



CHLAMYDIA TRACHOMATIS IN WOMEN WITH ABNORMAL VAGINAL DISCHARGE - A PROSPECTIVE STUDY

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ABSTRACT

AIM: Clinical and microbiological evaluation of sexually active women with vaginal discharge for chlamydial infections.

OBJECTIVE : 1. To review current criteria and rationale for detection of *Chlamydia trachomatis* in asymptomatic patients and correlate clinically.

2. To study the prevalence of chlamydial infections among sexually active women with abnormal vaginal discharge.

MATERIALS & METHODS: The study was conducted in gov't Thiruvapur medical college, Thiruvapur from December 2018 to November 2019 with ethical committee approval. About 80 pts in the reproductive age group coming to gynaecology OP dept studied and results were analysed. Categorical data was represented in the form of Frequencies and proportions. Chi-square test was used as test of significance for qualitative data. Continuous data was represented as mean and standard deviation.

RESULTS: In this study majority of subjects were in the age group 31 to 35 years (30%), 28.8% were in the age group >35 years, 26.2% were in the age group 26 to 30 years and 15% were in the age group <25 years and 16.2% had abdominal pain, 13.8% had secondary infertility, 12.5% had PID, 10% had leucorrhoea, 10% had fibroid uterus and 7.5% had primary infertility.

CONCLUSION : Chlamydial genital infections are asymptomatic if undetected will lead to serious complications so early detection using individual single cervical swab samples is of real value as effective treatment is available. PCR is more accurate with 100% sensitivity and 100% specificity in diagnosing *Chlamydia trachomatis*.

KEYWORDS : *Chlamydia trachomatis*, PCR, Pelvic inflammatory disease, sexually transmitted disease.

INTRODUCTION :

Chlamydia is a 'silent' infection as most infected people are asymptomatic and lack abnormal clinical findings. It is a gram negative bacterium, an obligate intracellular parasite has highest reported rates of infection in sexually active women younger than 25 years of age due to behavioral, biological & cultural patterns. Chlamydial infection in pregnancy is associated with an increased risk of miscarriage, preterm labor, PPRM, low birth weight, and perinatal mortality. It often goes undetected, remain asymptomatic may lead to urethritis, cervicitis, endometritis, salpingitis resulting in Pelvic inflammatory disease. It also causes infertility and ectopic pregnancy. Different types of *C. trachomatis* cause different diseases. The most common strains cause genital tract disease, while other strains cause disease in the lymph nodes or eye disease.

Among sexually active women aged 16–24 years, chlamydia screening increased from 23.1% in 2001 to 48.3% in 2016 in commercial health maintenance organization (HMO) plans. Although chlamydia screening has expanded over the past twenty years, many women who are at risk are still not being tested hence reflecting the lack of awareness among some health care providers and the availability of resources is limited to support these screening. In 2017, 630 (20.1%) of 3,140 countries had rates of reported chlamydial infection higher than 542 cases per 100,000 population. According to new estimates from the Centers for Disease Control and Prevention, nearly 2 million people in the United States have the sexually transmitted disease (STD) chlamydia. Some researchers found that between 2007 and 2012, about 1.7% of people between the age group of 14-39 had a chlamydial infection, which translates to about 1.8 million infections nationwide.

Chlamydial infections were more common in people who had multiple sex partners (2/more) in the last year. The researchers found that 3.2% of people with multiple sex partners had chlamydia, compared with 1.4% of people who had one partner. A higher rate of infection was noted in sexually active women than men (2% in women, versus 1.4% in men). Young

women particularly had a high rate of infection. Among sexually active females in the age group of 14 to 24, chlamydia infection occurred in 4.7%. Clinicians should routinely screen for chlamydial infection in young women and men, who have sex with men and ensure that infected patients and their sex partners receive timely treatment to prevent reinfection. It can cause perihepatitis, arthritis, dermatitis, conjunctivitis, endocarditis, pharyngitis, proctitis, Crohn's disease. The higher prevalence of chlamydia among young people may reflect multiple barriers to access STD prevention, such as cost, lack of transportation and perceived stigma.

