

Occurrence of Syphilis in Pregnant women of the Lakhimpur district of Assam, India

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Abstract:

Lakhimpur district is a boarder district of Assam and the gateway to Arunachal Pradesh. This is the area where intra state buses are available (with Arunachal Pradesh), local bus stop, Railway Station and airport are also available which indicates the peoples communications in Lakhimpur district of Assam. Because of that we have selected Lakhimpur district as our study area. In our study it was found that the normal community may also have STIs (STDs) due to human's own behaviour so, we can not specify any community as high risk group or non high risk group for STIs. In our study pregnant women were selected to check syphilis by RPR test during their routine checkups at North Lakhimpur Civil hospital. As because of syphilis pregnant women suffers spontaneous abortion, stillbirth, non-immune hydrops, intrauterine growth restriction, perinatal death etc. It was found that 0.99 % pregnant women were infected with syphilis. And maximum of them from the aged group 21-30 Years where positivity percentage was 67.88 %. During pre-test or post-test counselling of each partner individually, it was found that they or their husband had multiple sex partners. The positive patients were referred to the sukraksha clinic/STI clinic of North Lakhimpur Civil Hospital, Lakhimpur, Assam for their treatment and counselling.

Key words: STI, STD, RPR, Suraksha Clinic, high risk etc.

Introduction :

Syphilis is an infectious disease cause by bacterial antigen of *Treponema pallidum*. The main routes of this disease are non-protective sexual relation, mother to fetus at the time of pregnancy or birth, infectious blood transfusion etc [6]. High risk group's peoples are more vulnerable for syphilis as well as HIV types diseases as the routes of these diseases are almost same. Sex workers, police personals, track drivers, migratory peoples etc are includes in high risk groups as per NACO guidelines. Use of condoms may prevent the transmission of it. Based on the symptoms of syphilis, it is classified in four grouped namely Early or primary syphilis, Secondary syphilis, Latent syphilis and Tertiary syphilis. In primary syphilis patients develops sores in genital organ and/or mouth which may hard and painless [6]. In secondary syphilis rashes may develops on palms of the hands and soles of the feet or in whole body. Patients may show moist warts in the groin, white patches on the inside of the mouth, swollen lymph glands, fever, and weight loss. In latent syphilis patient never develops any symptoms. And the tertiary syphilis is a develop stage of primary, secondary and latent syphilis where patient develops severe problems with the heart, brain, and nerves that can result in paralysis, blindness, dementia, deafness, impotence, and even death if it's not treated. Spontaneous abortion, stillbirth, non-immune hydrops, intrauterine growth restriction, and perinatal death etc are common problem for a pregnant women who suffered from syphilis and this can be prevent by early diagnosis and treatment [5]. Our study was tried to check how importance to test pregnant women for syphilis to control this problem.

The first syphilis outbreak was occurred in Europe in 1494/1495 in Naples, Italy, during a French invasion. In the year 1917 a Canadian film was released on syphilis to aware the people. As per WHO 12 million people were suffered from syphilis in 1999 and out of which 90 % were from developing countries. And this indicates that the study of syphilis is how important.

Materials and Methods :

1. Study area and study population- Our study area covers the whole Lakhimpur district of Assam as it is the one of the important bordering district of Assam. Which is surrounded by Itanagar of Arunachal Pradesh and Dhemaji & Sonitpur districts of Assam. People can visit Lakhimpur district by bus, air or train. Intra state/district bus (to Arunachal Pradesh and other districts of Assam) and intra state/district flights are available here which indicates this district daily introduces with new face.
2. Sample collection- After getting work permission from the ethical committee of joint director of health services of Lakhimpur district Samples were collected from the patients (Pregnant women) who visited the North Lakhimpur Civil hospital for their check-up during pregnancy . As the Civil Hospital is located at the centre of the district, specialist doctors are available here and is a government hospital, all categories patients visit this hospital. Some of the suspected (high risk group) husband's serum samples were also collected during their visit to hospital with their wife. The high risk group was considered based on the report from their wife after counselling. Before collection of blood samples consent was obtained from both husbands and wiefs for allowing to test. The duration of the sample collection was December 2012 to May 2013, a six month study.

Blood samples were collected from the patients in sterile, clean and plain test tubes. Which were placed in test tube rack for 15-20 minutes for clot. After clotting the blood samples, samples were centrifuged at 3000 rpm for 15 minutes to get clear serum sample. And centrifuged serum samples were transferred to another test tube for RPR test procedure.

3. Test Procedure- Modified VDRL antigen and microparticulate carbon particles of reagent react with 'reagin' of serum samples and flocculate. Which was identified by visible black clumps macroscopically against white background.

Positive and negative controls were used in each sample to compare with test samples. Positive samples were retested by serum dilution for semi quantitative test with 1:2, 1:4, 1:8 and 1:16. The data was analyse in the excel sheet of Microsoft office.

