ORIGINAL ARTICLE

Profile of Acute Epididymo-Orchitis Patients in Arifin Achmad Regional General Hospital Riau Province, Indonesia

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ABSTRACT

Purpose: To evaluate the profile of acute epididymo-orchitis patients.

Materials and Methods: We reviewed medical records of acute epididymo-orchitis patients underwent management in urology ward of Arifin Achmad Regional General Hospital, Pekanbaru, Riau Province, Indonesia. The data collected consisted of age, clinical symptoms, physical examination, radiology examination, managements, length of stay and the complication. Statistical analysis of univariate was used. Approval on the study was obtained from the Ethical Review Board for Medicine and Health Research, Medical Faculty, University of Riau.

Results: There were 21 acute epididymo-orchitis patients in the study in which mostly (57.2%) occured in 2015, mostly (47.6%) in 21-30 years old age group, the most clinical symptom (80.9%) was scrotal pain, most physical examination (71.4%) was swollen scrotum, all theraphy (100%) were ceftriaxon and ketorolac. Hematocrit was mostly supportive test (95.2%) done, the average duration of treatment were in 4-7 days in 57.1% of patients and complication such as testicular abscess was found in 4.8% patients. .

Conclusion: Acute epididimo-orchitis patients in our hospital mostly suffered young man, scrotal pain, scrotal swollen, drug therapy with antibiotic and pain killer, 4 - 7 days in lenght of stay and minimal complication.

Keywords: Acute, Epididymo-orchitis, epididymitis, Orchitis

INTRODUCTION

Acute epididymo-orchitis is an inflammatory process of the epididymis and testes or symptoms that most often occur with acute pain. Acute epididymo-orchitis is caused by a large proportion of sexually transmitted pathogens that radiate upward and uropathogens that spread to the urinary tract. A small portion of acute epididymo-orchitis is caused by bacterial infections such as E.coli through urine that enter the vas deferens. Acute epididymo-orchitis can occur at any age and is the most common cause in men over the age of 35 years. The cause is partially blocked urine flow with increasing age. Sexually transmitted infections are also the cause of acute epididymo-orchitis in young men who are actively having sex.[1]

The most common causes of acute epididymo-orchitis are chlamydia and gonorrhea. These germs usually infect the urethra (urethritis) and can pass through the vas deferens to the epididymis and testes.[1] In addition, viruses are also one of the causes of acute epididymo-orchitis, which is through the bloodstream to the testes. But now it is rare because there are already mumps, measles, rubella (MMR) immunizations that are routinely given to children. Infection of the rare causes of acute epididymo-orchitis is tuberculosis, brucellosis, and in people who have problems with the immune system such as Acquired Immune Deficiency Syndrome (AIDS).[2]

Acute epididymo-orchitis in children who have not entered school age is considered a rare case. Anderson et al. diagnosed acute epididymo-orchitis was only 15% in boys with symptoms of acute scrotum pain. But some new researches had changed this research. Lewis et al analyzed for 2 years various etiologies of acute scrotum pain in boys treated in the emergency room. In this study of 238 boys only 109 were diagnosed with inflammation, 83 of them due to inflammation of the gonads, and 46 boys experienced testicular torsion. Klin et al. estimate the prevalence of acute epididymo-orchitis by 65% of 65 children referred in the past 5 years due to acute scrotum pain.[3] The most common symptom in acute epididymo-orchitis is pain on one side of the testis and discomfort. Pain that is felt often spreads in the scrotum area, groin, thighs, lower back, and can worsen the situation when sitting too long. In addition, there is also a change in sperm color or viscosity. In some patients there is inflammation that can affect the prostate gland, causing discomfort in the

groin, perineum, or thighs and may affect the ability to urinate. Symptoms of a source of infection include urethral pain, pelvic pain, painful urination, or a burning sensation in the bladder (cystitis), fever, perineal pain, pelvic pain, swelling, and redness of the skin. The scrotum can experience swelling in the presence of hydrocele. It is necessary to ask about the history of the disease, physical examination, and urine samples to diagnose acute epididymo-orchitis. Urine culture is a more certain way to see if there is a bacterial infection other disorders.

Management of acute epididymo-orchitis caused by bacteria is by giving antibiotics for 2 weeks, such as doxycycline, azithromycin, ofloxacin, syphroploxaksin, levofloxacin, or trimethhoprim. There is no specific therapy for acute non-infectious epididymo-orchitis. Common therapy for acute epididymo-orchitis includes a one to two day rest, antibiotics, and scrotum evaluation. The goal is to reduce swelling and discomfort.[3] Based on the description above, encourage the author to conduct research on the profile of acute epididymo-orchitis patients.

