

# Prevalence of Chlamydia Trachomatis in Pregnant Women with Bad Obstetrical History

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## Summary

The objective of this study was to establish the prevalence of Chlamydia Trachomatis in pregnant women with bad obstetrical history in South Kanara district.

Four hundred and fifty women with bad obstetrical history (more than three foetal losses) were investigated during a 2 year period from June 1995 to May 1997. Hundred and ten pregnant women with no previous history of obstetrical complications constituted the control group in the study. Specimen collection occurred between 8 to 36 weeks gestation using standard method. Antigen detection for Chlamydia trachomatis was done using immunofluorescence technique. The prevalence rate of infection in women with bad obstetrical history was found to be 15% and it was high in case of age group 20-30 years (19.1%). Infection with Chlamydia trachomatis was associated with serious adverse foetal effects like preterm labour in 42.8%, spontaneous abortion 2.0%, still birth 40.0%, and perinatal death 37.5%. All the pregnant women in the control group showed no evidence of Chlamydial infection.

Rate of infection was higher in pregnant women of age group 20-30 yrs and it was associated with obstetrical complications.

## Introduction

Chlamydia trachomatis, an intracellular obligate organism is one of the commonest cause of sexually transmitted diseases. It is a major cause of cervicitis, pelvic inflammatory disease, tubal infertility and ectopic pregnancy.

Chlamydia trachomatis is one of the most prevalent genital pathogen found in pregnant women. The possible influence of Chlamydia trachomatis infection on pregnancy is less clear. Chlamydia infection in preterm labour, spontaneous abortion, perinatal death or still birth has been observed by Fassassi-Jarretton et al (1991), Minkoff. H. et al (1984) and Osborne. N. G. et al (1988).

This study was undertaken to detect the Chlamydial infection in pregnant women and its impact on pregnancy.

## Materials & Methods

From July 1995 to May 1997, 450 pregnant women aged 18 to 40 years attending the antenatal clinic of the Medical College hospitals were included in the study. Their symptoms and signs were recorded.

Cervical smears were collected by introducing a sterile Ayer's spatula into the endocervical canal for 10 seconds and rotating it. The smear was spread on a glass slide and air dried. It was fixed with acetone and preserved at  $-20^{\circ}$  C. Staining for Chlamydial antigen was carried out by fluorescein isothiocyanate (FITC) labelled monoclonal antibody (Orion diagnostics) in a moist chamber and using positive and negative controls. Smears were screened under a fluorescent microscope using an FITC filter system at a maximum excitation wave length of 490 nm and a mean emission wave length of 520nm. These were considered to be positive for chlamydia trachomatis if five or more bright apple green fluorescent disc shaped elementary bodies (Ebs) with a diameter of 250-300 nm were seen in the smear.

Epithelial cells were stained with orange or red coloured fluorescence. Most positive smears contained more than 10 EBs as well as larger fluorescent bodies due to clustering of EBS intracellular as well as extracellular EBs were observed.

## Results

Cervical smears from 450 women were examined. Seventy were positive for chlamydial

antigen (15%). The majority of whom (89.1%) were below the age of 30 years. None of them presented with symptoms of genital tract infection such as pain in the lower abdomen, white discharge, pruritus, dysmenorrhoea, dysparunia and profuse periods. However 48% of the patients gave history of white discharge.

Of the 450 women studied 296 gave history of spontaneous abortion, 98 of preterm labour, 40 of stillbirth and 16 of perinatal death (Table I).

**Prevalence of Chlamydia Trachomatis in Relation to Adverse Outcome of Pregnancy**

**Table I**

Cause of foetal loss	No. of patients evaluated	No. of positive cases	Percentage
Spontaneous Abortion	296	6	20.0%
Preterm Labor	98	42	42.8%
Still birth	40	16	40.0%
Perinatal death	16	6	37.5%

Table II shows evaluation of study population based on incidence of foetal loss and the incidence of Chlamydia in this group of women. Of the 450 women evaluated, the rate of foetal loss per patient was 3 in 314, 4 in 102, 5 in 20 and 6 in 11. The incidence of foetal loss was 7 in one and 8 in two women. Incidence of chlamydial infection in relation to foetal loss was found to be highest in women belonging to four foetal loss group (19.6%) followed by women with a foetal loss incidence of 3 per patient (15.6%) and least (5%) in women with 5 foetal losses. Chlamydia infection was not detected in women with greater incidence of foetal loss.

**Incidence of Clamydia Trachomatis in Relation to Foetal Loss**

**Table II**

Incidence of foetal loss per patient	No. of patients evaluated					
	3	4	5	6	7	8
Incidence of Chlamydia (%age)	15.6	19.6	5.0	0	0	0

Positive smears for Chlamydial antigen (Table III) were maximum in age group 20-30 years (62/324) giving a percentage of 19.1% whereas the incidence was found to be low in women belonging to the age group 16-20 years and 20-40 years showing percentage of 9.09% and 2.0% respectively.

**Incidence of Chlamydia Trachomatis in Relation to Age**

**Table III**

Age (in years)	Total No. Studied	No. of Positive	Percentage
16-20	77	07	09.09%
20-30	324	02	19.01%
30-40	49	01	02.00%

p= <0.001 significant

However chlamydial antigen test was negative in all the pregnant women included in the control group.

**Discussion**

We observed a prevalence rate of 15% for Chlamydia trachomatis in relatively asymptomatic pregnant women. Other studies in India have reported positivity rates of 15% in relatively asymptomatic young women, 9.7% in high risk women commercial sex workers from Central Bombay and 15-60% in young women with infertility or PID and those attending STD clinics [Arora et al (1992), Mittal et al (1993), Bauvers et al (1993)].

Studies in India on prevalence rate of Chlamydia trachomatis in pregnant women have not been documented so far.

Osborne et al (1988) reported that the prevalence of Chlamydia trachomatis infection in asymptomatic pregnant women is 34.4% by indirect immunoperoxidase method. Prevalence rate of Chlamydia trachomatis in pregnant female has been shown to vary from 2.2 — 3% by various methods of detection in different population.

Minkoff et al (1984) and Hardy et al (1984) could not show any correlation between the adverse foetal outcome with Chlamydial infection. The data from our study indicate that serious adverse foetal effects are associated with chlamydial infection.

Preterm labour was present in 42.8%, spontaneous abortion in 2.0%, stillbirth in 40.0% and perinatal death in 37.5%.

The prevalence rate related to age was apparently high (19.1%) in women of age group 20-30 years when compared to that in other age groups which did not exceed 12%. This was expected because in this study majority of the women investigated belong to 20-30 years age group.

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