CHARACTERISTICS OF PRIAPISM PATIENTS AT ARIFIN ACHMAD HOSPITAL RIAU PERIOD 2017-2021

[1]Muhammad Adan Yashar, [1]Wulan Permata Sari, [1]Zuhirman, [1]Indra Jaya.

[1] Departement of Urology, Faculty of Medicine/University of Riau, Arifin Achmad Hospital, Riau.

ABSTRACT

Objective: *To find out the description of the characteristics of Priapism patients.* ***Material & Methods:*** *This research used a total priapism patients in Arifin Achmad Hospital, Riau Province from January 2023 to February 2023.* ***Results:*** *From 7 patients with priapism who met the inclusion and exclusion criteria, most age group were from the 36-45 year age group in 3 (42.9%) patients. History of disease in patients with most priapism was leukemia in 3(42.9%) patients.* ***Conclusion:*** *Classification of ischemic priapism were in 4 (57.1%) patients and non-ischemic priapism was 3 (42.9%) patients and all management of priapism patients was carried out by surgery (100%).*

Keywords: *Priapism, leukemia, management of priapism.*

ABSTRAK

Tujuan: *Mengetahui gambaran karakteristik pasien Priapismus.****Bahan& Cara:****Metode penelitian Total sampling yang dilakukan di RSUD Arifin Achmad Provinsi Riau dari bulan Januari 2023 hingga Februari 2023.* ***Hasil:*** *Dari 7 pasien priapismus yang memenuhi kriteria inklusi dan ekslusi didapatkan kelompok umur terbanyak adalah kelompok usia 36-45 tahun sebanyak 3(42.9%) pasien. Riwayat penyakit pada pasien priapismus terbanyak adalah leukemia sebanyak 3(42.9%) pasien.* ***Simpulan:*** *Klasifikasi priapismus iskemik sebanyak 4(57.1%) pasien dan priapismus non-iskemik sebanyak 3(42.9%) pasien, serta semua penatalaksanaan pada pasien priapismus dilakukan dengan tindakan operasi (100%).*

Kata kunci: *Priapismus, leukemia, tatalaksana priapismus.*

Correspondence: Muhammad Adan Yashar, c/o: Departement of Urology, Faculty of Medicine/University of Riau, Arifin Achmad Hospital.Jalan Diponegoro No.2, Pekanbaru, Riau Indonesia.Email: zuhirman.zamzami@yahoo.com.

INTRODUCTION

Priapism is a full or partial erection that lasts more than 4 hours without sexual desire and is often accompanied by pain.[1-2] The word priapism comes from the Greek word priapismus, the name of the god of virility in Ancient Greece.[3] This priapism is one of the emergency erections. unexpected prolonged exposure, if left unchecked can cause erectile dysfunction and can also cause infection of the inner tissue of the penis which can interfere with quality of life.[4]

The cause of this priapism varies in each population with 60% of cases of priapism are primary which is idiopathic, the exact cause is unclear and the remaining 40% are secondary priapism [5]. Pohl et al (1986) reported on 230 cases, the causes of priapism were mostly idiopathic, 21% of cases were associated with alcohol or drug abuse, 12% with perineal trauma and 11% with SCD.[1]

Based on a retrospective epidemiological study conducted at the Los Angeles Metropolitan Medical Center in 2010-2018, reported a priapism incidence of 21.93 people per 100.000. In the United States, in 2006-2009, the reported incidence rate of patients with a primary diagnosis of priapism was 5.34 per 100.000.[6] Priapism does not have a special predilection for a particular race, priapism can occur at almost any age, from infancy to old age with a peak distribution at 5-10 years and 20-50 years.[4]

Priapism is divided into two classifications, namely ischemic (low-flow) priapism and non-ischemic (high-flow) priapism.[5] Ischemic priapism is caused by a process of venoocclusion or blockage in the blood vessels of the penis, so that blood is unable to flow and accumulates in the penis. Non-ischemic

priapism occurs because the blood vessels in the penis are torn or ruptured, so that too much blood flows into the penis, this condition can be caused by injury to the area between the penis and anus.[3]

