

Syphilis: Is it making resurgence?

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Abstract

Background: Syphilis, the “great imitator,” presents with a wide range of mucocutaneous and systemic manifestations, which can mimic many more diseases. Though there has been a rising prevalence of viral sexually transmitted infections (STIs), syphilis is not an uncommon diagnosis. **Aims:** To study the recent trend of acquired syphilis in the patients attending STI clinic. **Materials and Methods:** Retrospective analysis of all the syphilis patients registered with STI clinic of our institute from January 2013 to December 2014 was done. Thorough sociodemographic, clinical, and investigational data were assessed and compared with the annual incidence of last 4 years. **Results:** Of the total 1010 STI patients who attended the STI clinic, 110 cases were diagnosed as syphilis. There were 78 (70.9%) males and 32 (29.1%) females. Twenty-five (22.7%) patients were men who have sex with men (MSM). Primary syphilis was diagnosed in 28 (25.5%), secondary in 47 (42.7%), and latent in 35 (31.8%) cases. Lymphadenopathy was present in 55 (50%) patients with syphilis. Mixed infection was diagnosed in 29 (26.4%) patients of whom genital herpes was the most common. Twenty-seven (24.5%) patients were human immunodeficiency virus (HIV) reactive. **Conclusion:** Incidence of syphilis has shown a rising trend over past few years. The major risk factors considered are the HIV infection and homosexual behavior.

Key words: Acquired syphilis, human immunodeficiency virus, resurgence, sexually transmitted infections

INTRODUCTION

In the 1970s and 1980s, syphilis and chancroid were the main causes of genital ulcer disease (GUD) while the viral GUDs such as genital herpes were rare.^[1] In India, it was recorded under “other minor sexually transmitted infections (STIs).” The spread of human immune deficiency virus (HIV) since the late 1980s with subsequent behavioral change has resulted in significant alterations in STI epidemic patterns, and similar to developed countries, there has been a significant rise in viral STIs^[2,3] and a relative fall in the incidence of traditional infections.

Few studies in India have shown a rise in the prevalence of syphilis^[4,5] which is also shown

by Western studies as well.^[6,7] The number of cases of primary syphilis diminished significantly ($P < 0.001$), with a concomitant rise in secondary and early latent syphilis.^[4] Syphilis simulates every other disease. In view of its latency and myriad presentations, it is being underdiagnosed in our clinical set up because of the use of broad spectrum antibiotics for common ailments and easy availability of them over the counter.^[8,9]

This retrospective study aims to evaluate the current trend in the epidemiology of acquired syphilis and other STIs in the patients attending STI clinic at our institute.

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MATERIALS AND METHODS

In this institute-based study, analysis of all STI patients attending STI/reproductive tract infection (RTI) clinic, during January 2013 to December 2014 was done. Out of the total STI patients, the records of syphilis patients were analyzed thoroughly.

The recorded clinical history (sociodemographic features - age, sex, occupation, education, and marital status) and clinical examination (characteristic of chancre, morphology of rash, stage of syphilis, lymphadenopathy, and concomitant STI) were analyzed in every case of syphilis.

The results of HIV, rapid plasma reagin (RPR), and *Treponema pallidum* hemagglutination assay (TPHA) were scrutinized in every syphilis patient. The results of cerebrospinal fluid (CSF) test were analyzed in the patients with HIV co-infection and those with CNS or ophthalmic manifestations. Other relevant investigations such as Gram stain, Giemsa stain, potassium hydroxide examination, and herpes simplex virus IgM and IgG used for the diagnosis of other STIs were analyzed.

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.

The data of the present study were analyzed, collated, and compared with the yearly data of syphilis patients of our institute from 2009 to 12.

RESULTS

Out of the total 3970 patients attending STI/RTI clinic during the study period, 1010 patients were diagnosed as having STI. Genital herpes (56.2%) was the most common STI diagnosed followed by condylomata acuminata (15.3%), molluscum contagiosum (13.2%), and syphilis (10.9%) [Table 1].

