although to make sure the place must be examined further.⁸

The highest number was occupied by UTI with 185 patients (33.4% of total patients). According to the sex, the number of male visits (42.7%) was less than that of female (57.3%). Female are more at risk of UTI because they have a shorter urethra, but in some cases the infection can be asymptomatic.⁹

This case is found at most in the age range of 18-60 years (productive age). This can be caused by several factors, including lack of fluid consumption and weather, where the productive age group is required to keep on activities in hot weather.¹⁰ Vigilance against urinary tract infections in this age group can accelerate the diagnosis of disease, especially in patients with unspecific complaints fever.

Like UTI, urolithiasis is also found in patients of productive age groups. Urolithiasis is one of the major urinary tract diseases and is the main source of morbidity.¹¹ Urolithiasis is found in male (75%) compared to female. In this study also found 1 case of urolithiasis in patients aged less than 5 years. As with adult patients, the most common etiology of this event is a metabolic disorder that includes hypercalciuria, hyperoxaluria, and hypocitraturia. Consumption of certain drugs can also cause urolithiasis in children, such as loop diuretics and suplemen calcium or vitamin D. The component of the drug is difficult to dissolve during urinary excretion so it can

accumulate into stones or cause nidus which can trigger urolithiasis. Treatment of tumors is also thought to play a role in the formation of stones in the urinary tract of children.¹²

In addition, there are also 10 cases of urinary retention which are unspecific causes. The etiology of urinary retention in male adults is grouped into three, including obstructive (mechanical, such as prostatic enlargement and urethral strictures; dynamic due to increased smooth muscle movement, such as postoperative pain and drug effects), neurologically (such as pelvic surgery, multiple sclerosis, spinal trauma, and diabetes), and myogenic (such as post anesthesia and alcohol consumption).¹³ In female, urinary retention is a rare case but needs special attention because of the diverse etiology. The etiology can be anatomically, divided into extrinsic (pelvic organ prolapse, genital tumor, improper pessary, post-incontinence procedure), urethral (stricture, meatal stenosis, urethral caruncle thrombosis, diverticulum, Skene gland abscess), luminal (stones, bladder or urethral tumors, ureterocele, foreign bodies), and destrutor contractility disorders (changes in the anatomy of the

bladder in the elderly, diabetes mellitus, lower motor neuron lesions). While functionally, the etiology of urinary retention in female is divided into coordination disorders (bladder neck primary obstruction, Fowler syndrome, pseudodissinergia, external destrutor sphincter dissinergia, upper motor neuron lesions), peri operative (pain, epidural analgesia), inflammation (UTI, acute vulvovaginitis, lichen planus or vaginal sclerosis, genital herpes), and pharmacology (opiates, antipsychotics, antidepressants, antimuscarinic, and α -adrenergic agonists).¹⁴

There were also 1 cases with unspecified gross hematuria, this is thought to be related to neoplasm or trauma to the lower urinary tract. But certainty about the cause is still unknown because of the lack of diagnostic modalities.

The male genital system concerns all male reproductive organs, including the testis, epididymis, vas deferens, seminal vesicles, prostate gland, penis. A total of 79 patients (14.3% of total patients) were reported in this study. The distribution of these cases can be seen in Table 2.

Table 2. The distribution number of male patient visits with genital organ disorders based on following organ

Disorders	Age group					Total
	0-5	6-17	18-40	41-60	61-100	
Benign prostatic enlargement (BPE)	0	0	3	16	49	68
Prostate cancer	0	0	0	0	2	2
Undescended testicle	1	0	0	0	0	1
Orchitis	0	0	3	0	0	3
Testicular cancer	0	0	0	1	0	1
Post-circumcision bleeding	0	2	0	0	0	2
Traumatic penile amputation	0	0	1	0	0	1
Erectile dysfunction	0	0	1	0	0	1
<i>Total</i>	<i>1</i>	<i>2</i>	<i>8</i>	<i>17</i>	<i>51</i>	<i>79</i>

BPE diagnosis can be ascertained by clinical and pathological examination. In this study, the diagnosis of BPE cases was only based on clinical examination. From **Table 2**, BPE patients were found between the ages of 18-40 years, where at this age

the prostate normally only grows to 20g. This needs to be further evaluated microscopically to exclude other possibilities, such as infection (prostatitis). Whereas at the age of more than 40 years, the prostate can show signs of hyperplasia

microscopically in 80% of male, although macroscopic BPE will be seen at more than 50 years. While 54% of patients aged 60-70 years will show urological symptoms, which is indicated by the increasing number of visits to health services.¹⁵ Cases of prostate cancer are also a special concern, although the number of visits is low. That is because at the place of this study, patients with neoplasm cases were immediately treated in hospitals with complete facilities. In addition, limited facilities are the reason for prostate cancer can only be assessed from a physical examination at this hospital.

Testicular disease obtained in this study was divided into three, including 1 case of undescended testicle in children less than 5 years, 3 cases of orchitis at ages 18-40 years, and 1 case of testicular cancer at the age of 41-60 years. Although cases of testicular disease have a small number of visits, if the management given is not appropriate it will increase morbidity.

Post-circumcision bleeding also increases the number of patient visits with male genital trauma. In a study conducted in Nigeria in 2015 there was a positive correlation of activated partial thromboplastin time (aPTT) with post-circumcision bleeding. This gives an indication of the importance of hemostatic examination in patients with planned circumcision.¹⁶

Although traumatic penile amputation is a rare case, but also needs special attention because of the large amount of blood that may be lost in the patient's journey to the trauma center. Appropriate fluid resuscitation can reduce mortality rates in these patients, in addition to overcoming the source of bleeding by operative (repair or stump plasty). While for cases of erectile dysfunction, patients come to the emergency department only because of administrative problems.

CONCLUSION

The number of patient visits with urinary disorders was 475 patients with 57.1% men and 42.9% women. Of the total, 30.3% were associated with kidney problems, 0.2% ureteral disorders, 1.5% bladder disorders, 1.5% urethral disorders, and the rest were disorders with unspecific location (UTI, urolithiasis, urine retention, and gross hematuria). While based on the type of the disorder, UTI, urolithiasis, and chronic kidney disease were the most common cases with a percentage of 38.9, 25.3, and 23.4 respectively. The number of patient visits with male genital disorders was 79 cases which included BPE, orchitis, prostate cancer, post-circumcision bleeding, undescended testicle, testicular cancer, traumatic penile amputation, and erectile dysfunction. Each percentage of cases was 86.1, 3.8, 2.5, 2.5, 1.3, 1.3, 1.3, and 1.3. The importance of knowing the number of patient visits with urogenital disorders in ER will make the clinicians be directed in preparing themselves for urogenital emergencies in their respective health services.

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