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Original Research Article

Retrospective analysis of demographic factors and changing pattern of clinical features of acquired syphilis at a tertiary care center in South India

P. Sivayadevi[1]*, Heber Anandan[2]

[1]Department of Dermato Venereoleprology, Government Medical College, Thanjavur, Tamil Nadu, India
[2]Dr. Agarwal's Healthcare Limited, Tamil Nadu, India

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***Correspondence:**
Dr. P. Sivayadevi,
E-mail: drsivayadevi@gmail.com

ABSTRACT

Background: Syphilis presents with a wide range of mucocutaneous and systemic manifestations, which can mimic many other diseases. The pattern of acquired syphilis is changing in recent years because of widespread use of antibiotics and HIV infection which leads to under diagnosis. Aim was to study the demographic factors and changing pattern of clinical features of acquired syphilis.
Methods: Retrospective analysis of all cases of sexually transmitted infections registered in the Department of Venereology, Thanjavur Medical College from January 2013 to December 2017 was done. The data regarding epidemiological, clinical and investigational details were recorded and analyzed for changing trends in incidence, pattern and clinical presentation of syphilis.
Results: Of the total 14,672 cases attended the STI clinic, 140 patients were diagnosed as having syphilis. There were 101 (79.4%) males and 39 (27.8%) females. Primary Syphilis was diagnosed in 18 (12.25%), Secondary syphilis in 38 (27.14%) and latent in 84 (60%) cases. Palmoplantar syphilide was the most common skin manifestation seen in 20 (52.63%) cases of secondary syphilis. 11 (7.85%) patients was human immunodeficiency virus (HIV) reactive.
Conclusions: Our study indicates an increasing trend in the prevalence of syphilis cases in last 5 years with a rise in early symptomatic syphilis demanding steps to increase awareness among the general population.

Keywords: Acquired syphilis, Palmoplantar syphilide, Condyloma lata, Latent syphilis, Rapid plasma reagin test

INTRODUCTION

Syphilis is a sexually transmitted disease caused by infection with a spirochete bacterium, *Treponema Pallidum* subspecies, Pallidum. It is a systemic disease with the chronic course because of spirochetemia which occurs early during the evolution of primary lesion. The clinical features range from florid manifestations involving skin and other organs to complete asymptomatic latency which is diagnosed by serology.

The classical lesion of primary syphilis called Hunterian chancre is a single, painless ulcer with indurated base and rolled border with the floor covered with dull red granulation tissue. But the typical clinical features may be absent in almost half of the patients. Studies have shown that multiple chancres were seen in one-third of HIV negative and two-thirds of HIV positive patients.[1] Other variations like painful and non- indurated ulcers were also reported. The clinical manifestations of secondary syphilis are varied with skin rash being the most common presenting feature. They may be macules,

papules, macules-papules, papulosquamous, annular or follicular. The rash is generalized in a bilateral symmetrical distribution with the special predilection for palms and soles.

Syphilis simulates many diseases and is being underdiagnosed in our clinical setup given its latency and myriad manifestations. Rampant use of broad-spectrum antibiotics for common ailments and easy availability of them over the counter and coexisting HIV infection alters the clinical manifestation and course of syphilis.[2]

Aim

- To analyze and identify the changes in the epidemiological and clinical trend of syphilis over a period of five years.

METHODS

The baseline data of this retrospective study was the clinical records of the patients who attended STI clinic of Thanjavur Medical College from January 2013 to December 2017. Details of socio-epidemiological factors like age, sex of the patient, marital status, sexual history and referral details were noted. Clinical examination particulars like staging of syphilis, morphology of chancre, skin rash, lymphadenopathy and presence of any other concomitant STI were noted. Non treponemal screening test with rapid plasma regain was done in all patients with internal quality control. Patients who were RPR reactive were subjected to confirmatory testing with treponema pallidum hemagglutination assay by one step immunoassay Rapid test kit. Latent syphilis was diagnosed by positive RPR and TPHA tests along with the absence of clinical signs and symptoms and no treatment history with injection Benzathine Penicillin. Patients whose RPR test was positive with TPHA negative and no evidence of syphilis on clinical examination were considered to be biological false positive. HIV testing was done in all patients. The data collected were tabulated and analyzed statistically. The categorized variables were summarized as proportions and percentage.

RESULTS

A total of 14,672 cases attended the STI clinic from January 2013 to December 2017. Of these, 140 patients were diagnosed as suffering from syphilis. Table 1 shows the annual distribution of syphilis cases. There is an increasing trend in the number of cases from 2013-2017 except for a decrease in the year 2016.This increase in number of cases showed mild correlation (p= 0.067).

The year wise breakup of primary, secondary and latent syphilis showed that latent syphilis was the most common presentation (60%).

