

Syphilis: Is it Back with a Bang?

Abstract

Background: Syphilis was brought under control with the advent of penicillin. However, in recent times, a rise in the incidence of syphilis has been reported by Centers for Disease Control and Prevention (CDC). **Aim:** To study the clinical and epidemiological profile of patients with syphilis attending sexually transmitted infection (STI) clinic at tertiary care center. **Materials and Methods:** Observational, cross-sectional analysis of sociodemographic, clinical, and investigational data of all syphilis patients visiting STI clinic from August 2019 to July 2021 was done and analyzed. **Results:** Out of 1330 STI patients that attended the clinic, 15.04% ($n = 200$) were diagnosed with syphilis, among them 72% ($n = 144$) were males, and 28% ($n = 56$) were females, with male-to-female ratio of 2.5:1. Of these 24.5% ($n = 49$) had primary, 44.5% ($n = 89$) had secondary, 30.5% ($n = 61$) had latent, and 0.50% ($n = 1$) had congenital syphilis. Among secondary syphilis patients, rash was the most common presentation seen in 43 patients, followed by condyloma lata in 30, palmoplantar syphilis in 17, oral mucous patch in 3, and iridocyclitis in 3 patients. Human immunodeficiency virus (HIV) was positive in 16.5% ($n = 33$). Herpes genitalis was the most common coinfection among 25 patients who were diagnosed with mixed venereal disease. RPR titer was positive in all 200 patients, with 1:16 titer being most common. **Conclusion:** India is experiencing a new trend in the prevalence of syphilis, mainly due to the changes in risk behavior, misconceptions, and social stigma associated with STIs, improved laboratory diagnosis, and increased public awareness. Particularly secondary and latent stages have shown a rising trend over the past few years. Awareness about safe sexual practices and contraception is very important to control the current resurgence.

Keywords: Human immunodeficiency virus, resurgence, sexually transmitted diseases, syphilis

Introduction

Syphilis simulates every other disease. It is the only disease necessary to know. One then becomes an expert dermatologist, an expert laryngologist, an expert alienist, an expert oculist, an expert internist, and an expert diagnostician. In the last decade, there has been a marked resurgence of syphilis worldwide, despite the availability of effective treatments and previously reliable prevention strategies. Untreated syphilis is associated with detrimental health outcomes; therefore, both effective prevention strategies and treatment of this systemic disease have important short-term and long-term public health implications.

Materials and Methods

An observational, cross-sectional study was conducted in a tertiary care center to study the clinical and epidemiological profile of patients with syphilis attending sexually transmitted infection (STI) clinic, over

a period of two years from August 2019 to July 2021, after approval from ethics committee. Inclusion criteria were patients of all age groups and either sex with clinical diagnosis of primary/secondary/tertiary/latent or congenital syphilis.

Complete and relevant clinical history was recorded. Muco-cutaneous, general physical, and systemic examination were carried out for all patients. Clinical photographs of the patient were taken. Human immunodeficiency virus (HIV), rapid plasma reagin (RPR), and Treponema pallidum hemagglutination assay (TPHA) were performed in all patients.

Based on history, clinical features, and serology, diagnosis of syphilis was made. Latent syphilis was diagnosed by positive serology during screening along with the absence of clinical signs and symptoms.

In the case of suspected mixed venereal disease, relevant investigations pertaining to the clinical presentations such as gram stain, Tzanck smear, or serological tests such as HSV IgM and IgG were done.

