



PROFILE OF SYPHILIS PATIENTS AT SANJIWANI REGIONAL GENERAL HOSPITAL, GIANYAR: A RETROSPECTIVE STUDY, 2021–2025

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ABSTRACT

Background: Syphilis remains a major global sexually transmitted infection and may occur without overt clinical manifestations. Data on the characteristics of patients with syphilis at Sanjiwani Regional General Hospital, Gianyar, remain limited.

Methods: This descriptive observational study used a retrospective design and medical record data from patients with syphilis treated at Sanjiwani Regional General Hospital, Gianyar, between January 2021 and December 2025. Total sampling was applied to all patients who met the inclusion and exclusion criteria. Variables included demographic characteristics, disease stage and clinical presentation, serological profile, treatment, and VDRL follow-up. Data were analyzed descriptively. **Results:** A total of 36 patients were analyzed, with a median age of 31 years (range,

19–60 years). Most patients were aged 25–44 years (58.3%), male (61.1%), and residents of Gianyar Regency (86.1%). Late latent syphilis was the most common stage (83.3%), while 52.8% of patients had no active complaints at diagnosis. All patients had reactive TPHA results, with varying baseline VDRL titers. Most patients (80.6%) received three weekly doses of benzathine penicillin G, and 61.1% had at least one documented follow-up VDRL result. **Conclusion:** Patients with syphilis at Sanjiwani Regional General Hospital were predominantly men aged 25–44 years, with late latent syphilis as the most common stage. The high proportion of patients without active complaints highlights the importance of serological testing in identifying syphilis in this population.

Keywords: syphilis, VDRL, patient characteristics

INTRODUCTION

Syphilis is a sexually transmitted infection caused by *Treponema pallidum* and remains a global public health concern. Its clinical manifestations vary by stage, ranging from primary lesions and systemic manifestations in secondary syphilis to a latent phase without clinical evidence of active disease. Current management guidelines emphasize that staging should incorporate the clinical history, physical examination, and serological findings.¹

The World Health Organization (WHO) estimated that approximately 8 million people aged 15–49 years acquired syphilis in 2022.² Because the infection may remain asymptomatic, syphilis continues to pose challenges for case detection and disease control. Recent European surveillance data have also shown an increase in reported syphilis cases, particularly among younger men, with stage distributions varying across regions.³

The diagnosis of syphilis relies primarily on the combined interpretation of treponemal and nontreponemal serological tests. Treponemal tests provide evidence of exposure to *T. pallidum* and generally remain reactive after treatment, whereas nontreponemal tests such as VDRL provide quantitative titers that are useful for assessing disease activity and for post-treatment monitoring. Reliance on either type of serological test alone may lead to misclassification of syphilis status.⁴

Benzathine penicillin G (BPG) remains the treatment of choice for syphilis, with the regimen determined by disease stage. Primary, secondary, and early latent syphilis are treated with a single intramuscular dose of 2.4 million units of BPG, whereas late latent syphilis or latent syphilis of unknown duration requires a total dose of 7.2 million units administered as three weekly doses.¹

Hospital-based studies in Bali have reported varying characteristics among patients with syphilis. A study conducted at Bali Mandara General Hospital from 2020 to 2022 found that most patients were aged 25–44 years and were male, with early latent syphilis as the most common stage.⁵ In contrast, a study at Prof. dr. I.G.N.G. Ngoerah General Hospital from 2021 to 2023 identified late latent syphilis as the predominant stage.⁶ A recent study at Wangaya Regional General Hospital from 2023 to 2025 also reported a very high proportion of latent-stage disease.⁷

Outside Bali, a study in Ternate found a predominance of adult men and early latent syphilis.⁸ These variations suggest that patient characteristics and stage distributions may differ according to the population, screening practices, documentation of infection history, and characteristics of the healthcare facility.

Data on the characteristics of patients with syphilis in Gianyar Regency remain limited. This study therefore aimed to describe the demographic, clinical, and serological characteristics, treatment patterns, and serological follow-up of patients with syphilis at Sanjiwani Regional General Hospital, Gianyar, from 2021 to 2025.

METHODS

This was a descriptive observational study with a retrospective design using secondary data from the medical records of patients with syphilis at Sanjiwani Regional General Hospital, Gianyar, from January 2021 to December 2025. Total sampling was used to include all patients who met the study criteria.

The inclusion criteria were patients with a diagnosis of syphilis documented in the medical records during the study period. Medical records with incomplete data for the study variables were excluded. For patients with more than one visit, data from all visits were consolidated by patient identity so that each patient was counted only once.

