



Characteristics of Syphilis Patient at Dermatology and Venereology Polyclinic

Suma Pratiwi Tanoto, Aditya Permana, Nandya Dwizella, Firly Clarissa Suyanto

Departement of Dermatology and Venereology, Faculty of Medicine, Udayana University

ABSTRACT

Background: In 2022, the United States reported 207,255 syphilis cases, marking a 17.3% increase from 2021, and the highest incidence since 1950. In Indonesia, early and late-stage syphilis cases reached 2,981 and 1,144 cases respectively in the first quarter of 2023. **Purpose:** This study aims to describe the characteristics of syphilis patients at the Dermatology and Venereology Polyclinic at Prof. Dr. I.G.N.G Ngoerah General Hospital. **Methods:** A retrospective descriptive study was conducted using secondary data from medical records of syphilis patients between January 2021 to December 2023. Data were obtained from the Sexually Transmitted Infection divisions. The study examined patient characteristics, including age, sex, occupation, comorbid conditions, syphilis stage, HIV status, sexual orientation, and sexual behaviour. **Result:** Out of 346 cases, the highest new syphilis cases recorded in 2021 (133 cases, 86%). The majority of patients were diagnosed with late latent syphilis (211 cases, 61%). The majority of patients were male (59%). The most affected age group was 25–44 years (174 cases, 51%). Private-sector employees represented the largest occupational group (118 cases, 34%). The most common comorbid condition was condyloma acuminatum, 45 patients (50%). In terms of sexual behavior, 62 patients (36%) engaged in receptive sexual activity. Heterosexual orientation was the most frequently reported (176 cases, 51%). Additionally, 205 patients (60%) were HIV-positive. **Conclusion:** This study has provided important characteristic data in mapping the population to the stages of syphilis, especially in the Bali region.

Keywords: descriptive study, sexually transmitted infection, syphilis, *Treponema pallidum*.

Correspondence: Suma Pratiwi Tanoto, Department of Dermatology and Venereology, Faculty of Medicine, Udayana University, Denpasar, Bali, Phone: 082278488074, Email: sumapратиwi@yahoo.com.

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BACKGROUND

Syphilis is an infection caused by the bacterium *Treponema pallidum*, characterized by a wide spectrum of clinical manifestations. According to data from the World Health Organization (WHO), approximately 7.1 million adults aged 15–49 years were infected with syphilis globally in 2020. The prevalence of syphilis has been found to be higher among men who have sex with men.² The quarterly Report on The quarterly Report on Human Immunodeficiency Virus Human Immunodeficiency Virus (HIV), Acquired Immunodeficiency Syndrome (AIDS) and Sexually Transmitted Infections (STIs) for the first quarter of 2023 documented 2,981 cases of early-stage syphilis and 1,144 cases of late-stage syphilis, as determined through laboratory-based diagnostic approaches. Additionally, 1,755 pregnant women were reported to

be infected with syphilis, yet only 818 of them received treatment.³

Data from the Sexually Transmitted Infections Division of the Dermatology and Venereology Outpatient Clinic at Prof. Dr. I.G.N.G Ngoerah General Hospital, Denpasar, from January 2011 to December 2013, showed that among 35 analysed samples, the majority of patients were male (85.7%), while female patients accounted for 14.3%. The proportion of new syphilis cases was 68.6%, whereas 31.4% were recurrent cases. Syphilis predominantly affected males, with the most affected age group ranging from 25 to 44 years. In terms of disease stage, secondary syphilis was the most frequently diagnosed, followed by late latent syphilis, with the majority of cases occurring in male patients.⁴

If left untreated, it can lead to severe complications such as neurosyphilis, ocular syphilis, and congenital syphilis. Primarily transmitted through sexual contact, syphilis is classified as a sexually transmitted infection (STI) and remains contagious across different stages of the disease. Due to its nonspecific symptoms, delayed diagnosis and inappropriate treatment may result in significant health consequences.¹

Delayed diagnosis and treatment of syphilis can lead to more severe manifestations. Therefore, early recognition of syphilis cases is crucial in preventing disease progression. Additionally, studies on the prevalence and characteristics of syphilis patients, particularly in Bali, remain limited. Based on these considerations, this study aims to determine the prevalence and characteristics of syphilis patients at the Dermatology and Venereology Outpatient Clinic of Prof. Dr. I.G.N.G Ngoerah General Hospital, Denpasar, from 2021 to 2023, focusing on new syphilis cases rates and patient characteristics.