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Results and Observations

A total of 1330 patients attended STI clinic during the study period. Of which 15.04% ($n = 200$) were diagnosed with syphilis. Among these 200 patients with syphilis, the mean age of presentation was 30.9 ± 1.89 years, ranging from 2-days-old to 64-years-old. Majority of the patients belonged to the age group of 21–30 years. Males ($n = 144$) outnumbered females ($n = 56$) in the study with a male-to-female ratio of 2.5:1. Of these 65% ($n = 93$) of males were manual laborers, and 10% ($n = 15$) were long-distance drivers and 87% ($n = 48$) of females were housewives, and 11% ($n = 6$) of them were manual laborers. Majority of our patients belonged to upper-lower socioeconomic class according to the modified Kuppaswamy socioeconomic scale, 2019.^[1] In total, 63% ($n = 126$) patients were married, of which 73 were males, and 53 were females. 41% ($n = 23$) of females were antenatal and had positive RPR serology.

Out of 144 males, 12% ($n = 16$) of males were homosexual, and 8% ($n = 12$) of males were bisexual, while homosexuality and bisexuality were not reported among females.

Out of 200 patients, 50% ($n = 100$) of patients gave a history of sexual exposure either in the form of extramarital or premarital contact. Among patients who had history of sexual exposure, 64% ($n = 64$) gave history of contact with known partners while 36% ($n = 36$) all of whom were males and gave a history of paid contact with commercial sex workers.

Out of 200 patients, 70% ($n = 140$) of patients had monogamous relationships while 29.5% ($n = 59$) had polygamous relationships. History of anal intercourse was present in 28% ($n = 56$) patients and 83% ($n = 166$) patients practiced unprotected sexual intercourse.

Primary chancre was present in 24.5% ($n = 49$) of patients [Figure 1], 44.5% ($n = 89$) patients had secondary, 30.5% ($n = 61$) patients had latent, and 0.5% ($n = 1$) patient had congenital syphilis. One patient had primary with secondary syphilis. Among 49 patients with primary chancre, 2% ($n = 1$) had multiple chancres over glans and 2% ($n = 1$) had chancre situated over the tongue. Among 89 patients with secondary syphilis, a rash was seen in 48.3% ($n = 43$), condyloma lata in 33.7% ($n = 30$), palmoplantar syphilis in 19.1% ($n = 17$), mucous patch in 3.4% ($n = 3$), and iridocyclitis in 3.4% ($n = 3$) patients.

Among 43 patients with rash, 30% ($n = 13$) had papulosquamous rash, 28% ($n = 12$) had papular rash, 23% ($n = 10$) had maculopapular rash, 14% ($n = 6$) had roseolar rash, and 5% ($n = 2$) had lichenoid rash which was pruritic. [Figure 2]

VDRL was positive in 30.5% ($n = 61$) of patients who were referred to our department. These patients had no



Figure 1: (a) Primary chancre over coronal sulcus in a male; (b) Primary chancre over labia majora in a female

clinical manifestations of syphilis and were diagnosed as latent syphilis.

There was a single case of congenital syphilis diagnosed in a 2-day-old girl child who had RPR titer of 1:32. There was no clinical manifestation of syphilis in child or her mother. Her mother had a positive RPR titer of 1:8. Mother had an uneventful antenatal period.

There were no cases of tertiary syphilis in the study.

Among 200 patients with syphilis, 56% ($n = 112$) had lymphadenopathy. Inguinal lymphadenopathy was present in 82.1% ($n = 92$) of patients, 18.9% ($n = 20$) had generalized lymphadenopathy. Among 49 primary chancre patients, 40.8% ($n = 20$) patients had unilateral, 30.6% ($n = 15$) patients had bilateral, and 28.6% ($n = 14$) had no inguinal lymphadenopathy. Among 89 patients with secondary syphilis, 86.5% ($n = 77$) had lymphadenopathy, of which 64% ($n = 57$) had inguinal lymphadenopathy, and 22.5% ($n = 20$) had generalized lymphadenopathy.

Concurrent STIs, along with syphilis were present in 24% ($n = 48$) patients, of which 52% ($n = 25$) patients had herpes progenitalis, 21% ($n = 10$) patients had chancroid, 15% ($n = 7$) had genital molluscum contagiosum, and 12% ($n = 6$) patients had concurrent genital warts.

