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Original research article

Re-emergence of syphilis: A clinico-epidemiological study in a tertiary care centre

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Abstract

Introduction: Syphilis is an oldest STI, caused by T. pallidum. Prevalence of syphilis ranges from 2.7 to 26.6%.Syphilis continues to be a major public health concern globally, with an estimated 12 million new infections annually. Individuals infected with HIV are eight times more likely to become infected with syphilis than the general population. A retrospective, hospital-based clinico-epidemiological study of syphilis was carried out in order to follow-up changing trends in syphilis.

Aims and Objectives:

a) To determine prevalence and clinical pattern of syphilis in patients visiting STI clinic of a tertiary care Hospital.
b) To determine association between HIV and syphilis in such patients.

Materials and Methods: We conducted a hospital based prospective study on patients attending STI clinic of our tertiary care hospital for a period of one year.

Results: Out of 18 confirmed syphilis cases, 10 were males, 5 were females and 3 were transgenders. Male: female ratio was 2:1. Age of the patients ranged from 18 to 42 years.6 were primary syphilis, 4 were secondary and 8 were latent syphilis.10 patients were married. 3 male patients were found to be homosexuals. Promiscuous behaviour was noted in 11 patients. HIV seropositivity was seen in 7 patients. All the 18 patients showed VDRL titre ranging from 1:8 to 1:64 and TPHA positive.

Conclusion: The importance this study lies in monitoring the epidemiologic trends of disease and facilitates better prevention and control measures.

Keywords: Syphilis, Treponema pallidum, HIV

Introduction

Syphilis is an oldest STI ,well defined by Stokes as an infectious disease due to T. pallidumof great chronicity; systemic from the outset; capable of involving practically every structure of the body in its course; distinguished by florid manifestations on one hand and years of completely asymptomatic latency on the other; able to simulate many diseases in the fields of medicine and surgery; transmissible to offspring in man and to laboratory animals,treatable to the point of presumptive cure[1].Prevalence of syphilis ranges from 2.7 to 26.6%[2].Syphilis continues to be a major public health concern globally, with an estimated 12 million new infections annually[3].Individuals infected with HIV are eight times more likely to become infected with syphilis than the general population[4].

Prevalence and clinical pattern of syphilis is changing because of availability of good laboratory diagnosis and treatment and increased health awareness, but it still remains a major public health problem. Decreasing prevalence of bacterial sexually transmitted infections (STIs) and an increasing prevalence of viral STIs reflect rampant use of antibiotics and asymptomatic bacterial infections[5, 6, 7].

Prevalence of sexually transmitted infections shows regional variations.The clinico-epidemiological study of syphilis not only helps to follow-up changing trends in syphilis but also to assess the effectiveness of control programs. Various epidemiological studies report a diminishing prevalence of syphilis including other bacterial STIs and a rising incidence of viral STIs[8].However, a resurgence of syphilis has been observed and reported by some[9, 10].

Hence, syphilis continues to be a major STI and its epidemiological trends need surveillance for effective control. A retrospective, hospital-based clinico-epidemiological study of syphilis was carried out in order to follow-up changing trends in syphilis.

Aim and Objectives

a) To determine prevalence and clinical pattern of syphilis in patients visiting STI clinic of a tertiary

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care Hospital.

b) To determine association between HIV and syphilis in such patients.

Materials and Methods

We conducted a hospital based prospective study on patients attending STI clinic of our tertiary care hospital for a period of one year and diagnosed 18 cases of syphilis. Among which 6 were primary, 4 were secondary and 8 were latent. A record was made on their demographic data, the site of lesions, duration of symptoms, risk factors, HIV status after taking informed consent from each patient. Cases were confirmed by serological tests; both VDRL and TPHA were tested in all the 18 patients.

Results

Out of 18 confirmed syphilis cases, 10 were males, 5 were females and 3 were trans genders; the male: female ratio was 2:1. Age of the patients ranged from 18 to 42 years. 10 patients were married, and of these married patients, 8 patients gave history of either pre or extra marital sexual contact. There was no history of blood transfusion in the past in any of the patient. 3 male patients were found to be homosexuals.Promiscuous behaviour was noted in 11 patients.[Table-1]

Patientsdiagnosed were agricultural workers (5), students (4)and labourers (6). All the females were housewives.Significantly, 5 patients of latent syphilis did not give any history of primary chancre.

Table 1: Clinical presentation of syphilis

Parameter	Primary syphilis	Secondary syphilis	Latent syphilis
Number of patients	6	4	8
Number of male patients	5	3	2
Promiscuity number	5	2	4
Married patients' number	5	1	4
Clinical presentation number	Primary chancre 6 Multiple chancre 3	Genital chancre 4 Skin rash 3 Palmoplantarlesions 3	Positive serology 8
Lymphadenopathy number	4	4	0
HIV positivity number	2	3	2
Total number of patients=18			

All the 18 patients showed VDRL titre ranging from 1:8 to 1:64 and TPHA positive. CSF VDRL was positive in single patient of secondary syphilis who was on ART.

HIV seropositivity was seen in 7 patients of which 4 were on ART.These included 3 cases of secondary syphilis, 2 cases of primary syphilis with multiple large primary chancres and 2 cases of latent syphilis.

One among the patients with secondary syphilis developed Jarisch-Herxheimer reaction following treatment with intramuscular injection of 2.4 million IU benzathine penicillin, which was treated symptomatically.

8 cases of latent syphilis were diagnosed incidentally while investigating for infertility in females, screening of commercial sex workers, seropositive promiscuous males and transgenders. Except 3 of 8 cases of latent syphilis, all had history of genital ulcers a few years back.