Management of priapism can be distinguished based on its classification. In the ischemic type, immediate action must be taken in the form of: Aspiration of blood in the corpus cavernosum of the penis, this process can be accompanied by 0.9% NaCl irrigation and injection in the cavernosa of the penis with phenylephrin 200 ng per 3-5 minutes (max 1mg/hour) in the hope that this will happen penile detumescence. Another option of therapy is by operative techniques. Surgical intervention, should be carried out as soon as conservative management fails after 1 hour.[7] In recurrent ischemic priapism, aspiration and irrigation can be performed in combination with intracavernous injection of adrenergic agonists including 5α-reductase inhibitors (5-ARIs) and gonadotropin-releasing hormone agonists (GnRH agonists).[8] The initial management of non-ischemic priapism is different from ischemic priapism, first-line management should be clinical surveillance and conservative therapy. However, sufficient information regarding conservative therapy is not yet available.[2] For cases that fail to respond to conservative treatment, selective angioembolization of an arterio-sinusoidal fistula should be considered.[2]

OBJECTIVE

The objective of this study was to describe the characteristics of Priapism patients at Arifin Achmad Hospital Pekanbaru in 2017-2021.

MATERIAL & METHODS

This was a retrospective study with the data was obtained from medical records of patients diagnosed with priapism at Arifin Achmad Hospital, Pekanbaru Riau which had fulfilled inclusion and exclusion criteria. The inclusion criteria in this study were all medical records of priapism patients at Arifin Achmad Hospital Riau in 2017-2021 and the exclusion criteria were the medical records of patients with incomplete data. The variables in this study were age, medical history, classifications and management of priapism. Approval on the study was obtained from the Ethical Review of Medical Faculty, Riau University.

RESULTS

Table 1. Variables.

Variables		n	%
Age	36-45 Years	3	42.9
Medical history	Leukemia	3	42.9
Classification	Iskemic	4	57.1
Management	Surgery	7	100

Table 2. Age groups in priapism patients.

Age groups(year)	n	f(%)
0-5	1	14.3
5-11	0	0
12-16	0	0
17-25	1	14.3
26-35	0	0
36-35	0	0
36-45	3	42.9
46-55	2	28.6
56 65	0	0
>65	0	0
Total	7	100

Table 3. Disease history in priapism patients.

Disease history	n	f (%)
Sikle cell anemia	0	0
Thalassemia	0	0
Leukemia	3	42.9
Fat embolism	0	0
Prostate cancer	0	0
Bladder cancer	1	14.3
Kidney carsinoma	0	0
Melanoma	0	0
Intrakavernosa injection	1	14.3
Antikoagulan drugs	0	0
Antihipertension drugs	0	0
Narcotics	0	0
Trauma	2	28.6
Alkoholism	0	0
Total	7	100

Table 4. Classifications of priapism patients.

Classifications	n	f(%)
Ischemic	4	57.1
Non-ischemic	3	42.9
Total	7	100

Table 5. Management of Priapismus patients.

Management	n	f(%)
Conservative	0	0
Aspiration, irrigation and intrakavernosal injection	0	0
Operation	7	100
Total	7	100

DISCUSSION

The results of the study showed there were 7 priapism patients with the highest number were 36-45 age year group in 3(42.9%) patients , followed by 46-55 age ear group in 2(28.6%) patients, then in 1(14.3%) patient each in 0-5 and 17-25 age year groups.

This study showed the same results as a study by Florian et al [6] which assessed the incidence of priapism in emergency departments in the United States in 2006-2009, in 32.462 patients with priapism, the average age of patients was 37 years. The different result was obtained by Hanson et al [9] which found that the age of patients diagnosed with priapism had an average of 45.5 years. A study by Kulmala et al[10] showed the incidence and distribution of priapism in Finland, found that the highest incidence was in 40-50 years, there was only one pediatric case in the age group 0-10 years and the disease was rare in the age group 11-12 years. Our study was also different from the study by Sugihara et al[11] which assessed the incidence and clinical features of priapism in Japan in 2006-2008, found that the average age of patients diagnosed with priapism was 41.5 years. Our study results were also are in accordance with by Osama[4] study that showed priapism could occur at any age, but it often occurs at the age of 5-10 years in children and 20-50 years in adults and in children priapism were generally caused by hematological abnormalities and trauma, whereas in adulthood it was often caused by malignancy and the use of certain drugs.

