

# Syphilis in the Goalpara district of Assam, India

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**Abstract**—Purpose: The main purpose of the study is to check the distribution of syphilis prevalent in the district by which we can understand how to take the control measure to minimize the disease in the specified district. Method: The patients were reported to us with the help of different NGOs and physicians of the Goalpara civil hospital. The steps taken during our study were before the test patients were informed regarding the test details and then asked for consent. After consent, 3-4 ml of blood samples were collected from each patient and tested at Goalpara civil hospital by RPR test. Test results were informed to the patients and were referred to hospital's doctors for their further treatment. The positive patients were treated at STD Clinic (newly named as sukraksha Clinic) as per doctors advice where the drugs free of cost and supplied by NACO to the STD clinic. Result: Our study shows out of 3089 (Three thousand eighty nine) numbers of patients 14 (Fourteen) numbers positive. And 7 (Seven) numbers from them were pregnant women. which shows how important to test all pregnant women for syphilis to control the disease. Again our study shows that the male reported patients were less in comparison to female patients which may be due to male patients feel shy to express their problems or may be due to male are the main income source in the maximum family. Conclusion: As per the study 50% positive patients were pregnant women, so it is necessary to test syphilis of each pregnant woman so that Spontaneous abortion, stillbirth, non-immune hydrops, intrauterine growth restriction, and perinatal death etc can be control.

**Index Terms**— Consent, NACO, Perinatal death, RPR, STD clinic, Spontaneous abortion, Samples

## INTRODUCTION

Syphilis is a sexually transmitted disease (STD) caused by the bacteria called *Treponema Pallidum*. Symptomatically the disease can be identified by sore marks (one or more) which may be firm, round, and painless, sore appears at the location where syphilis entered the body in the primary stage. And in the Secondary Stage patient develops Skin rashes and/or sores in the mouth, vagina, or anus [1,2,5]. Because of which patient feels shy to visit the hospital for proper treatment, which leads the patient to seriousness or late stage. The late stage begins 10-30 years after secondary stage on untreated patients, in which internal organs like brain, nerves, eyes, heart, blood vessels, liver, bones, and joints etc are damaged [5]. This damage may result to death. As per CDC 15 % patient develops late stage out of all positive patients.

As the syphilis is a sexually transmitted disease the positive patients are in high risk for HIV. It has been noticed during different studies Genital sores caused by syphilis can bleed easily and make it easier to transmit HIV infection, with a 2 to 5 fold increased risk of acquiring HIV[6]. According to WHO 12 million people infected per year in syphilis [6]. The syphilis data according to National AIDS Control Organization (NACO) is 8% of pregnant women report syphilis per year and the data reduce to less than 1% early diagnosis and awareness. [7]. During pregnancy syphilis positive women suffers Spontaneous abortion, stillbirth, non-immune hydrops, intrauterine growth restriction, and perinatal death etc. [2]. It shows how important to test each pregnant women during the early stage of pregnancy or before pregnancy.

## Study area

Goalpara district is the neighbouring district of Meghalaya (Tura), and Kamrup, Barpeta, Bongaigaon and Dhubri districts of Assam are very much well connected with both the rail and bus services. The Brahmaputra goes through this district so makes it important for the coal business and suitable for the Bangladeshi immigrants. Again Kamrup district is the gateway of Northeast india, so, communication of Goalpara district indicates migration to this district from different parts of assam as well as outside. Because of which we have selected this district as our study area.

Goalpara district is the area where different communities live. So, the way of living of each community differs from each

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and every area of the district. Assamese, Rabha, Garo, Koch, Rajbongshi, Bengali and Mushlim are the main community of this district. National High way 31 and 37 passes via this district is also a important cause of our study.

tative test with 1:2, 1:4, 1:8 and 1:16. The data was analyse in the excel sheet of Microsoft office.