MATERIALS AND METHODS

We reviewed medical records of acute epididymo-orchitis patients underwent management in urology ward of Arifin Achmad Regional General Hospital, Pekanbaru, Riau Province, Indonesia. The data collected consisted of age, clinical symptoms, physical examination, radiology examination, managements, length of stay and the complication. Statistical analysis of univariate was used. Approval on the study was obtained from the Ethical Review Board for Medicine and Health Research, Medical Faculty, Riau University.

RESULTS

There were 21 acute epididymo-orchitis patients in this study. Table 1 showed the highest incidence of acute epididymo-orchitis occurred in 2015 as many as 12 patients (57.2%) and in 2016 there were 5 patients (23.8 %), and in 2017 there were 4 patients (19.0%) while in 2010-2014 there was no acute epididymo-orchitis.

Table 2 showed the highest incidence of acute epididymo-orchitis occurred in 2015 as many as 12 patients (57.2%) and in 2016 there were 5 patients (23.8 %), and in 2017 there were 4 patients (19.0%) while in 2010-2014 there was no acute epididymo-orchitis.

Table 2 showed that the most acute age group of epididymo-orchitis patients is in the age range of 21-30 years in 10 patients (47.6%) while the least was the age range 1-10 years old patients were not found in this study.

Table 1 Distribution of acute epididymo-orchitis patients by year.

Year	Frequency N=21 (%)
2010	0 (0)
2011	0 (0)
2012	0 (0)
2013	0 (0)
2014	0 (0)
2015	12 (57.2)
2016	5 (23.8)
2017	4 (19.0)

Table 2: Frequency distribution of epididymo-orchitis patients by age

Age (year)	Frequency N=21 (%)
1-10 year	0 (0)
11-20 year	3 (14.3)
21-30 year	10 (47.6)
31-40 year	4 (19.0)
41-50 year	2 (9.5)
>50 year	2 (9.50

Table 3. Frequency distribution of epididymo-orchitis patients based on clinical symptoms.

Symptom	Frequency N=21 (%)
Scrotal pain	
Yes	17 (80.9)
No	4 (19.1)
Swollen testis	
Yes	10 (47.6)
No	11 (52.4)
Fever	
Yes	14 (66.7)
No	7 (33.4)
Nausea	
Yes	5 (23.8)
No	16 (76.2)

Table 4: Frequency distribution of epididymo-orchitis patients based on physical examination.

Physical examination	Frequency N=21 (%)
Swollen scrotum	
Yes	15 (71.4)
No	6 (28.6)
Red scrotum	
Yes	1 (4.8)
No	20 (95.2)
Scrotal pain	
Yes	9 (42.8)
No	12 (57.1)

Table 5: Distribution of epidemiology of orchitis patients based on investigations

Supporting investigation	Frequency N=21 (%)
Urinalysis	
Erythrocyte	
(>2/hpf)	0 (0)
(< 2/hpf)	4 (19.1)
Not done	17 (80.9)
Leukocyte	
(> 5/lpb)	0 (0)
(< 5/lpb)	4 (19.1)
Not done	17 (80.9)
Routine blood	
Leukocyte	
(> 10.000/ mm3)	14 (66.7)
(<5000 /mm3)	0 (0)
(5000-10.000)	6 (28.6)
Not done	1 (4.7)
Hemoglobin	
(14-18 gram/dL)	10 (47.6)
(< 14 gram/dL)	10 (47.6)
Are not done	1 (4.8)
Hematocrit	
(<40%)	20 (95.2)
(>52 %)	0 (0)
Not done	1 (4.8)
Doppler Ultrasoud	
Hypervascularization	1 (4.8)
Avascularization	0 (0)
Not done	20 (95.2)
Conventional Ultrasound	
Yes	8 (38.1)
No	13 (61.9)

Table 6: Frequency distribution of epididymo-orchitis patients based on management

Management	Frequency N=21 (%)
Antibiotic	
Ceftriaxon	21 (100)
Analgesic	
Ketorilac	21 (100)

Table.7 Frequency distribution of epididymo-orchitis patients based on length of stay

Length of stay	Frequency N=21 (%)
1-3 day	8 (38.1)
4-7 day	12 (57.1)
8-10 day	1 (4.8)
11-15 day	0 (0)

Table 8: Frequency distribution of epididymo-orchitis patients based on complications

Complication	Frequency N=21 (%)
Get well	20 (95.2)
Chronic infection	0 (0)
Testicular fibrosis	0 (0)
Testicular abscess	1 (4.8)

Table 3 show the most common clinical symptoms of epididymo-orchitis were scrotum pain in 17 patients (80.9%). While the number of patients at least based on clinical symptoms was nausea / vomiting in 5 patients (23.8%).