All cases were treated with intramuscular injection of benzathine penicillin adequately and lesions subsided.VDRL titres came down during follow up. Relapse of syphilis infection is more likely in HIV positive patient and careful follow up is required.

Fig 1: Picture showing psoriasiform lesions of secondary syphilis

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Fig 2: Picture showing Right inguinal lymphadenopathy with genital lesions in secondary syphilis

Discussion

Among the 18 cases of syphilis, 10 cases were males, 5 were females and 3 were transgenders. Patients ranged from age group of 18 to42years,though most of them were young sexually active between 18 to 30 years. In our study, most of the patients were males. This might be due to higher social stigma of reporting to STI clinics in females. The majority of patients were in age group of 18-40 years as has been seen in other studies also and is mainly because of high sexual activity in this age group[14].Agricultural workers, studentsand labourers constituted the majority of patients. Most of the females were housewives. In another study on the epidemiological profile of STDs,occupational profile of the patients was found to be more or less similar to our study.[15]

In secondary syphilis, patients presented most commonly with itchy maculo-papular rash and psoriasiform lesions with chancre. This may be due to inadequate treatment in primary stage or faster progression of primary to secondary stage. This is in agreement with the findings in other studies[14, 16, 17].

Significantly, 5 patients of latent syphilis did not give any history of primary chancre.This may suggest either syphilis d'emblee or more likely not having noticed the primary lesion due to mild/asymptomatic chancre or hidden chancre, that is, intra meatal or cervical lesion or extragenital lesion. The unwillingness to report the primary lesion due to fear or shame is also a possibility. Hence, firm steps should be taken to increase social awareness for early reporting of the condition and to prevent progression and also complications of syphilis[17].

Of the 7cases who had coinfection with HIV,2 cases were primary,3 secondary syphilis and 2 latent.Syphilis in HIV patients presents with atypical features, high rate of asymptomatic primary syphilis, proportionately more patients present with secondary syphilis, early neurological and ophthalmic involvement[11, 12].In our study among 4 cases of secondary syphilis 3 cases were HIV positive of which one case had neurological involvement which suggests progression of the disease in seropositive patients. In this study sexual contact is the major mode of transmission of syphilis and HIV which again insists on education regarding strict condom usage[13].

Syphilis in patients infected with HIV can present in atypical or severe forms, such as ulcerative skin lesions, persistent chancres, gummatous disease, ocular disease and neurosyphilis[18-23].One study showed that individuals infected with HIV have multiple chancres and are more likely to experience Jarisch-Herxheimer reaction and another showed that concomitant genital ulcers were more common in patients with Secondary syphilis and HIV which is observed in this study[19-20].The manifestation of syphilis in HIV infected patients is almost similar with those without HIV infection [34].Some of the differences include, HIV-positive patients tend to have more than one chancre, a larger and deeper primary lesion, higher rate of asymptomatic primary syphilis, more aggressive secondary syphilis and increase rate of early neurological involvement[34,35].

STIs may increase the risk of HIV acquisition via interruption of mucosal barriers and increased viral shedding[26, 24, 25].Due to these increasing rates of syphilis and the higher likelihood of atypical and severe presentation, routine periodic screening (2-4 times annually) of persons infected with HIV has been recommended[23, 26-28].

Both syphilis and HIV infections are part of sexually transmitted diseases. Sexual contact is one of the mode of transmissions for both infections, thus co-infection is perhaps common[29].All Patients in the present study acquired both HIV and syphilis through sexual contact.Hence outbreaks of syphilis have been reported in many parts of the world. In our study 3 patients were homosexuals of which 2 were HIV infected patients.Studies from developed countries like United States and United Kingdom have showed that increasing cases of syphilis were detected among men who had sex with men (MSM) and HIV-infected populations[30, 31].In Asia, syphilis and HIV co-infection in China is also noted, a similar finding in which MSM is a high-risk population for both infection[32].Recent study from Brazil also describes the same finding[33]. Perhaps, MSM is at high-risk population for syphilis and HIV co-infection[29].

HIV and syphilis affect similar patient groups and coinfection is common. All patients presenting with syphilis should be offered HIV testing and all HIV-positive patientsshould be regularly screened for syphilis. Detection and treatment of syphilis can, therefore, help to reduce HIV transmission[35].

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Diagnosis is generally made with serology but the clinician should be aware of the potential for false-negative serology in both primary and, less commonly, in secondary syphilis.
All HIV-positive patients should be treated with a penicillin-based regimen that is adequate for the treatment of neurosyphilis. Relapse of infection is more likely in theHIV-positive patient and careful follow-up is required[35].

Conclusion

Syphilis, a great mimicker has re-emerged in response to behavioural changes. With the spread of HIV epidemic, atypical mucocutaneous manifestations of secondary syphilis may pose problems in the diagnosis. Unless there is a concerted global and politically supported public health drive to reduce the transmission of syphilis, it will continue to lead substantial morbidity and further fuel to HIV pandemic.
Our data implicates, the need for more HIV and STI prevention programs for transgenders & homosexuals, improved information on symptom recognition, STI screening and treatment services. A good support system from the society will also enable the transgender community to come forward for health care services without the fear of being marginalized.
As the rates of syphilis rise among the HIV-infected population, ongoing vigilance inScreening and treatment is required in addition to further examination of coinfection interactions.
The importance of such studies thus lies in monitoring the epidemiologic trends of disease and facilitates better prevention and control measures.

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