HIV serology was positive in 16.5% ($n = 33$) of patients, of which 15.2% ($n = 5$) were females and 84.8% ($n = 28$) were males. Atypical manifestation in people living with HIV (PLHIV) included multiple primary chancre, extragenital primary chancre, iridocyclitis, florid nodular syphilids [Figure 3].

RPR titers were positive in all 200 patients, titer ranged from 1:4 to 1:512. Most common titer was 1:16 positive in 24.5% ($n = 49$) of patients, and 1% ($n = 2$) patients has high titer of 1:512.



Figure 2: Various presentations of secondary syphilis (a) Corymbose rash (b) Annular syphilis (c) Lichenoid rash (d) Palmoplantar syphilis (e) Condyloma lata over prepuce (f) Perianal condyloma lata (g) Oral mucous patch



Figure 3: Various presentations in people living with HIV (a) Multiple chancres over prepuce (b) Diffuse nodular syphilis

Discussion

There has been a dramatic change in the epidemiological profile of STDs all around the world. Syphilis has maintained its constant prevalence rate despite the

availability of effective treatment^[2] But in the last two decades, there has been a resurgence of syphilis in India^[3] as well as in Western countries.^[4]

The prevalence of syphilis among STI clinic attendees during the study period was 15.04%, while the annual incidence of syphilis observed by Shah *et al.*^[5] out of the total STIs was 10.6% and 11.2% during the years 2013 and 2014, respectively. This shows that there is an upward rising trend in the number of cases. The prevalence of syphilis was high compared to the 2.0% prevalence of syphilis found in Hochberg *et al.*,^[6] 7.36% in Jain *et al.*,^[7] and 5.6% in Sasidharanpillai *et al.*^[8]

Males predominated in this study, similar to those seen in studies by Jain *et al.*,^[7] Shah *et al.*,^[5] and Sasidharanpillai *et al.*^[8] The marked male predilection noted could be due to their high-risk behavior and also because they seek treatment early. The low attendance of females may be due to social and cultural restrictions or the asymptomatic nature of the disease in females.

Most common age group having syphilis was 21–30 years while the next common age group was 31–40 years. This

indicates the precocity of sexual initiation at a younger age as a risk factor for STDs.^[9]

Majority of our patients were literate, similar to the studies conducted by Jain *et al.*^[7] and Shah *et al.*^[5] This was in contradictory to the fact that STDs are associated with lower education, leading to misunderstanding or poor understanding and self-care ability among patients.^[10]

Daily wage laborers and drivers, who were in majority in the study, should be considered a high-risk group. As they migrate to areas away from home in search of work; as a result, they tend to stay away from their partners and thus can engage in high-risk sexual behavior.

Commercial sex workers (CSWs) form an important source of infection in males, highlighting the continued need for targeted intervention. 74 out of these 100 patients are giving history of contact and unprotected intercourse. This further reinforces the fact that unsafe sexual practices are the leading cause of the increasing STI burden, including HIV and syphilis.

Primary chancre in females is seldom seen, as it may go unnoticed, making it an issue, especially among CSWs, as they may keep transmitting infections to their clients.

HIV seropositivity was observed in 16.5% ($n = 33$) of the study, but it was as high as 24.5% in Shah *et al.*^[5] study. In general, the prevalence of syphilis is 6 times higher in HIV-positive respondents compared to HIV-negative ones.

Out of the 33 patients with HIV-syphilis coinfection. One male PLHA (People living with HIV/AIDS) patient had multiple primary chancres. Also, all 3 patients who had syphilitic iridocyclitis in the study were HIV reactive. This suggests rapid progression of disease in HIV-infected patients as compared to those who were HIV non-reactive.

Nine out of twenty eight males with HIV-syphilis coinfection were MSMs (Men who have sex with men) suggesting that syphilis infection and re-infection rates in PLHIV MSMs are high. Consequently, prevention and direct interventions for MSM should be carried out, including social policies aimed at improving their living conditions, reducing stigma, and facilitating closer ties with health services.^[11]

Latent syphilis is present in 30.5% of patients ($n = 61$) reinforced that screening plays a vital role in diagnosing and providing early treatment to clinically asymptomatic patients.