Study variables included age, sex, place of residence, stage of syphilis, presentation at diagnosis, TPHA result, baseline VDRL titer, treatment, and follow-up VDRL testing. Age was categorized as <25, 25–44, and ≥45 years. Place of residence was grouped by regency/city and district according to the address recorded in the medical record. Presentation at diagnosis was categorized as no active complaints, screening or referral, cutaneous manifestations, or active genital manifestations. Baseline TPHA results were recorded as reactive or nonreactive, while baseline VDRL was recorded according to the first documented quantitative titer. Treatment was categorized according to the regimen administered. Serological follow-up was defined as the availability of at least one VDRL result after the baseline test. The number of follow-up VDRL tests

was also recorded; however, changes in titer were not formally classified as treatment response because the number and timing of tests were not uniform across patients.

Data were analyzed descriptively. Categorical variables are presented as frequencies and percentages, while age is presented as the median and range. No association analyses or hypothesis testing were performed.

RESULTS

A total of 36 patients with syphilis who met the study criteria were analyzed. The median age was 31 years (range, 19–60 years). The largest age group was 25–44 years, comprising 21 patients (58.3%), followed by <25 years in 9 patients (25.0%) and ≥45 years in 6 patients (16.7%). Men were more common than women, accounting for 22 patients (61.1%) and 14 patients (38.9%), respectively (Table 1).

Table 1. Demographic characteristics of patients with syphilis

Characteristic	N	%
Age		
<25 tahun	9	25,0
25–44 tahun	21	58,3
≥45 tahun	6	16,7
Sex		
Male	22	61,1
Female	14	38,9

Most patients resided in Gianyar Regency (31 patients; 86.1%). The remaining patients were from Denpasar City and Bangli Regency (2 patients each; 5.6%) and Buleleng Regency (1 patient; 2.8%). At the district level, the largest proportion came from Gianyar District (25.0%), followed by Sukawati (19.4%), Tegallalang (13.9%), and Blahbatuh (11.1%) (Table 2).

Table 2. Distribution of patients with syphilis by place of residence

Place of residence	N	%
Regency/City		
Gianyar	31	86,1
Denpasar	2	5,6
Bangli	2	5,6
Buleleng	1	2,8
District		
Gianyar	9	25,0
Sukawati	7	19,4
Tegallalang	5	13,9
Blahbatuh	4	11,1
Tampaksiring	3	8,3
Payangan	2	5,6
Ubud	1	2,8
Tembuku	1	2,8
Kintamani	1	2,8
Seririt	1	2,8
Denpasar Timur	1	2,8
Denpasar Selatan	1	2,8

Late latent syphilis was the most common stage, occurring in 30 patients (83.3%). Secondary syphilis was identified in 5 patients (13.9%), while primary syphilis was found in 1 patient (2.8%). At diagnosis, 19 patients (52.8%) had no active complaints and 11 (30.6%) were identified through screening or referral. Cutaneous manifestations were present in 5 patients (13.9%), while active genital manifestations were present in 1 patient (2.8%) (Table 3).

Table 3. Clinical characteristics of patients with syphilis

Clinical characteristic	N	%
Syphilis stage		
Primary	1	2,8
Secondary	5	13,9
Late latent	30	83,3
Presentation at diagnosis		
No active complaints	19	52,8
Screening/referral	11	30,6
Cutaneous manifestations	5	13,9
Active genital manifestations	1	2,8

All patients had reactive TPHA results. Baseline VDRL titers ranged from 1:4 to 1:512. The most frequent titer was 1:32, observed in 7 patients (19.4%), followed by 1:512 in 6 patients (16.7%). Titers of 1:64, 1:128, and 1:256 were each found in 5 patients (13.9%) (Table 4).

Table 4. Serological characteristics of patients with syphilis

Serological test	N	%
Baseline TPHA		
Reactive	36	100,0
Baseline VDRL titer		
1:4	4	11,1
1:8	2	5,6
1:16	2	5,6
1:32	7	19,4
1:64	5	13,9
1:128	5	13,9
1:256	5	13,9

Serological test	N	%
1:512	6	16,7

Most patients received benzathine penicillin G (BPG) 2.4 million units intramuscularly once weekly for three doses (29 patients; 80.6%). A single intramuscular dose of BPG 2.4 million units was given to 6 patients (16.7%), while doxycycline was given to 1 patient (2.8%). Twenty-two patients (61.1%) had at least one follow-up VDRL result after baseline, whereas 14 patients (38.9%) had no documented follow-up VDRL result. Of the 22 patients with follow-up testing, 11 (30.6%) had one follow-up VDRL result and 11 (30.6%) had more than one (Table 5). During serological follow-up, eight patients treated with benzathine penicillin G showed a ≥ 4 -fold decline in VDRL titer from baseline.