Result : Out of all the Pregnant womens and their husbands (only risk behaviour's Male) samples 0.99 % pregnant womens were found positive and 20 % husbands were found RPR Positive (as only high risk goup's husband sample were tested). It was come to notice that 1.16 % Pregnant were positive which age ranges were 11-20 Years where 28.47 % women were included. The other age ranges were 21-30 Years aged pregnant women 67.88 %, 31-40 Years 3.31 %, 41-50 Years 0.33 % and 50 Years to above was nil. And from the age group 21-30 Years 0.97 % were positive [Figure 1]. Out of all pregnant women reported for test 99 % were house wife and only 1 % were both service holder and business worker [Figure 3].

During our study all the positive patients and their partners were referred to Suraksha Clinic (STI Clinic) for the treatment. The Suraksha Clinic is the chamber for service of sexually transmitted infections established by Assam state AIDS control society (ASACS) in each government district hospital s of Assam.

Figure:

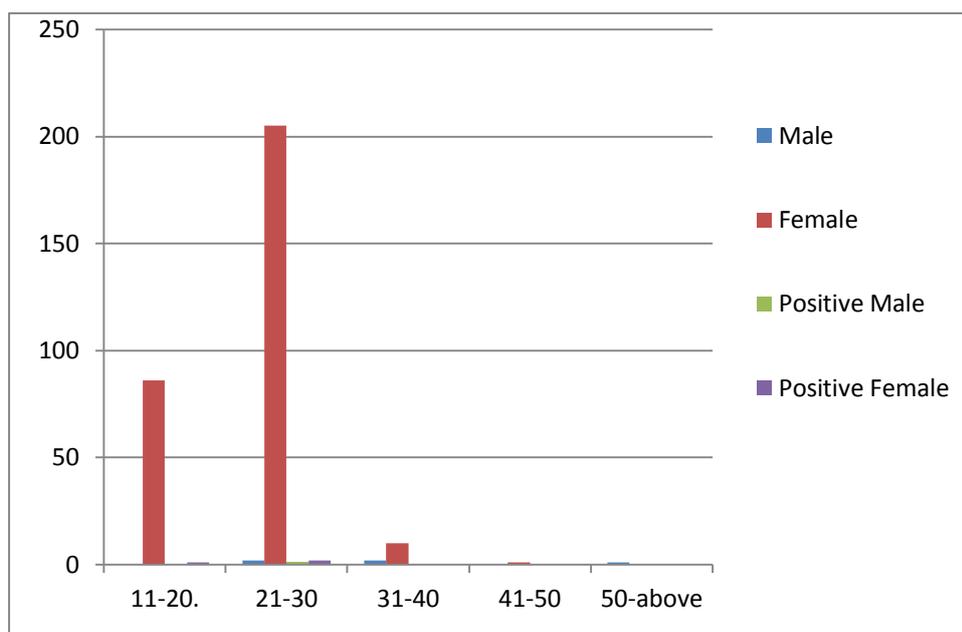


Figure 1- Age and Sex wise tested samples with positivity rate in each sex

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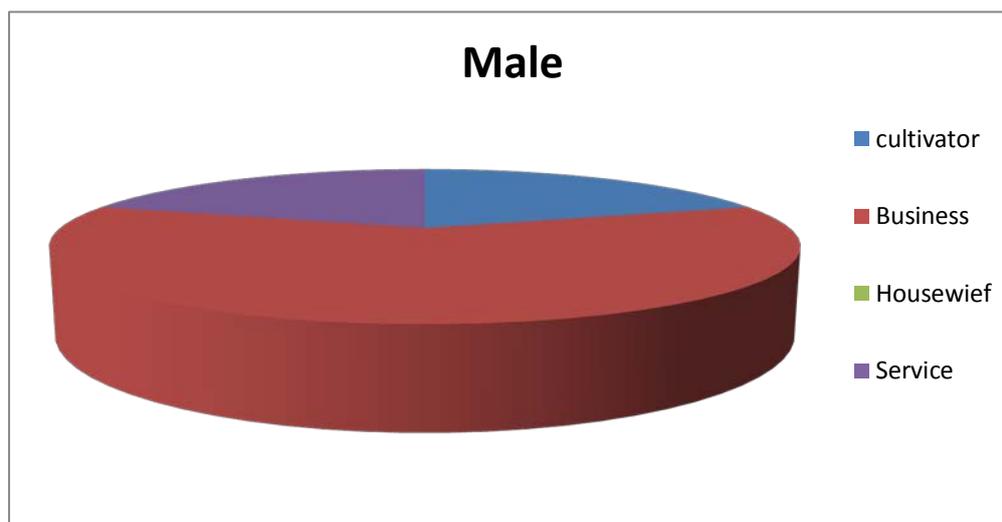