Table 1: Annual distribution and year wise break up of syphilis cases.

Year	Primary syphilis	Secondary syphilis	Latent syphilis	Total syphilis cases
2013	-	3	12	15
2014	-	3	14	17
2015	4	10	23	37
2016	3	5	20	28
2017	11	17	15	43
Total	18 (12.85%)	38 (27.14%)	84 (60%)	140

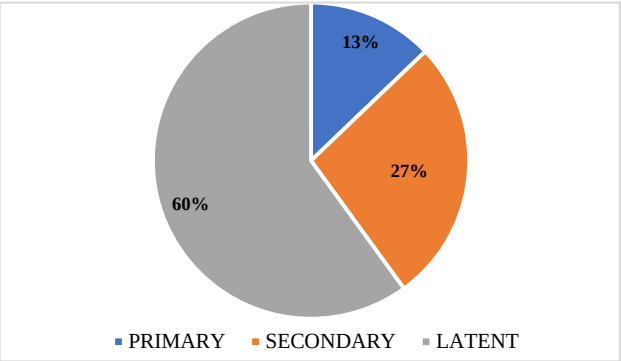

Figure 1: Breakup of primary, secondary and latent cases.

This is followed by secondary syphilis with an incidence of 38 (27.14%) cases. There was an increase in the number of secondary syphilis from 2013-2015 and more number of cases (17) were reported in 2017. Primary syphilis was the least common among all the syphilis cases (18-12.85%) every year but the number of cases were increasing from nil cases in 2013 and 2014 to 11 cases (61%) in 2017 which is statistically significant on analysis by chi-square test (p=0.024). There is an increase in incidence of latent syphilis from 2013-2016 with a decrease in 2017 during which the number of symptomatic early syphilis cases were high (Figure 1).

Of 140 confirmed cases 101 (72.14%) were males and 39 (27.8%) were female patients (Table 2).

Age wise analysis of male patients showed that 33 among 101 male patients were in third decade and 31 (30.7%) cases were in the fourth decade.83 out of 101 (82.8%) were in the age group from 21-50 years.6 male patients of whom 4 were cases of secondary syphilis were within 15-20 years.

Analysis of female patients for distribution of syphilis cases revealed 16 (41%) were in the third decade and 20 (51.2%) were in age group 30-50 years. Thus 36 among 39 (92.3%) cases were in the sexually active group.

Marital status and sexual history analysis revealed 66 (65.34%) among 101 male patients was married and 34

(87.17%) among 39 female patients were married. Among 66 married male patients 46 (69.69%) patients gave a history of premarital and extramarital contact. Among 35 unmarried male patients, 32 (91.42%) patients came with history of sexual contact of whom 43.75% had homosexual contact. Most of the married female patients 31 (91.17%) denied any history of premarital or extramarital contact.

Table 2: Age and sex wise breakup of syphilis cases.

Age (yrs)	Males				Females			
	Primary	Secondary	Latent	Total	Primary	Secondary	Latent	Total
11-20	1	4	1	6	-	2	1	3
21-30	10	13	10	33	-	4	12	16
31-40	3	6	22	31	-	4	8	12
41-50	2	3	14	19	-	-	8	8
51-60	1	1	5	7	-	-	-	-
>60 yrs	1	1	3	5	-	-	-	-
Total	18	28	55	101	-	10	29	39

Table 3: Clinical features of syphilis cases.

Diagnosis	Clinical features	Cases (%)
Primary Syphilis 18 (12.85%)	Single chancre	13 (72.22)
	Multiple chancre	5 (27.77)
	Lymphadenopathy	6 (33.33)
Secondary syphilis 38 (27.14%)	Asymptomatic Maculopapular rash	8 (21)
	Condyloma lata	7 (18.42)
	Palmoplantar syphilide 1) Isolated manifestation (12) 2) Along with other manifestation (8)	20 (52.63)
	Annular syphilide	3 (7.89)
	Nodular syphilide	1 (2.6)
	Oral mucosal involvement	1 (2.6)
	Lymphadenopathy	13 (34.2)
	Coexisting primary chancre	4

Among the 100 married male and female patients 17 couples were there of whom five couples were symptomatic with two manifestations of secondary syphilis in both. Three couples reported with primary syphilis in female patients while male patients were in the secondary syphilis stage. Rest of the couples (12) were in the latent stage.25 married patients had non reactive marital partner whereas marital status was not known for 41 patients.

15 among 84 (17.8%) patients with latent syphilis were diagnosed while screened for visa purpose. Other reasons for which patients were tested include ANC screening, blood transfusion screening, HRG screening and screening for sake of reactive partner.