REVIEW OF LITERATURE :

NATURAL HISTORY of *Chlamydia trachomatis* in genital infections is poorly defined & the untreated infections duration remains unknown. In a widely cited study, McCormick⁷⁶ reported that when retested after 16 to 17 months, 50% of 14 women with untreated genital chlamydial infections were infected. The largest two studies of untreated women were reported by Rahm and Parks. Rahm et al prospectively followed 107 young asymptomatic women with genital *Chlamydia trachomatis* diagnosed by screening culture. During follow-up period of 10-12 weeks, 16 women (15%) developed symptoms that required treatment. Of 83 asymptomatic untreated women available for repeat culture, 67 (80%) remained culture positive. Ten of 17 culture-negative women within 6 months were recultured, and all remained culture negative. More recently, all cases of chlamydial infection diagnosed by culture are reviewed by Parks et al⁷⁹ at the Jefferson County STD clinic in Alabama. They identified instances in which patients were untreated and retested within 40 days. Most study subjects (85%) were recultured within 25 days. The accuracy of all negative follow-up cultures of frozen specimens was verified using chlamydial PCR. At time of repeat testing, 27% of women were both culture and PCR negative, suggesting that the infections were cleared spontaneously.

In a study of 128 women with gonorrhoea and chlamydial coinfection, after treatment with 1 g ampicillin or penicillin-probenicid, Rees⁸⁰ serially cultured women at 1- to 3-week

intervals for up to 12 weeks. Seventy-two percent of women were followed up for 2 month or longer and at the time of last culture, 83% remained infected.

Schachter⁸¹ reported that 27 of 35 untreated women (76%) retested 2 to 28 weeks after an initial positive culture when retested, remained culture positive.

Recently, Gerard et al⁸⁴ used reverse transcriptase PCR (RT-PCR) to demonstrate the presence of primary transcripts of chlamydial rRNA in the fallopian tubes of 7 women with ectopic pregnancy who were PCR positive for *C trachomatis*. In the largest study, Johannisson recultured 54 men with chlamydial urethritis 1 to 3 weeks after an initial positive chlamydial culture. After 1 or 2 weeks, 84% of subjects were recultured, and 60% remained culture positive.⁸⁶ In the next-largest study of untreated men, Paavonen⁸⁷ observed higher rates of persistent infection, with seventy seven% of twenty one men remaining culture positive after four weeks.

MATERIALS & METHODS

This study was conducted in govt Thiruvavur medical college for a period of 1 year from december 2018 to November 2019 after ethical committee approval. This was a prospective study carried among pts coming to gynec op with complaints of abnormal vaginal discharge.

INCLUSION CRITERIA

All sexually active pregnant and non pregnant women with complaints of vaginal discharge .

EXCLUSION CRITERIA

1. Postmenopausal women
2. women with genital prolapse
3. women with malignancy
4. Those who are already on antibiotics.

About 80 pts were included in the study . They were assigned into 2 groups.

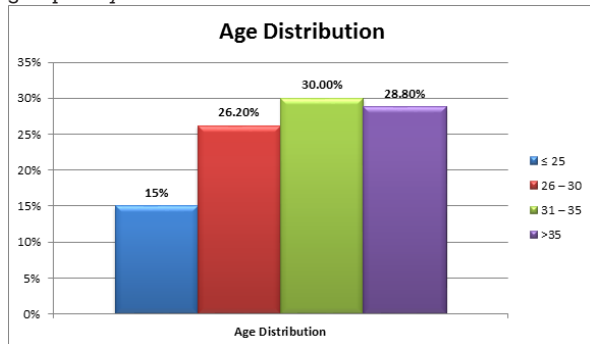
GROUP 1 : cases with abnormal vaginal discharge.

GROUP 2 : cases without abnormal vaginal discharge.

Results were tabulated and analysis done.

RESULTS :

In this study majority of subjects were in the age group 31 to 35 years(30%) , 28.8% were in the age group >35years , 26.2% were in the age group 26 to 30 years and 15% were in the age group <25years.