**Study Materials and Methods**

1. Sample collection- After getting work permission from the ethical committee of joint director of health services of Goalpara district Samples were collected from the patients who have visited the Civil hospital, goalpara for their check-up during illness . As the Civil Hospital is the government hospital which is located at the centre of the district and are well ornamented with specialist doctors all categories of patient visits to this hospital. Some of the suspected asymptomatic subject’s (who are from high risk group )serum samples were also collected during their visit to hospital (STI Clinic ) with the help of NGOs. The high risk group was considered based on the report from the NGO’s counselling. Before the collection of blood samples from the patient consent was obtained for allowing to do the test. The duration of the sample collection was the whole year of 2011, a one year 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 clotting. 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.

2. Test Procedure - Modified VDRL antigen and microparticulate carbon particles of reagent react with ‘reagin’ of serum samples and flocculate. It 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 quanti-

**Table and Figures**

Sl No	Months	Total Test	Total No of Positive	If Pregnant Positive (Included in Total no of Positive)
1	January	249	2	1
2	February	264	1	1
3	March	150	0	0
4	April	202	0	0
5	May	203	2	2
6	June	201	2	0
7	July	275	3	1
8	August	192	1	0
9	September	380	0	0
10	October	350	1	1
11	November	320	2	1
12	December	303	0	0
	<b>Total</b>	<b>3089</b>	<b>14</b>	<b>7</b>

Table 1 :- Month wise patients reported for test with positivity rate

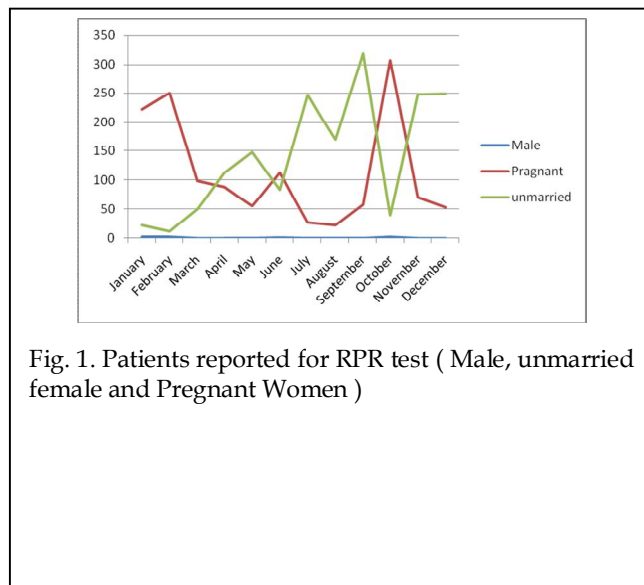


Fig. 1. Patients reported for RPR test ( Male, unmarried female and Pregnant Women )