Table 5. Treatment and serological follow-up of patients with syphilis

Variable	N	%
Treatment		
BPG 2.4 million units IM, 3 weekly doses	29	80,6
BPG 2.4 million units IM, single dose	6	16,7
Doxycycline	1	2,8
VDRL follow-up		
No follow-up result	14	38,9
1 follow-up result	11	30,6
>1 follow-up result	11	30,6

BPG: *benzathine penicillin G*; TPHA: *Treponema pallidum hemagglutination assay*; VDRL: *Venereal Disease Research Laboratory*.

DISCUSSION

This study showed a consistent pattern across clinical characteristics, disease stage, and the circumstances in which patients were identified. Most patients were aged 25–44 years (58.3%) and

were male (61.1%). The most notable finding was the predominance of late latent syphilis (83.3%), together with the high proportions of patients without active complaints (52.8%) and those identified through screening or referral (30.6%). Thus, the study population was characterized less by the typical manifestations of primary or secondary syphilis and more by infections identified through serological evaluation in the absence of active clinical manifestations.

Patients aged 25–44 years constituted the largest age group in this study. A similar pattern was reported at Bali Mandara General Hospital, where 64.3% of patients were aged 25–44 years, and at Prof. dr. I.G.N.G. Ngoerah General Hospital, where 51% were in the same age group.^{5,6} A study in Ternate likewise found that most cases occurred among adults aged 19–44 years (97%).⁸ These findings indicate that syphilis patients attending different healthcare facilities are predominantly young and working-age adults. WHO estimated that approximately 8 million new syphilis infections occurred among people aged 15–49 years in 2022, while European surveillance data for 2024 showed that reported syphilis cases were most frequent among men aged 25–34 years.^{2,3} This is broadly consistent with the predominance of younger adults in the present study. However, because sexual behavior, exposure history, and sexual networks were not assessed, the age distribution observed here cannot be directly attributed to specific behavioral factors.

Men accounted for 61.1% of patients in this study, similar to the 61.5% reported at Wangaya Regional General Hospital and close to the proportions reported at Bali Mandara General Hospital (57.1%) and Prof. dr. I.G.N.G. Ngoerah General Hospital (59%).^{5,6,7} In contrast, the Ternate study reported a substantially higher proportion of men (90.9%).⁸ At the population level, 2024 data from the European Centre for Disease Prevention and Control (ECDC) showed that syphilis was reported more often in men than in women and that, among cases with available information on mode of transmission, most occurred among men who have sex with men.³ These population-level data, however, cannot explain the male predominance in the present study because sexual behavior and sexual orientation were not analyzed. Differences in the proportion of male patients across studies may reflect variation in patient populations, screening practices, and referral patterns among healthcare facilities.

Most patients (86.1%) resided in Gianyar Regency. This likely reflects the location of Sanjiwani Regional General Hospital within Gianyar Regency, where the majority of patients receiving care would be expected to reside. These findings describe the place of residence of patients attending Sanjiwani Regional General Hospital and should not be interpreted as the prevalence of syphilis in Gianyar Regency.

The most prominent finding in this study was the predominance of late latent syphilis, which accounted for 83.3% of cases. This proportion was higher than the 61% reported at Prof. dr. I.G.N.G. Ngoerah General Hospital, but was consistent with the findings from Wangaya Regional General Hospital, where 96.2% of patients were in the latent stage.^{6,7} Late latent syphilis was also the most frequent stage among pregnant women at Mangusada Regional General Hospital, accounting for 54% of cases.⁹ In contrast, early latent syphilis was the most common stage at Bali Mandara General Hospital (35.7%) and in the Ternate study (56.6%).^{5,8} These differences indicate that stage distribution is not uniform even across hospitals. Classification as early latent syphilis requires evidence that infection was acquired within a defined period; in asymptomatic patients without such evidence, the disease is classified as late latent syphilis or latent syphilis of unknown duration.¹ Accordingly, the completeness of symptom history, partner history, previous serological results, and documentation of the timing of exposure may directly influence stage distribution in retrospective studies.

The distribution of syphilis stages also varies across countries. An analysis of 5,527,399 cases in mainland China showed that the proportion of latent syphilis increased from 20.41% in 2004 to 82.95% in 2019.¹⁰ In contrast, ECDC data for 2024 showed that among cases with a known stage, approximately 9% were classified as late latent syphilis, while most were early latent (33%), primary (31%), or secondary (25%).³ These differences indicate that the predominance of late latent syphilis observed in the present study is not necessarily representative of other populations. Variation in stage distribution may be related to screening practices, timing of diagnosis, characteristics of patients presenting to healthcare facilities, and the completeness of clinical and serological history used for staging.