The study results showed the most common history of priapism patients was caused by leukemia in 3(42.9%) patients, the second most was caused by trauma in 2(28.6%) patients and each 1(14.3%) patients with a history of malignancy and a history of post intracavernous injection.This study result was different from a study by Florian et al[6] in which the most common (25%) cause of priapism was sickle cell anemia. The results of this study were different from a study by Hanson et al[9] that showed there were 82(49%) priapism patients in 169 patients after intracavernous injections. Priapism that occurs after experiencing intracavernous injection had previously been reported by Sanjana et al[12] in this study there were patients with persistent penile erection after intracavernous injection using papaverine 60 mg.

Made et al[13] (2020) reported an ischemic priapism with chronic granulostic leukemia whose penis was erectile for 19 hours. The occurrence of priapism caused by leukemia is associated with failure of nitric oxide in the penile blood stream, which causes platelet aggregation, thrombus and tissue damage. A decrease in the amount of nitric oxide will disrupt the relaxation of the smooth muscle of the penis which can cause priapism and high viscosity due to the number of leukocytes is also associated with the occurrence of priapism in leukemia patients.

Priapism caused by trauma has also occurred before, such as the case reported by Ciro et al[14] which was published in 2020 entitled "High-flow post-traumatic priapism" in which a 22 year old man experienced an erection on his penis after experiencing blunt trauma perineum as a result of a motorcycle accident. Priapism that occurs in patients who have a history of previous malignancy has also been reported, in accordance with a study conducted by Oliver et al[15] in 2019 entitled "Malignancy: A Rare, Important and Poorly Understood Cause of Priapism" concluded that malignancy is a potential cause can cause priapism. In theory, ischemic priapism most often results from sickle cell disease, leukemia, other hemoglobinopathies, and malignancies[1]. However, the difference in the majority of the history of this disease is influenced by the level of occurrence of the disease in a country.

Based on the results of the study, the most classification of priapism is ischemic priapism, there are 4 people (57.1%) and 3 people with non-ischemic priapism (42.9%).

This study is in line with research conducted by Joshua et al[16] which was published in 2022, found that the number of patients diagnosed with ischemic priapism was higher than non-ischemic priapism, there were 93 patients diagnosed with priapism from 1 January 2012 to 1 January 2022, It was found that 89 patients (96%) had ischemic priapism and 4 patients (4%) had non-ischemic priapism. Hanson et al9 also conducted a retrospective study and found that all cases of priapism in the Los Angles emergency room from 2010-2018 found that 169

cases (100%) were ischemic priapism. In theory, in Capbell Walsh's book, ischemic priapism is more common than non-ischemic. Because non-ischemic priapism is always associated with previous perineal or penile trauma.[1]

Based on the results of this study in table 4, the most management of priapism is surgery, namely 7 people (100%).This study is the same as the study conducted by Sugihara et al[11] of 46 patients diagnosed with priapism, most of the management was carried out by surgical techniques, there were 11 people (24%) with winter procedures and 18 people (39%) with other surgical techniques. This study is different from that conducted by Hanson et al[9] in their 2019 research entitled "Priapism From Recreational Intracavernosal Injections in a High-Risk Metropolitan Community" in which 25 cases (14.8%) experienced spontaneous resolution without treatment, there were 4 cases (2.4%) with aspiration/irrigation only, there were 19 cases (11.4%) with sympathomimetic injections, there were 119 cases (70.4%) with aspiration/irrigation and sympathomimetic injections and 26 cases (15.4%)) with surgery. This difference is caused because all our patients with priapism have had erections for more than 48 hours, therefore their management must be carried out immediately with surgery to prevent erectile dysfunction. In principle, the management of priapism begins with establishing a diagnosis based on the clinical picture. For all treatments of priapism, the main goal is to maintain penile flexibility in non-sexual conditions and to maintain normal erectile ability for sexual activity when necessary. For this reason, proper and fast management is needed to avoid the risk of penile ischemia and anoxia which can cause erectile dysfunction and psychosocial complications.

CONCLUSION

The majority of priapism patients in our study were in the age group of 36-45 years 3 (42.9%) patients, the history of leukemia in 3(42.9%) patients, the main classification was ischemic in 4 (57.1%) patients and the majority of incidents in patients with priapism were surgery in all 7 (100%).

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