Out of the total 110 patients with syphilis, 78 (70.9%) were males and 32 (29.1%) females, male: female ratio being 2.4:1. The most common age group in which syphilis was diagnosed was 21–40 years. Forty-five (57.7%) of male patients were married, and 22 (68.8%) of female patients were married. Regarding obstetric history from females, 13 were multiparous, 5 were primiparous, and 2 females also had a history of spontaneous abortion in the first trimester. Four ANC cases were diagnosed as latent syphilis in the first trimester and 1 ANC case as secondary syphilis in the third

trimester. Seven (6.4%) syphilis patients were a divorcee. Seventy-three (66.4%) patients belonged to lower socioeconomic class. The majority of our male patients were laborers and factory workers (61.5%), followed by farmers (23.1%), servicemen (10.3%), and businessmen (5.1%). The female patients comprised mostly of housewives (84.4%). Only 26.4% patients had their secondary education, 33.6% below primary level, 22.7% up to primary level, and 17.3% were illiterate. 63.6% ($n = 70$) patients gave a history of exposure. 22.7% ($n = 25$) patients were men who have sex with men (MSM), all in the age group of 18–35 years. Out of the 25 MSMs, 7 were bisexual, 4 were married and cohabiting with a spouse.

42.7% ($n = 47$) patients were diagnosed as having secondary syphilis. Most of them presented with asymptomatic rash and condylomata lata, [Table 2], [Figure 1]. Other features included palmoplantar syphilides ($n = 9$), split papules ($n = 7$), mucous patches ($n = 3$), syphilitic cornea ($n = 3$), and lues maligna ($n = 3$) [Figure 2]. Thirty-five (31.8%) patients were diagnosed as having latent syphilis based on positive serology. Twenty-eight (25.5%) patients were diagnosed as having primary syphilis.

Inguinal lymphadenopathy was present in 55 (50%) patients with syphilis [Table 2].

Table 1: Pattern of STIs

STI	Number of patients (%)
Genital herpes	568 (56.2)
Condylomata acuminata	155 (15.3)
Molluscum contagiosum	133 (13.2)
Syphilis	81 (8)
Syphilis+other STI	29 (2.9)
Gonorrhoea	23 (2.3)
Chancroid	15 (1.5)
Others*	6 (0.6)
Total	1010

*Donovanosis, lymphogranuloma venereum, and genital scabies.
STI=Sexually transmitted infection

Table 2: Presentations of syphilis

Diagnosis	Number of patients (%)	
	Clinical features	Lymphadenopathy
Primary syphilis - 28 (25.5)	Single chancre - 21 (75)	13 (46.4)
	Multiple chancre - 3 (10.7)	
	Mixed infection - 14 (50)	
Secondary syphilis - 47 (42.7)	Condylomata lata - 25 (53.2)	42 (89.4)
	Asymptomatic rash - 21 (44.7)	
	Palmoplantar syphilides - 9 (19.1)	
	Split papules - 7 (14.9)	
	Mucous patches - 3 (6.4)	
	Syphilitic cornea - 3 (6.4)	
	Lues maligna - 3 (6.4)	
Mixed infection - 15 (31.9)		

Twenty-one patients with syphilis presented with generalized lymphadenopathy (suboccipital, cervical, axillary, epitrochlear, and inguinal). Two of the HIV-positive patients had persistent generalized lymphadenopathy.

Twenty-nine (26.4%) patients of syphilis presented with co-infections [Table 3]. Genital herpes was the most common co-infection diagnosed in 13 patients, followed by condylomata acuminata (8) [Figure 3], molluscum contagiosum (5), and chancroid in 3 patients [Figure 2].

Out of the total 110 patients with syphilis, 27 (24.5%) patients were seropositive for HIV 1. Of the 27 HIV-positive patients, 18 patients were diagnosed as secondary syphilis, 5 were primary, and

4 patients were diagnosed as latent syphilis. Thirteen patients (48.1%) with HIV co-infection (27) presented with condylomata lata.

Eighty (72.7%) patients showed RPR reactivity, the significant titers ranging from as low as 1:8 to as high as 1:512; 1:16 being the most common titer (RPR titer of 1:8 or more was considered as true reactive). TPHA test was reactive in 93 (84.5%) patients. CSF analysis was done in 20 patients with HIV co-infection (including one patient presenting with meningeal symptoms and one patient had iridocyclitis). None of the patients showed abnormal CSF for neurosyphilis.

Out of the total 110 patients with syphilis, partners of 43 patients were evaluated, of which 11 were diagnosed as syphilis.