METHODS

This study uses a retrospective descriptive research design using total sampling of all syphilis patients, utilizing secondary data from the medical records of patients diagnosed with syphilis who visited the Dermatology and Venereology Outpatient Clinic at Prof. Dr. I.G.N.G Ngoerah General Hospital. The data were obtained from the registry of the Sexually Transmitted Infection Division, covering the period from January 2021 to December 2023. The inclusion criteria consisted of syphilis patients who met at least one of the following conditions: new outpatient visits during period, initial follow-up outpatient visits within the same period, or first post-hospitalization follow-up visits to the clinic. Patients with incomplete medical records were excluded. The research variables included patient characteristics such as age, sex, occupation, comorbid conditions, disease stage, sexual orientation, and sexual behaviour. Sexual behaviour was further classified based on the patient's role during sexual intercourse into receptive (penetrative role), receptive (receiving role), or both. Patient data were analysed using descriptive statistical methods to provide an overview of the study sample. This study was approved by the Institutional Review Board of Prof. Dr. I.G.N.G Ngoerah General Hospital. Patient confidentiality was maintained by anonymizing all patient data during analysis.

This study has received the ethical clearance issued by the Research Ethics Commission Unit of the Faculty

of Medicine Udayana University, with letter number 0641/UN14.2.2.VII.14/LT/2024.

RESULT

This study included 346 samples, with the highest new syphilis cases recorded in 2021, reaching 133 patients (**Table 1**). Syphilis was more frequently diagnosed in males (59%) than in females (41%). The majority of cases occurred in individuals aged 25–44 years, accounting for 174 patients (51%), and among private-sector workers, with 118 patients (34%). The most common comorbid condition was condyloma acuminatum, affecting 45 patients (50%). Regarding sexual behavior, the highest proportion was observed in receptive individuals, with 62 patients (36%) among the homosexual and bisexual groups. However, the most prevalent sexual orientation was heterosexual, reported in 176 patients (51%). Additionally, HIV positivity was identified in 205 patients (59%), making it the most frequently observed co-infection. The most common stage of syphilis was late latent syphilis, found in 211 patients (61%). Table 2 presents a summary of these findings.

Table 1. New Syphilis Cases of Syphilis Patients at the Dermatology and Venereology Clinic, RSUP Prof. Dr. I.G.N.G Ngoerah (2021–2023).

Period	Total Syphilis Cases (n)	New Syphilis Cases (n)
2021	154	133
2022	119	104
2023	125	109
Total	398	346

Table 2. Characteristics of Syphilis Patients at the Dermatology and Venereology Clinic, RSUP Prof. Dr. I.G.N.G Ngoerah (2021–2023)

Characteristic	Amount	Percentage
Gender		
Male	205	59%
Female	141	41%
Age		
5-14 years old	0	0%
15-24 years old	118	34%
25-44 years old	174	51%
>45 years old	54	15%
Occupation		
Private Sector	118	34%
Employee	108	31%
Unemployed	66	30%
Student	54	15%
Comorbid Conditions		
Condyloma Acuminata	45	50%
Molluscum Contagiosum	24	27%
Herpes Simplex	3	3%
Chancroid	4	4%
Non-gonococcal Urethritis	14	16%
HIV Status		
HIV	205	59%
Non-HIV	141	41%
Syphilis Stage		
Primary Syphilis	21	6%
Secondary Syphilis	97	28%
Early Latent Syphilis	14	4%
Late Latent Syphilis	211	61%
Tertiary Syphilis	3	1%
Sexual Orientation		
Heterosexual	176	51%
Bisexual	114	33%
Homosexual	56	16%
Sexual Behavior		
Incirtive	56	33%
Receptive	62	36%
Both	52	31%
Total	346	100%

HIV = Human immunodeficiency virus.

DISCUSSION

Syphilis, it is primarily transmitted through sexual contact, making it a sexually transmitted infection (STI). However, syphilis can also spread through blood transfusion or vertical transmission from an infected

mother to her infant during pregnancy. Often referred to as “the great imitator”, syphilis presents with a wide range of clinical manifestations that can resemble other diseases, making diagnosis challenging.¹ Although syphilis is both preventable and treatable, inadequate management can lead to severe health complications. The infection frequently remains asymptomatic or presents with nonspecific symptoms, further complicating early detection and treatment.²

In 2022, the United States reported 207,255 cases of syphilis, reflecting a 17.3% increase from 2021, marking the highest reported new syphilis cases since 1950, according to the Centers for Disease Control and Prevention (CDC).⁵ In Indonesia, during the first quarter of 2023, 2,981 cases of early-stage syphilis and 1,144 cases of late-stage syphilis were documented. In this study at Prof. Dr. I.G.N.G Ngoerah General Hospital, Denpasar, the number of new syphilis cases was 133 in 2021, 104 in 2022, and 109 in 2023. Several factors may contribute to the increasing number of reported cases, including improved access to healthcare services, heightened patient awareness leading to more frequent testing, and a potential rise in high-risk sexual behaviors influenced by globalization.⁶ Further research is needed to determine the exact causes of this trend.