The predominance of late latent syphilis in this study was consistent with the high proportion of patients without active complaints. Overall, 52.8% had no active complaints and 30.6% were identified through screening or referral, while only a small proportion presented with active cutaneous or genital manifestations. WHO notes that syphilis may remain asymptomatic or undiagnosed, while latent syphilis is characterized by reactive serological tests in the absence of clinical manifestations of primary, secondary, or tertiary syphilis.^{1,2} These findings underscore the importance of serological testing for detecting syphilis in patients without active clinical manifestations.

All patients had reactive TPHA results. Baseline VDRL titers ranged from 1:4 to 1:512. The most frequent titer was 1:32, observed in 7 patients (19.4%), followed by 1:512 in 6 patients (16.7%). Titers of 1:64, 1:128, and 1:256 were each found in 5 patients (13.9%) (Table 4).

Treatment patterns in this study closely reflected the distribution of disease stages. Most patients (80.6%) received BPG 2.4 million units intramuscularly once weekly for three doses, 16.7% received a single dose, and one patient received doxycycline. The high proportion receiving three doses was consistent with the predominance of late latent syphilis (83.3%). CDC guidelines recommend a single 2.4-million-unit dose of BPG for primary and secondary syphilis, whereas late latent syphilis or syphilis of unknown duration is treated with a total of 7.2 million units administered as three weekly doses.¹ Thus, the findings demonstrate not only the treatment most frequently prescribed, but also general consistency between stage classification and the regimen selected for most patients.

Serological follow-up required particular caution in interpretation. Only 22 patients (61.1%) had at least one VDRL result after baseline, while 38.9% had no documented follow-up result. The latter group should not automatically be considered lost to follow-up because a medical record-based study cannot determine whether patients received testing elsewhere. From the perspective of available hospital records, however, these findings indicate incomplete documentation of serological follow-up in more than one-third of patients.

Interpretation of serological response in this study must take into account differences in disease stage, baseline titer, and timing of testing. In a cohort of 571 patients, Gong et al. reported

that the median time to serological response differed by stage, at approximately 55 days for primary syphilis, 57 days for secondary syphilis, and 117 days for latent syphilis. A slower response was also reported among patients with lower baseline titers.¹¹ These findings indicate that changes in VDRL titer cannot be interpreted without considering disease stage, baseline titer, and the interval between tests.

Another cohort study of 761 patients with late latent syphilis or syphilis of unknown duration also found that serological response varied according to baseline titer, with lower response rates among patients with low baseline titers.¹² This supports the decision in the present study to describe serological follow-up primarily in terms of the availability and number of documented VDRL results rather than formally classifying treatment response.

In this study, eight patients treated with benzathine penicillin G showed a ≥ 4 -fold decline in VDRL titer from baseline. A ≥ 4 -fold decline in a nontreponemal titer represents a clinically meaningful serological change and is consistent with an adequate serological response to treatment. However, the timing and frequency of VDRL testing were not uniform, and some patients showed fluctuating titers; therefore, this finding should not be used to estimate the overall effectiveness of treatment.⁴

Overall, patients with syphilis at Sanjiwani Regional General Hospital were predominantly working-age adults, men, and patients with late latent syphilis, with most cases identified in the absence of active clinical manifestations. Compared with other studies, age and sex distributions were relatively similar, whereas stage distributions varied. These differences may reflect variation in patient populations, screening and referral practices, and the completeness of clinical documentation.

STUDY LIMITATIONS

This study has several limitations. Its retrospective design made the analysis dependent on the completeness of medical record documentation. As a single-center study, the findings may not represent the characteristics of patients with syphilis across Gianyar Regency as a whole. In

addition, the number and timing of follow-up VDRL tests were not standardized, precluding a standardized assessment of serological response to treatment.

CONCLUSION

Patients with syphilis at Sanjiwani Regional General Hospital, Gianyar, from 2021 to 2025 were predominantly men and individuals aged 25–44 years. Late latent syphilis was the most common stage, and most patients either had no active complaints or were identified through screening or referral. All patients had reactive TPHA results, with a wide range of baseline VDRL titers. Most patients received three weekly doses of benzathine penicillin G, consistent with the predominance of late latent syphilis. More than half had documented serological follow-up, although the number and timing of follow-up tests varied.

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