The annual incidence of syphilis out of the total STIs was 10.6% and 11.2% during the year 2013 and 2014, respectively [Table 4].

DISCUSSION

For the past 15–20 years viral STIs have shown the rising trend.^[2,3,10] In this study, viral STIs are outnumbering bacterial STIs, but syphilis has definitely shown a rising trend at our institute over past 6 years, mainly secondary and latent stages.

Comparison with the annual incidence of syphilis at our institute during the year 2009–12 and with the study by Jain *et al.*^[11] is shown in [Figure 4]. The annual incidence of syphilis in the study by Jain *et al.* maintained a rate of about 7%, where at our



Figure 1: Roseolar rash of secondary syphilis (left) and condylomata lata on penis in an human immunodeficiency virus-positive patient (right)



Figure 2: Palmoplantar syphilides in a patient with secondary syphilis (left) with concomitant chancroid (right)



Figure 3: Condylomata lata in perianal region (left) and condylomata acuminata on glans and prepuce with concomitant annular syphilides on scrotum (right)

Table 3: Co-infection with syphilis

Co-infection with syphilis	Number of patients (%)
Genital herpes	13 (44.8)
Condylomata acuminata	8 (27.6)
Molluscum contagiosum	5 (17.2)
Chancroid	3 (10.3)
Total	29

Table 4: Annual incidence of syphilis

Year	Number of syphilis cases	Total STI cases	Percentage of total
2009	33	395	8.4
2010	38	410	9.3
2011	44	432	10.2
2012	38	378	10.1
2013	53	499	10.6
2014	57	511	11.2
Total	263	2625	10

STI=Sexually transmitted infection

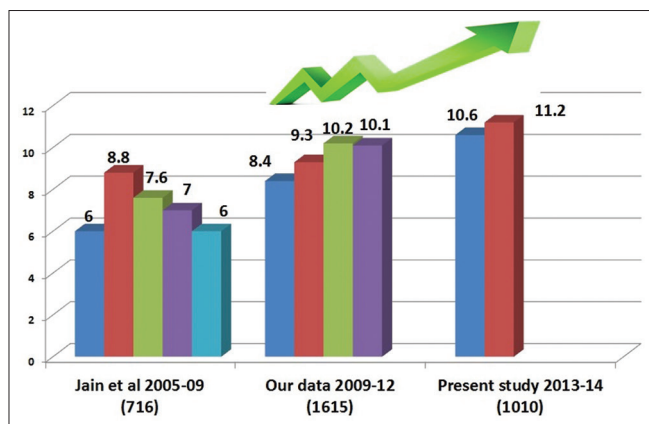


Figure 4: Comparison of annual incidence of syphilis (brackets show the number of sexually transmitted infection patients)

institute; it showed a rising trend from 8.4% in 2009 to 11.2% in the year 2014. [Table 4]

The rising trend of syphilis is noticed in Ireland, where there has been a 118% increase in cases over the three years.^[7] Similar observation of re-emergence of syphilis is made by Pialoux *et al.* in France^[12] and Schumacher *et al.*^[6] in the United States.

Annual new HIV case detection rate has gone down significantly as per the National AIDS Control Organization (NACO) publication of 2014.^[13] But in this study, there were 27 (24.5%) syphilis cases with HIV seropositivity. This is the cause of concern. As many of these cases presented with atypical and rare manifestations of syphilis such as lues maligna and few patients presenting exclusively with palmoplantar syphilides. Twenty-five (53.2%) patients with secondary syphilis (47) presented with condylomata lata. This indicates a changing trend wherein oro-genital and peno-anal contacts are being increasingly practiced, besides peno-vaginal contact.^[11]

One more significant observation made in this study is that study population comprised a sizeable number of MSMs, which may be due to targeted intervention programs run by NACO and involvement of various nongovernmental organizations serving this population.

Long-term studies are required to reinforce the association of syphilis with various parameters observed in this study and see the resurgence of this age-old disease in our country. Any STI is associated with significant morbidity and it is associated with a

lot of economic implications as the young productive population is afflicted.^[4,14]

The limitations of this study include - unavailability of DGI in our institute during the study period.

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Conflicts of interest

There are no conflicts of interest.

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