Twenty three out of fifty six females in the study were antenatal. This argues for the need for strict testing of syphilis during pregnancy because when untreated, there are serious consequences for both the mother and the fetus.^[12]

There was one case of congenital syphilis in our study, diagnosed in a 2-day-old female child with RPR titer fourfold higher than her mother, which was acquired as a result of vertical transmission. There were no muco-cutaneous abnormalities in the baby. Congenital syphilis can cause miscarriage, stillbirth, or early infant death, and infected infants can experience lifelong physical and neurological problems.

Conclusion

This study highlights the fact that, there is a need to look beyond conventional diagnostic methods to curb the exponentially increasing cases, sex education, promoting safe sex, and rapid diagnostic kits which are not only quick and easy to evaluate but also cost-effective and targeted campaigns to high-risk groups like MSM, FSW (Female sex workers), and PLHIV. The current resurgence of syphilis, showing an increasing trend in the number of cases year after year has to be controlled before it gets out of hand!

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Saleem SM, Jan SS. Modified Kuppuswamy socioeconomic scale updated for the year 2019. *Indian J Forensic Community Med* 2019;6:1-3.
2. Jain VK, Dayal S, Aggarwal K, Jain S. Changing trends of sexually transmitted diseases at Rohtak. *Indian J Sex Transm Dis AIDS* 2008;29:23.
3. Ray K, Bala M, Gupta SM, Khunger N, Puri P, Muralidhar S, *et al.* Changing trends in sexually transmitted infections at a Regional STD Centre in north India. *Indian J Med Res* 2006;124:559-68.
4. Schumacher CM, Ellen J, Rompalo AM. Changes in demographics and risk behaviors of persons with early syphilis depending on epidemic phase. *Sex Transm Dis* 2008;35:190-6.
5. Shah BJ, Karia DR, Pawara CL. Syphilis: Is it making resurgence?. *Indian J Sex Transm Dis AIDS* 2015;36:178-81.
6. Hochberg CH, Schneider JA, Dandona R, Lakshmi V, Kumar GA, Sudha T, *et al.* Population and dyadic-based seroincidence of herpes simplex virus-2 and syphilis in southern India. *Sex Transm Infect* 2015;91:375-82.
7. Jain A, Mendiratta V, Chander R. Current status of acquired

- syphilis: A hospital-based 5-year study. *Indian J Sex Transm Dis AIDS* 2012;33:32-4.
8. Sasidharanpillai S, Bindu V, Riyaz N, Beegum Sherjeena PV, Rahima S, Chandrasekhar N. Syphilis among sexually transmitted infections clinic attendees in a tertiary care institution: A retrospective data analysis. *Indian J Dermatol Venereol Leprol* 2014;80:161-2.
 9. Paiva V, Calazans G, Venturi G, Dias R, Grupo de Estudos em População, Sexualidade e Aids. [Age and condom use at first sexual intercourse of Brazilian adolescents]. *Rev Saude Publica* 2008;42(Suppl 1):45-53.
 10. Gomes NC, Meier DA, Pieri FM, Alves E, Albanese SP, Lentine EC, *et al.* Prevalence and factors associated with syphilis in a Reference Center. *Rev Soc Bras Med Trop* 2017;50:27-34.
 11. Brignol S, Dourado I, Amorim LD, Kerr LR. Vulnerability in the context of HIV and syphilis infection in a population of men who have sex with men (MSM) in Salvador, Bahia State, Brazil. *Cad Saude Publica* 2015;31:1035-48.
 12. Carvalho I da S, Brito RS de. Sífilis congênita no Rio Grande do Norte: *Epidemiol E Serviços Saúde* 2014;23:287-94.