

Risk Factors for Patients with Gonococcal Urethritis at Dr. Hasan Sadikin General Hospital Bandung, Indonesia in 2013–2019

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Abstract

Background: Gonorrhoea is the second most common sexually transmitted infection in Southeast Asia. Many factors cause gonococcal urethritis, and each region has its characteristics. This study aimed to determine the risk factors among patients with gonococcal urethritis at Dr. Hasan Sadikin General Hospital Bandung.

Methods: This was a descriptive study with a retrospective and total sampling method, reviewing the gonococcal urethritis patient medical records obtained from Dr. Hasan Sadikin General Hospital Bandung from 2013 to 2019. Sociodemographic, clinical manifestations, and sexual or risky behaviors data were collected.

Results: Among 97 males with gonococcal urethritis, unmarried males (54.6%) and the age category of 20–24 years (35.1%) were predominant, with high school education/equivalent (58.8%). Based on their sexual behavior, the majority had more than one sexual partner in the past month (63.9%) and had never used a condom when having sex (55.7%). Additionally, there was also a group of man who had sex with man (MSM) (14.4%) and illicit drug users (19.5%).

Conclusions: Males in the young adult age group, single, have a high education level, have multiple sexual partners, and never used a condom during having sex, have a higher risk of having gonococcal urethritis. Identifying these most reported risk factors may help health care providers design effective prevention strategies. Unmarried young adults should be a primary focus in receiving educational programs. They should be informed regarding the impact of multiple sexual partners, condom usage, and illicit drug on gonococcal urethritis infection among men.

Keywords: Gonorrhoea, risk factor, urethritis

Introduction

Urethritis is an inflammation of the urethra, and a common genitourinary syndrome encountered in men in clinical practice. *Neisseria gonorrhoea*, a diplococcal Gram-negative bacteria, is one of the etiologic agents causing urethritis.¹ Transmission of this bacteria generally occurs through sexual contact with people infected with gonorrhoea, either genito-genital, ano-genital, or oro-genital. The common clinical manifestations that prompt people to seek a healthcare facility are purulent urethral discharge and painful urination (dysuria). It can also be accompanied by edema and erythema of the

urethral meatus.²

Globally, gonorrhoea ranks as the third most common sexually transmitted infection (STI), with an estimated 87 million new cases in 2016.³ In Indonesia, the incidence of gonorrhoea reaches 5.6 per 100,000 adult men. This is the second-highest incidence rate in Southeast Asia after Thailand.³ There is no specific data regarding the incidence of gonococcal urethritis in Indonesia, however in Bandung, it was recorded that in 2020 there were 1,723 STI cases.⁴

Previous reports have shown that many factors were found to be associated with gonorrhoea cases in men, such as socio-demographic factors and high-risk sexual

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behavior factors. In 2014–2018 in the United States, the majority of gonorrhoea cases in men were those aged 20–24 years and 25–29 years.⁵ Meanwhile, a research in Melbourne in 2019 found that the risk was high in men who used injecting drugs in the last 12 months.⁶ Furthermore, in 2019 a study in Ghana reported that most the patients had more than one sexual partner in the past month and had a high school educational levels.⁷ Interestingly, these studies have shown that each location has its own risk factor characteristics. The differences in risk factors between geographic locations might be caused by economic, socio-cultural, norms, and traditions that are unique to the regions. Therefore, the aim of the study was to explore the characteristics of risk factors for gonococcal urethritis in Bandung, West Java, Indonesia, especially from the tertiary care facilities, Dr. Hasan Sadikin General Hospital, which is expected to be important in formulating strategies for the prevention and management of gonococcal urethritis in the future.

Methods

This research was conducted with a retrospectively descriptive method using medical record data obtained from the Department of Dermatology and Venereology, Dr. Hasan Sadikin General Hospital Bandung, in 2013–2019. The inclusion criteria were male patients diagnosed with gonococcal urethritis at Dr. Hasan Sadikin General Hospital Bandung in the period 2013–2019. The exclusion criteria were incomplete, inaccessible, and or

duplicate data during the study period. The data were processed with Microsoft® Excel 2019 and IBM® SPSS® v.25. This research had received an ethical exemption from the Research Ethics Committee of Universitas Padjadjaran no. 700/UN6.KEP/EC/2020.

The results were presented in tables and figures to show the characteristic of gonococcal urethritis patients, sociodemographic, clinical manifestations, and sexual or risky behavior profile in number and percentage.

Results

During the observation, there were 97 data. Males with gonococcal urethritis were the highest in the year 2013 (n=32 patients). There were variations in clinical manifestation observed among male patients with gonococcal urethritis, of which mucopurulent urethral discharge and painful urination commonly occurred. Three patients experienced complications in the form of epididymitis, tysonitis, and abscesses on the tyson gland. As many as 18 patients were co-infected with other pathogens that caused STIs, precisely 5 patients (5.2%) with syphilis, 3 patients (3.1%) with HIV, and 10 patients (10.3%) with other STIs (genital warts, trichomoniasis, and genital herpes) (Table 1).