Table 4 showed that the most physical examination was swollen scrotum in 15 patients (71.4%). In this study also found the least amount was red scrotum 1 patient (4.8%).

Table 5 showed the highest number of patients based on investigations was hematocrit in 20 patients (95.2%).

Table 6 showed most management based on antibiotics and analgesics were ceftriaxon and ketorolac in 21 patients (100%).

Table 7 showed the highest number of patients based on length of stay is 4-7 days 12 patients (57.1%). In this study, the number of patients at least based on length of stay was 8-10 days 1 patient (4.8%). Whereas patients treated for 11-15 days were not found in this study.

Table 8 showed there were 20 patients (95.2%) who had complete recovery and no patients were found to have chronic infections and testicular fibrosis. And 1 (one) patient (4.8%) had a testicular abscess.

DISCUSSIONS

Based on the results of this study, the highest group who experienced acute epididymo-orchitis were the 21-30 year age group, namely 10 people (47.6%). This is similar to G.A's research. Luzzy and T.S. O'brien 2001 said that 610 cases in the United States occur most often 70% of cases occur at the age of 20-39 years. But all ages were affected this disease (age 4 months to 76 years).[5] Acute epidimitis often occurs in patients who are sexually active young adults. This disease has a substantial impact on American military services. In the early 1970s it was reported that epididymitis causes reduced hours of work in United States military personnel compared to other urological disorders, and at that time epididymitis was the most common cause of someone entering urological services. In older men > 35 years of age, most pathogenic organisms often causes epididymitis is a pathogenic organism that causes UTI, such as E. coli. In a recent study of men > 40 years of age with acute epididymitis, 32% were found to have UTI caused by E. coli.[12]

Based on the results of this study, clinical symptoms of acute epididymo-orchitis patients were scrotum pain in 17 (80.9%) patients. While the least clinical symptoms in cases of acute epididymo-orchitis are nausea and vomiting, in 5 (23.8%) patients. The study was in accordance with Esragul Akinci's (2006)

study which stated that the most common symptoms in acute epididymo-ochitis patients were scrotal pain (94%) and swelling (82%).[13] However, it was different from GA Luzzy and TS O'brien 2001 research. Fever (> 37.5'C) occured in about three-quarters of cases of acute epididimo-orchitis. Shivering is reported in a quarter of those who have a fever, and more often in the elderly. Adjacent testicular involvement and the occurrence of inflammation or hydrocele that often occur. Clinically, orchitis occurs in 58% of patients in all acute epididymo-orchitis patients, scrotum skin erythema 62% and is strongly associated with epididymal swelling. This difference is thought to be due to differences in research sites and differences in time and the sample size taken in conducting research.

The results of this study found that the most physical examination was swollen scrotum which was 15 people (71.4%) and the least obtained was the red scrotum which was 1 person (4.8%). In contrast to Christina B Ching's study which stated that physical examination might fail to distinguish epididymoorchitis from testicular torsion, the physical examination findings associated with acute epididimoorchitis include such as tenderness and induration that occur first in the epididymal tail and then spread, increased hemiscrotum, cremasteric reflection normal, erythema and scrotal cellulitis, reactive hydrocele (if the patient has advanced epididymo-orchitis), testicular enlargement, epididymis that does not heal, in 20-40% of cases associated with acute epididymis. This difference was thought to be due to differences in the samples taken in conducting research. Based on this study, the most investigations performed on acute epididymo-orchitis patients were hematocrit in 20 patients (95.2%) and the least doppler ultrasound was 1 patient (4.8%). This study was different from GA Luzzi (2001) 's study, which says that color flow doppler ultrasound was currently an option in evaluating acute scrotum in 40 patients with acute scrotum pain, color Doppler imaging has a sensitivity of up to 70% for epididymitis with a specificity of 88%, and for testicular torsion the sensitivity is 82% and specificity is 100% .19 In contrast to the Hoosen AA study which stated that the presence of urethritis supports the presence of the epididymis although urethra symptoms rarely occured in only 30% in men who experience acute epididymitis. 70% of patients are usually proven to have leukocyte urethritis (<5 hpf). In Durban 93% of 94 boys with epididymis were detected with urethritis using a slightly lower threshold of leukocytes (> = 4 hpf).[6]