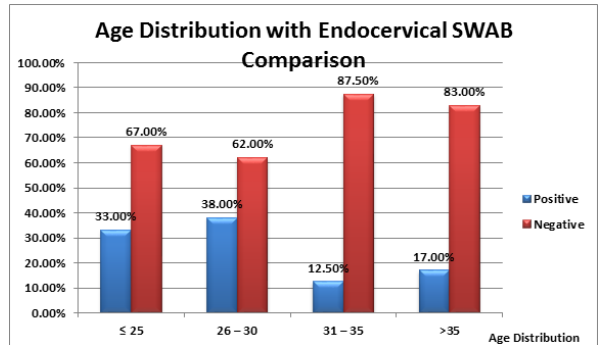


Distribution Diagnosis of Study population:

Diagnosis Distribution	No. Patients	Percentage
LEUKORRHEA	8	10.0%
ABNORMAL PAIN FOR EVALUATION	13	16.2%
PRIMARY INFERTILITY	6	7.5%
SECONDARY INFERTILITY	11	13.8%
PID	10	12.5%

PCOD	4	5.0%
UTI	3	3.8%
IRREGULAR MENSTRUATION	4	5.0%
ABNORMAL UTERINE BLEEDING	1	1.2%
FIBROID UTERUS	8	10.0%
OVARIAN CYST	2	2.5%
AUB	5	6.2%
CHRONIC CERVICITIS	2	2.5%
PROLAPSE UTERUS	2	2.5%
DUB	1	1.2%
Total	80	100%

In this study 23.8% were positive for endocervical swab and 76.2% were negative for endocervical swab.



Among subjects with positive endocervical swab, majority were in the age group of 26-30 years(38%) out of 21 subjects 8 were positive, 33% were in the age group of <25years out of 12 subjects 4 were positive, 17% were in the age group of >35years out of 23 subjects 4 were positive and 12.5% were in the age group of 31-35 years out of 24 subjects 3 were positive for endocervical swab. In this study out of 6 subjects having hypothyroidism, 3 were positive(50%). out of 13 subjects having PID 6 were positive(46%), out of 7 subjects having nabothian cysts 3 were positive(43%). out 13 subjects having cervical erosions 3 were positive(23%). Using chi square test Pvalue (0.034) which was significant.

DISCUSSION:

It is a challenge for both clinicians and laboratory workers in detecting chlamydial genital infection and preventing transmission and spread of infection to the upper reproductive tract. It remains asymptomatic and may lead to endometritis and salpingitis resulting in Pelvic inflammatory disease. Polymerase chain reaction (PCR) for the detection of *C. trachomatis* has recently been proved to be superior in sensitivity in comparison with culture, enzyme - linked immunosorbent assay^{90,91} or direct fluorescein-conjugated antibody (DFA) staining. PCR technique could be opted for better diagnosis of *C. trachomatis* infection in comparison to the commercially available ELISA technique.

Dudareva-Vizule et al. found that 4.9% of women are infected with this microorganism. The highest rate of positive results was obtained in the age groups 15-20(5.9%) and 20-25 (6.9%). Arsić et al. during research conducted in the Balkan countries, noticed significantly higher percentage of positive results. Using the ELISA method, Chlamydia trachomatis was detected in 8.1% (i.e. 100/1400) women in one of the centres while in Skopje, where DFA (direct fluorescent antibody assay) method was used, chlamydia antigen was detected in 7.8% (120/718) patients⁹². Berntson et al. tested 199 women whose partners received a positive result for Chlamydia trachomatis. Using genetic methods they received positive results in 153 out of 199 women (53.5%); of the women infected with Chlamydia trachomatis half the women did not declare any clinical symptoms, but the other patients experienced dysuria and vaginal discharge.

Torrone et al. analyzed positive results for Chlamydia trachomatis in the USA between 2007 and 2013. The prevalence of chlamydia decreased with age ($p < 0.05$) among sexually active females. Prevalence among sexually active females aged 13–26 years (the population targeted for chlamydia screening) was 5.7% overall and varied by race/ethnicity ($p < 0.05$). Among sexually active females aged 15–25 years, approximately 1 in 9 non-Hispanic black females was infected with chlamydia (15.5%); 1 in 25 Mexican-American females was infected (5.5%), and 1 in 65 non-Hispanic white females was infected (2.8%).

CONCLUSION :

It was concluded that PCR is more accurate with 100% sensitivity and 100% specificity in diagnosing Chlamydia trachomatis. Chlamydial genital infections are asymptomatic if undetected will lead to serious complications so early detection using individual single cervical swab samples is of real value as effective treatment is available. Hence PCR offers more accurate diagnosis, better control of infection and thereby offers better prevention of pelvic inflammatory disease, tubal infertility and ectopic pregnancies.

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