The age of patients varied from the youngest age of 18 years and the oldest age of 60 years (median age 25 years; Interquartile Range 23–33 years). All patients received formal education with 90.7% (n=88) having graduated from high level education. There were 53 (54.6%) unmarried or single patients

Table 1 Characteristics of Gonococcal Urethritis

Characteristic	Total (n=97)	
	n	%
Clinical Manifestation	Urethral discharge	29 / 29.9
	Urethral discharge + dysuria	43 / 44.3
	Urethral discharge + dysuria + erythema	18 / 18.6
	Urethral discharge + dysuria + erythema + edema	7 / 7.2
Complications	Epididymitis, tysonitis, or abscesses on the tyson gland	3 / 3.1
Coinfection	Syphilis	5 / 5.2
	HIV	3 / 3.1
	Other STIs (genital warts, trichomoniasis, and genital herpes)	10 / 10.3

Note: HIV= human immunodeficiency virus. STIs= sexually transmitted infections

Table 2 Sociodemographic Risk Factors among Patients with Gonococcal Urethritis

	Variable	Total (n=97)	
		n	%
Age group (year)*	15–19	9	9.3
	20–24	34	35.1
	25–29	19	19.6
	30–34	14	14.4
	35–39	8	8.2
	>39	13	13.4
Educational level	Elementary school/equivalent	2	2.1
	Junior high school/equivalent	7	7.2
	Senior high school/equivalent	57	58.8
	College/Academy	31	31.9
Marital status	Single/Unmarried	53	54.6
	Married	42	43.3
	Divorced	2	2.1

Note: *CDC age group classification⁵

(Table 2).

The majority of patients had multiple sexual partners with the median number of sexual partners of the patients in the past month being 2 (IQR, 1–5) and 62 patients (63.9%) had more than one sexual partner in the past month. The most recent sexual partner of patients was a girlfriend or friend (n=48; 49.5%), then a female sex worker (n=13; 13.4%). Most of the patients in this study

never used a condom when having sex (n=54, 55.7%). There were 14 men patients (14.4%) who had sex with men (MSM) group. Those who had or frequently used drugs mostly used marijuana (Table 3).

Discussion

Our study shows that male with gonococcal urethritis is predominantly found in the young

Table 3 Sexual and Risky Behaviour among Patients with Gonococcal Urethritis

	Variable	Total (n=97)	
		n	%
Number of sexual partners in the past month	<2	35	36.1
	≥2	62	63.9
Using a condom when having sex	Never	54	55.7
	25%	6	6.2
	50%	25	25.8
	75%	9	9.3
	Always	3	3.0
Sexual orientation	Heterosexual	83	85.6
	Homosexual	6	6.2
	Bisexual	8	8.2
Illicit drug use (marijuana, heroin, or ecstasy)	Yes	11	11.3
	Sometimes	8	8.2
	Never	78	80.5

adult age group (20–29 years) with median age of 25 years old. This finding is similar to the previous study in Brazil.⁸ The existence of behavioral, biological, and cultural factors triggers young people to engage in risky sexual behavior. Biologically, sexual hormones are active during adolescence and young adults, coupled with technological developments and the rapid flow of information media as a means of cultural exchange in society without filtering good or bad may predispose to risky sexual behavior.^{9–11}

The majority of the patients in this study have high school or college education, similar to study from Ghana.⁷ This implies that higher educational attainment does not guarantee safer sexual behavior, and they are not well informed about gonococcal urethritis or STIs in general, including preventive measures. Sexual health education is a very important strategy in preventing STIs. In Indonesia, sexual health education is still not included in the learning curriculum.¹² Therefore, further research is needed regarding the level of knowledge and strategies for implementing sexual health education at the high school level.

In this study, most of the patients were unmarried, consistent with research conducted in Ukraine and Ghana.^{7,13} The incidence of gonorrhea in unmarried men is higher than in married men. This reflects riskier sexual behavior in unmarried men, such as changing sexual partners. On the other hand, married status can be a barrier for someone to have free sex because sexual needs are met and marriage is considered sacred and must be maintained properly.^{14,15}

Sexual contact is the most important way of gonococcal bacteria transmission. Our study shows that most the patients had more than one sexual partner in the last month and a median of two sexual partners, similar to previous studies in Ghana and Ukraine.^{7,10} Having multiple sexual partners is one of the risky sexual behaviors. It becomes a risk factor for a person contracting an STI, including gonorrhea, because the possibility of gonorrhea transmission is getting bigger.¹⁰

In this study, most of the patients had never used a condom while having sex, and few rarely used it. This result is consistent with research in Australia which concluded that a group of men who rarely or never used a condom during sexual intercourse were 1.5 times more likely to develop gonococcal urethritis than the group who always used a condom.¹⁶ This shows that using condoms can protect a person from STIs if they are used

regularly and correctly. The inconsistent use of condoms can be caused by reason of reduced enjoyment when using condoms or a lack of knowledge about the benefits of condoms in the prevention of gonococcal urethritis or other STIs.¹⁷

Men who have sex with men (MSM) are one of the key populations at increased risk of developing HIV and other STIs due to a higher prevalence of community disease, behavioral, or biologic factor. In this study, there are fewer MSM compared to heterosexual men, similar to the study from Ukraine.¹³ This small number of cases of gonococcal urethritis in the MSM group could be caused by the location of gonorrhea infection which tends to be extragenital organs, as in a study in Lisbon which showed that of all gonorrhea diagnoses in the reported MSM group, the majority of cases occurred in extragenital organs, with the highest proportion at anorectal sites.¹⁸

Nearly one-fifth of the patients in this study had used illicit drugs. The type of drug that most commonly consumed is marijuana, which is in accordance with previous studies in Sweden and the United Kingdom.^{19,20} Marijuana causes damage to the central nervous system which will interfere with thinking and decision-making processes or disinhibition which ultimately leads to an increase in risky sexual behavior.^{19,20}

There is a limitation in this study, namely data collection was conducted retrospectively where there were incomplete or limited data on medical records.

To conclude, males in the young adult age group, single, have a high education level, have more than one sexual partner in the past month, and never used a condom during having sex, have a higher risk of having gonococcal urethritis. There are also MSM and illicit drug users in this study. Identifying these most reported risk factors may help health care providers design effective prevention strategies. Unmarried young adults should be a primary focus in receiving educational programs. They should be informed regarding the impact of multiple sexual partners, condom usage, and illicit drug on gonococcal urethritis infection among men.

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