In Taylor-Robinnson's (1996) study, chlamydia culture or chlamydial mAb tests were generally used. In routine clinical practice, the chlamydial enzyme immunoassay test (EIA) is often used as an initial test, if the results are positive, more specific tests should be continued such as immunofluorescence. Tests can be applied to firstvoid urine samples (first urine) and urethral swabs. Unfortunately, the EIA test has low sensitivity (50 ± 70%). Molecular methods that have recently been developed using ligase chain (LCR) or PCR reaction techniques have high sensitivity, and shows that the culture that has been the gold standard for diagnosis, the sensitivity is not more than 70%. It is likely that the use of LCR or PCR in men with <35 years old epididymitis will result in a higher detection rate than previously found.[7] In contrast to Mary AE Garthwhaite's (2017) study which recommended that urethral swabs be taken and sampled mid-stream urine for diagnostic purposes before antibiotic therapy begins, this examination for urine culture is carried out in 54.7% of cases, urine for chlamydia PCR is performed in 17% of cases and urethral swabs are only 5.6% of cases. Since PCR is not yet widely available for routine clinical use, therapy has become a gold standard because of its high specificity and sensitivity.[8] This difference is thought to have occurred because the Taylor-Robinnson and Marry AE study focused on tests to diagnose sexually transmitted infections while this study was conducted to see how many supporting examinations had been carried out.

Based on the results of this study, the most management in acute epididymo-orchitis patients was ceftriaxon and ketorolac, which were 21 patients (50%). This study is in accordance with the research conducted by Mary AE Martinwaitel (2007) as many as 89 cases of acute epididymo-orchitis were identified over a period of 6 months. Of these, only 53 sets of records are available for review. The age range of patients is 18-87 years with an average age of 38 years, 26 patients aged <35 years and 27 patients> 35 years (11 patients > 50 years). Of the patients who came to the emergency department 28% had been started using antibiotic therapy by general practitioners. Examinations to identify causative pathogens include midstream urine (MSU) samples for culture (54.7%) urine for chlamydia polymerase chain reaction (PCR; 17%) and urethral swabs (5.6%). Oral antibiotics were prescribed in 81 cases. Of all patients who were given antibiotics 46.5% were given ciprofloxacin alone (mean age 52 years range 18-87 years), 25.5% were given doxycycline, (mean age 30 years range 18-45 years) and 21% were given ciprofloxacin in combination with doxycycline, (mean age 32 years range 18-49 years). The dosage regimen has been documented and the duration of treatment also varies.[9]

Based on the results of this study, the highest number of patients who underwent treatment during their stay at RSUD Arifin Achmad, Riau Province was 4-7 days, namely 12 patients (57.1%) and the least was 8-10 days, namely 1 patient (4.8%) . This study is in accordance with Pilatz A's study which says a cohort study using semen parameters that were disrupted during the course of epididymitis, but

would recover spontaneously after successful treatment, and most cases of orchitis due to mumps disappear spontaneously within 3-10 days with antibiotics according to the majority of cases of bacterial orchitis it can heal without complications

Based on the results of this study of 21 patients there was 1 patient who experienced complications. Complications that occur in this patient are abscesses (4.8%). And the rest had a complete repair or recovery of 20 patients (9.2%). This study is in accordance with the research of Adrian Rhudd (2017) who said that complications that are rare in men suffering from epididymo-orchitis disease scrotum abscess formation 3-5% .23 Not unlike the research of GA Luzzy (2001) which states that in older men > 40 years 90% recover within 30 days after treatment. However, in a follow-up study of 33 men with severe epididymitis mainly caused by coliform 39% experienced testicular complications including intratesticular abscess and epididymis, testicular infarction and 7 (21%) of them experienced testicular atrophy, in the acute phase of abscess formation 3 (8%) at the beginning where treatment was delayed.[11]

CONCLUSIONS

Acute epididimo-orchitis patients in our hospital mostly suffered young man, scrotal pain, scrotal swollen, drug therapy with antibiotic and pain killer, 4 – 7 days in length of stay and minimal complication.

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