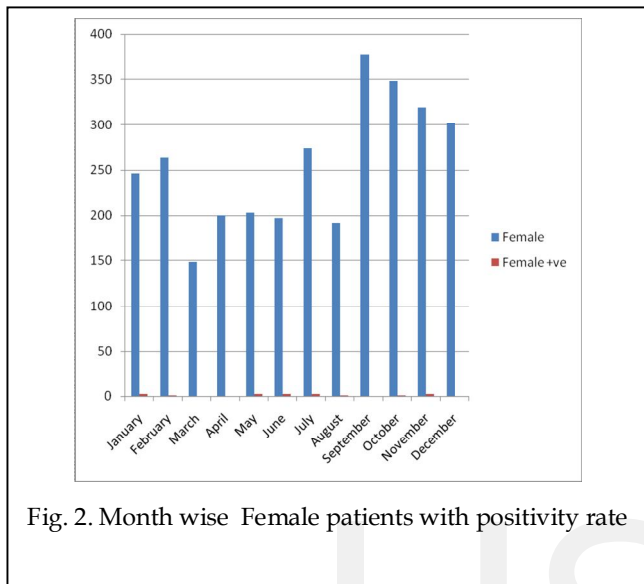


Fig. 2. Month wise Female patients with positivity rate

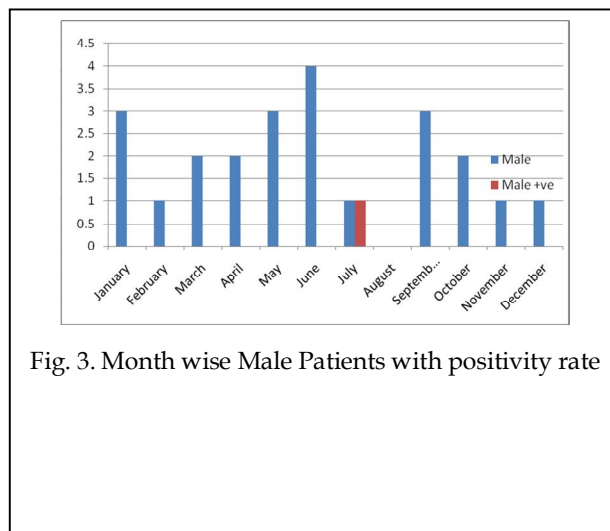


Fig. 3. Month wise Male Patients with positivity rate

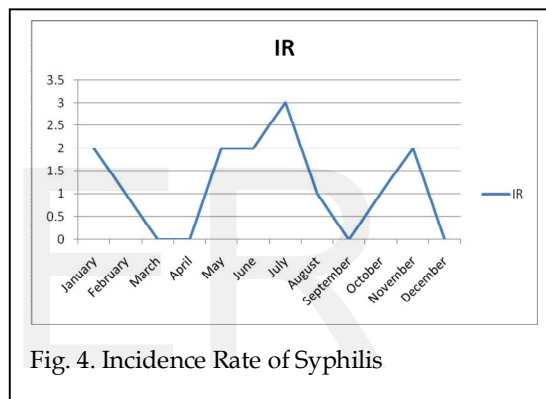


Fig. 4. Incidence Rate of Syphilis

**Results and Discussion:**

It was found during our study that out of 3089 (Three thousand eighty nine ) of patient’s sample 14 ( fourteen ) were positive and of which 7 ( Seven ) samples were of pregnant women [ Table 1 ]. 50 % positive patients were pregnant women. Worldwide 1.4 million pregnant women were found positive for syphilis, which indicates how they are in risk of transmitting the syphilis perinatally to the fetus [1]. The rate of congenital syphilis was 7.8 cases per 100,000 live births in 2012 as per WHO record [3]. Because of this Pregnant women should be tested regularly for syphilis so that it can be diagnosed and prevent the cause of serious problems in a baby [4]. This was found in our study too. When we evaluated the patients report reported for the test in civil hospital, Goalpara, month wise, during the month of September’2011 high numbers of unmarried female were reported to test and in the month of October’2011 high number of pregnant women were reported but the male

patients reported for test were almost same round the year. Again reporting male patients were very less in numbers round the year. It may be due to low socio-economic status [2]. Male never comes with contact with any NGOs and maximum of them goes out for income source in comparative to female. Regarding pregnant women they come to hospital for routine check up. Again most patients reported to government hospital were from low-and middle-income group and more than half (53.8%) of them had formal education [2].

In our study it was found that the positivity rate of pregnant women is higher than other female. Whereas non pregnant females came to hospital for test after counselling to different NGOs and NGOs always prefers to test high risk group or female with multiple sexual partner. But the pregnant women who reported to hospital were individually for their routine check up only which indicates the importance of check up for pregnant women. If we check the positivity Incidence rate month wise it was found that in the month of July highest numbers of positive patients were found [ figure 4].

## CONCLUSION

Till today syphilis is a very important disease of Goalpara district of Assam. To control this disease early detection and awareness of peoples are mandatory. And role NGO is also very important as they involved in each part of the area. Our study concludes that it will be helpful if every pregnant woman advice for the syphilis test so that Spontaneous abortion, stillbirth, non-immune hydrops, intrauterine growth restriction, and perinatal death in pregnancy can be controlled.

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