The clinical presentation of primary and secondary syphilis was tabulated (Table 3) and analyzed. Among 18 patients who were diagnosed as primary syphilis 13 (72.22%) presented with single chancre where as multiple chancres were present in 5 patients (27.77%)

Analysis of 38 secondary syphilis patients revealed palmoplantar syphilide as the most common (52.65%) manifestation of secondary syphilis. In 12 patients it was the only clinical manifestation. Next common manifestation was asymptomatic maculopapular rash which was seen in 8 (21%) patients followed by condyloma lata 7 (18.42%). Two out of 5 antenatal cases were suffering from secondary syphilis. Pregnancy ended with delivery of a intrauterine death baby in an antenatal patient who had condyloma lata as the sole manifestation who reported to hospital only at the time of delivery (Figure 2 to 4).

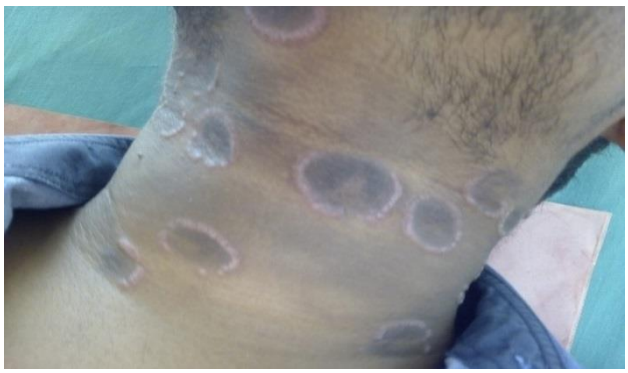

Figure 2: Annular syphilide in a patient with secondary syphilis.

Figure 3: Palmar and plantar syphilide in a patient with secondary syphilis.

Figure 4: Condylomata lata in a patient with secondary syphilis.

Eleven patients (7.85%) of syphilis were also HIV reactive. Other confections were herpes genitalis, condyloma acuminata and scabies.

DISCUSSION

Though viral infections are the most common cause of sexually transmitted disease in the world, Syphilis has a constant prevalence rate.[3] The apparent increase in viral STIs may be attributed to the indiscriminate use of broad-spectrum antibiotics which reduces the prevalence of bacterial infection and the ability of virus infections to establish a persistent and latent infection. Asymptomatic viral shedding as seen in herpes genitalis and subclinical infection as seen in viral wart leads to spread through sexual contact during the asymptomatic period.

Various studies have shown a rise in the prevalence of syphilis in recent years in India and worldwide.[4] In our study, the incidence of primary syphilis increased from nil cases in 2013 and 2014 to the gradual increase in the incidence of primary syphilis cases in 2015 and 2016. But there is a dramatic increase in the incidence of primary syphilis cases in 2017 which is statistically significant. A similar analysis of secondary syphilis showed a steady increase in the number of the case from 2013 to 2016 with a dramatic increase in number in 2017. Also, we have seen antenatal cases with secondary syphilis with intrauterine death of the fetus in 2017. This is, in contrast, to study by Pamil et al who had reported a steady decreasing trend of cases in a five years study conducted at a tertiary care center in North India.[5] This increase in the incidence of early syphilis in our study urges the need for upgradation of health services and mandatory RPR testing at every trimester during the antenatal checkup.

Statistical analysis of latent syphilis revealed it to be the most common type of syphilis with increasing number of cases from 2013-2016, except in 2017 where symptomatic early syphilis cases outnumbered latent syphilis. The significant number of latent syphilis cases were diagnosed through screening for visa purpose.

Gender analysis of our study showed most of the patients was males. Majority of the patients were in the age group 20-50 years as has been seen in other studies which is mainly because of high sexual activity in this age group.[5] Most of the female patients were married and denied sexual contact outside marriage relation whereas more than 50% of males had the history of either premarital or extramarital contact. About 50% of unmarried male patients contracted the disease through MSM contact.

The single painless indurated genital ulcer was the most common presentation in primary syphilis seen in 72% of cases. Multiple changes were seen in 27.7% of cases.[6,7] Coexisting primary and secondary syphilis were seen in four cases which may be due to faster progression of primary to secondary syphilis.

In secondary syphilis in contrast to the textbook description of non-itchy maculopapular rash as the most common presentation, our study revealed palmoplantar syphilide as the most common presentation (32.65%) which mostly presented as isolated manifestation. Other presentations were maculopapular rash and condyloma lata. Uncommon manifestations like annular, nodular[8-10] and lichenoid syphilide were also noted which necessitates the importance of considering secondary syphilis as a differential diagnosis and the need to create awareness among dermatologist about the uncommon presentations.[11]

CONCLUSION

Thus the epidemiological trend of syphilis has changed over the years. The incidence of symptomatic early cases is on the increase. Awareness and health care seeking behavior have to be promoted among the public. The importance of this study lies in highlighting the need for monitoring the epidemiological trend of the disease which facilitates better prevention and control measures.

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