Figure 2- Husband Male reporting for test Occupation wise classification

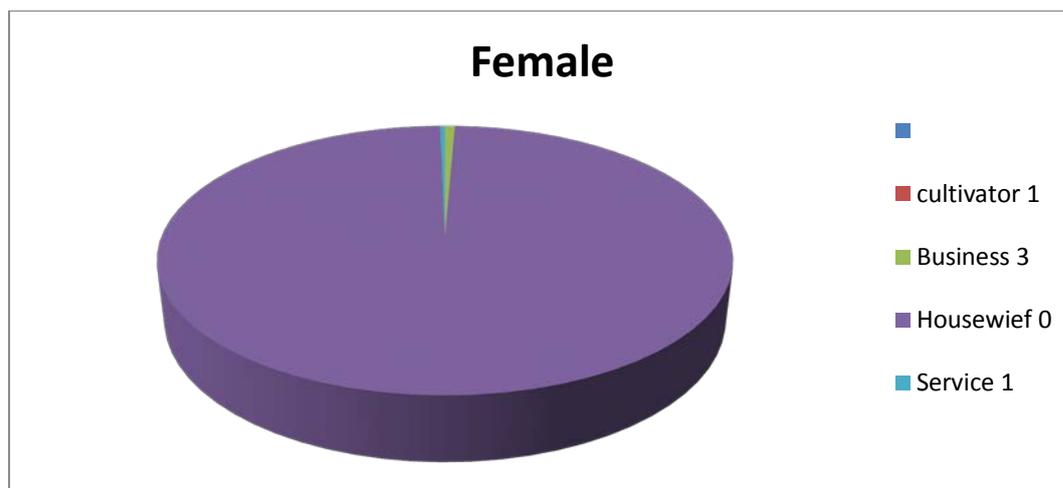


Figure 3- Pregnant women reporting for test Occupation wise classification

Discussion :

There are various risk factors associated with Syphilis are less education, multiple sex partners, travel of sex partner, previous sexually transmitted infections etc. Many demographic as well as behavioural risk factors are associated with syphilis among pregnant women which was found in the syphilis control programme in China[1]. In our study of Lakhimpur district it was found that the main factors of positive pregnant women were multiple sex partners of their husbands and all the positive women were housewife. The husbands were the infections transmitter.

Our study found that 0.99% positive pregnant women where as Assam having syphilis 17.2% in high risk groups, which indicate if we include all category for this test the result of positivity rate will increase[2]. The same study of *Saikia L et al.*, also revealed that 21-30 years age group is most suffering group for STD in Assam which was 54.8 % and the same result is reveal by our study as 67.88%.

Another study by *Sharma VK et al.*, found 5.1 % syphilis positive patients from Assam during their works. The study was carried out in restaurant workers near High way of Assam. Which indicate the this group also may consider as high risk group. In our study area as it is the neighbour district for Arunachal Pradesh, high way to Arunachal Pradesh via this area also indicate the risk factor in it[3]. According to National AIDS Control Organization (NACO) syphilis percentage in pregnant women reduce to 1% from 8 % but as per our study this can be reveal only after study on each pregnant women[4]. Our study indicates that all pregnant women should have a non-treponemal serological test for syphilis during the first trimester same way as *Mehmet Genç et al.*, [5]. In areas with high indices of syphilis, serological screening should be performed at the beginning of the third trimester and at the delivery.

Conclusion :

This study work revealed that the positive women were house wife or business worker and these are not from high risk group. Again the positive Husbands were from both high risk group and non high risk group. But after counselling it was come to notice that all the positive peoples having sexual behaviour with unknown or multiple sex partners. Therefore it is clear from this study that the sexually transmitted diseases can not specify high risk group but it can be specify by high risk behaviour of each person. As it is not easy to study each pregnant women the

test can be made mandatory by government as PPTCT (for HIV test) to minimize the auto abortion, stillbirth, non-immune hydrops, intrauterine growth restriction, perinatal death or control the disease.

References:

1. Hua Zhou, Xiang-Sheng Chen, Fu-Chang Hong¹, Peng Pan. Risk factors for syphilis infection among pregnant women: results of a case-control study in Shenzhen, China. *Pub Med. Sex Transm Infect.* 2007 Oct;83(6):476-80
2. Saikia L, Nath R, Deuori T, Mahanta J. Sexually transmitted diseases in Assam: An experience in a tertiary care referral hospital. *Indian J Dermatol Venereol Leprol* 2009;75:329
3. VINOD K. SHARMA, SUJAY KHANDPUR. Changing patterns of sexually transmitted infections in India. *The National Medical Journal of India.* 2004:17:6
4. Times of India on dated 24th Feb. 2014 <http://timesofindia.indiatimes.com/india/India-on-verge-of-eliminating-syphilis/articleshow/10574566.cms?referral=PM>
5. Mehmet Genç, William J Ledger. Syphilis in pregnancy. *Sex Transm Infect* 2000;76:73-79
doi:10.1136/sti.76.2.73
6. webMed dated on 24th Feb. 2014. <http://www.webmd.com/sexual-conditions/guide/syphilis>

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