In this study, the majority of syphilis cases were observed in male patients, accounting for 205 cases. This finding aligns with a study conducted in Africa, which reported that the risk of syphilis is 2–3 times higher among individuals of Caucasian descent and twice as common in males compared to females.¹ Generally, males are at a higher risk of acquiring syphilis, particularly those with high-risk sexual behaviours and individuals within the men who have sex with men (MSM) population. The prevalence of syphilis is notably higher among male sex workers, transgender women, and individuals living with HIV.⁷

The highest incidence of primary and secondary syphilis occurs in individuals aged 20–29 years, with African American individuals being five times more likely to contract syphilis compared to those of Caucasian descent.⁸ This finding is consistent with studies indicating that individuals aged 25–44 years are more susceptible to syphilis. This age group represents the reproductive years, during which sexual activity tends to be higher, contributing to an increased rate of transmission. In this study, age groups were classified into 5-14, 15-24, 25-44, and >45 years, based on age categories commonly used in WHO surveillance reports and previous epidemiological studies. This

classification reflects varying levels of sexual activity and associated risk across different stages of life.

Certain sexual behaviors are associated with a higher risk of syphilis infection compared to the general population. Individuals at greater risk include men who have sex with men (MSM) and those with multiple sexual partners, as syphilis carries a significant risk of reinfection in these groups.⁹ In 2020, the World Health Organization (WHO) reported an increase in syphilis cases among the MSM population, with a global prevalence rise of 7.5% over the past 20 years (95% CI 7.0–8.0%).⁵ This trend aligns with the findings of this study, where bisexual individuals accounted for 114 cases (33%), while homosexual individuals comprised 56 cases (16%).

A study found that HIV infection is associated with an increased risk of various sexually transmitted infections (STIs), with condyloma acuminatum and syphilis being the most frequently reported. This aligns with the findings of this study, where condyloma acuminatum was among the most commonly detected coexisting conditions. Other risk factors include the presence of comorbidities or a history of other STIs, particularly HIV infection.¹⁰ Syphilis and HIV share a strong epidemiological relationship—not only do they exhibit a high prevalence, but syphilis infection is also associated with an increased risk of HIV acquisition. Given this connection, all patients diagnosed with syphilis should be screened for other STIs, including HIV, and vice versa.¹¹ A 2017 study in the United States reported that 60% of primary and secondary syphilis cases occurred among men who have sex with men (MSM), with 46% of these individuals also living with HIV/AIDS.² In the present study, 205 cases (59%) were identified as HIV-positive. Recognizing these risk factors is crucial for ensuring comprehensive screening and early intervention for patients co-infected with HIV.

The secondary stage of syphilis is followed by an asymptomatic phase known as latent syphilis, which is classified into two types: early latent syphilis, occurring when infection has been present for less than one year, and late latent syphilis, occurring when infection has persisted for more than one year.¹² The distinction between these stages is clinically significant, as early latent syphilis carries a higher risk of secondary syphilis relapse and requires different clinical management strategies. The diagnosis of early latent syphilis can be based on seroconversion, clinical symptoms, sexual history, or reactive serological tests.¹³ In this study, late latent syphilis was identified in 211 cases (61%), indicating that these infections had

likely persisted for more than one year. This finding suggests that delayed diagnosis, particularly in primary healthcare facilities, remains a challenge in the early detection and management of syphilis.

The high proportion of late latent syphilis found in this study further underscores the need for strengthened public health strategies, particularly in populations with a high burden of HIV. Patients with HIV are at increased risk of atypical clinical presentations, which may contribute to missed or delayed diagnoses.¹⁴ Moreover, inadequate routine screening, limited awareness of syphilis symptoms, and gaps in partner notification systems may all play a role in the progression from early to late latent stages. Improving screening coverage, integrating HIV–STI services, and ensuring timely follow-up of serological results are essential steps to prevent long-standing undiagnosed infections and to reduce the potential for severe complications such as neurosyphilis.¹⁵

This study has several limitations. First, the retrospective design relies on existing medical records, which may be incomplete or inconsistent, thus limiting the accuracy and comprehensiveness of the data. Second, there is a potential for selection bias, as the study only included patients who presented at a Type A (Type 1) referral hospital, which may not be representative of the broader population. Third, certain variables such as sexual behavior and orientation were self-reported, which could be subject to reporting bias. These limitations should be considered when interpreting the findings and generalizing them to other settings.

This study demonstrates an overall decline in the incidence of syphilis at RSUP Prof. Dr. I.G.N.G Ngoerah Denpasar during the period 2021–2023. The characteristics of syphilis patients vary widely; however, the high prevalence of late latent syphilis and HIV co-infection highlights the need for improved early detection strategies and integrated STI screening protocols. Despite its limitations, such as the retrospective design and potential data bias, the study provides valuable insights into the epidemiology of syphilis in Bali. Public health strategies must be reevaluated to improve access to testing and ensure prompt treatment. Strengthening screening programs and enhancing collaboration between primary and tertiary care facilities could improve clinical outcomes and inform local health policy interventions.

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