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Original Article

Chlamydia in reproductive tract infections: scenario in Kolar region

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ABSTRACT

Abstract: Abnormal white discharge is a frequent symptom of women presenting to gynaecological OPD but signs and symptoms are not specific, hence require laboratory testing. Chlamydial reproductive tract infections lead to devastating consequences without much clinical signs and symptoms. Hence detection of chlamydia in high risk symptomatic and asymptomatic women and early treatment would result in cost savings in terms of hospitalisation and treatment of resultant morbidity. **Objectives:** 1.To find the frequency of Chlamydial infections in women presenting to gynaecological OPD. 2.Microbiological analysis of abnormal vaginal discharge. **Methods:** This is an observations study\ carried out in RLJalappa Hospital attached to Sri DevrajUrsMedicalCollege, Kolar from March 2009 to July 2010. One hundred women with abnormal vaginal discharge, infertility, ectopic pregnancy, PID (Polaric inflamatory disease) were included in the study. Swabs from Endo- cervix and surface of cervix were taken for studying Chlamydia by rapid card antigen (Quickstripe antigen detection) detection method, Grams stain and culture on blood and Mc Konkey agar. Papanicoulou smears were also taken to study type of smear and organisms like trichomonas. The resultant finding was analysed. **Results:** No specific infection was seen in 56 women. Two women had chlamydial infection, 2 had trichomonas and 13 were diagnosed with bacterial vaginosis. 9 women had candidial infections and 14 had specific infections like with bacteria Klebshiella etc. Rest had mixed infections. **Conclusion:** Chlamydia is an infrequent pathogen in causing abnormal vaginal discharge and does not warrant routine laboratory testing. Bacterial vaginosis is the most common cause of abnormal vaginal discharge.

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1. Introduction

Abnormal vaginal discharge is a frequent complaint in women presenting to gynecological OPD in women of all age groups. However signs and symptoms of vaginitis are not specific to any single underlying cause. Accurate diagnosis requires laboratory testing in selected cases for effective treatment.

In the present study we analyzed the cause of cervico-vaginal infection in one hundred women with a) history of white discharge pervaginum b) women who have come seeking advice for infertility c) women with diagnosed ectopic pregnancy or history of ectopic pregnancy or confirmed cases of pelvic inflammatory disease.

A lot of emphasis has been put on diagnosis of Chlamydia trachomatis in causing genital tract infections. Such an infection is believed to cause pelvic inflammatory disease requiring hospitalization and sequalae such as infertility and ectopic pregnancy and chronic inflammation leading to high health costs. There has been recent recommendation by CDC to screen high risk women i.e. women with recent onset of sexual activity, change of sexual partners H/o mucopurulent cervicitis for Chlamydia infections. This strategy aims at treating the infection before its devastating consequences and hence causes savings in the health care costs. Other common causes of vulvo-vaginal symptoms include vulvo-vaginal candidiasis, trichomonas vaginalis, and bacterial vaginosis. In a primary care study vulvo-vaginal symptoms including vaginal discharge were due to vulvo-vaginal candidiasis in 27%, bacterial vaginosis in 21%, trichomoniasis in 8% Chlamydia trachomatis in 2%, Neisseria gonorrhoea in 1% and no infection in 34% [1]. Several pathogens co-exist. Candidiasis and bacterial vaginosis and trichomonas account for at least 90% of

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infectious vaginitis. In this setting we had no data about the frequency of chlamydial infections in rural South India. Hence we undertook a study to analyze causes of abnormal discharge in women and co-relate clino-microbiological findings with special emphasis on Chlamydia.

2. Materials and Methods

One hundred women presenting with abnormal vaginal discharge or seeking advice for infertility or previous or current ectopic pregnancy/pelvic inflammatory disease who attended Gynecological OPD at RL Jalappa Hospital, Kolar were included in the study. Study period extended from March 2009 to July 2010.

After a detailed history speculum examination was done and vagina and cervix were inspected and type of discharge noted. Two Swabs were taken for examination one from posterior fornix and one from surface of cervix for grams stain and culture sensitivity respectively. These swabs were plated on blood agar and Macconkey agar for studying culture characteristics and speciation of other organisms. Anaerobic organisms were noted by their characteristic appearance on Gram stain. Endocervical swabs were taken for testing for Chlamydia with the swabs provided in the antigen testing kit (Quickstripe™ Chlamydia Ag testing kit is a rapid chromatographic immunoassay for qualitative detection of Chlamydia in female cervical swabs, male urethral swabs, and male urine specimens by Sayvon diagnostics, Israel.). This was followed by Papanicolaou smears, which were reported for abnormal cells, presence of inflammation and presence of organisms such as candida and trichomonas. Chlamydia testing was done by the rapid card test for antigen detection in the gynecological OPD itself immediately after the swab collection.

2.1. Method of swab collection:

After clearing the cervix of any mucous, the swab was introduced into the endocervical canal and rotated 360 degrees and left in-situ for 15 seconds in order to collect the endocervical cells which are the harbingers for Chlamydia. The swabs were processed as follows: they were introduced into a sterile plastic test-tube provided with the kit and 5 drops of reagent A (0.2 M NaOH) was added and the swab was rotated 20 times squeezing the bottom of the tube and left for 2 minutes. 0.2ml of reagent B (0.2N HCl) was added and swab was rotated 15 times squeezing the bottom of the tube and left for 1 minute. A filter cap was placed on the test-tube and 3 drops of the solution was added to the well of the rapid antigen card and read after 20 minutes. In this test, antibody specific to the Chlamydia antigen is coated in the test region of the test. During testing the extracted antigen solution reacts with an antibody to Chlamydia to generate a coloured line in the test line region. The presence of a coloured line in the test region indicates a positive result while its absence indicates a negative result. Optimal performance of test is indicated by appearance of a control line.

3. Results:

The patient data was analyzed as follows (Table 1-4):

Table :1 Showing the age group of the patients

Age of the patients	Number of patients (%)
< 20 years	6
21-30 years	29
31-40 years	36
41-50 years	21
51-60 years and above	8

Table :2 Showing the age group of the patients

Parity	Number of patients (%)
Nullipara	3
Para 1	9
Multipara	88

Table :3 Showing the symptoms of the women*

Symptoms	Number of patients (%)
White discharge per vagina	81
Itching	15
Pain abdomen	19
Fever	2
Burning micturition	9
Others (menstrual problems, dyspareunia etc)	23
Asymptomatic	

Table :4 Showing the signs in women

Signs	Number of patients (%)
White discharge	
Purulent	11
Mucoid/homogenous	67
Curdy	6
Cervical erosion	19
Cervix	
Congested	7
Bleeds on touch	4
Foul smell	8
Forniceal tenderness/	
Suprapubic tenderness/	
Cervical movement tenderness	31

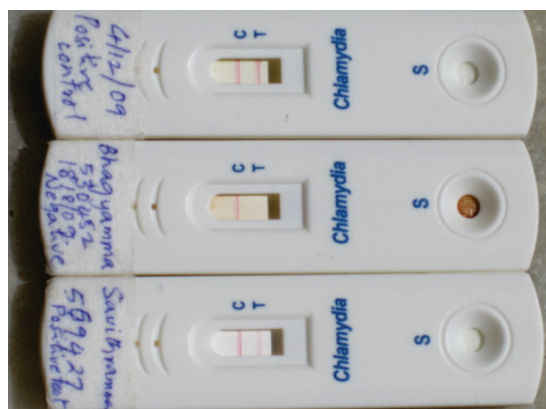
* some women had more than one symptom.

Table : 5 Microbiological diagnosis *

Organisms	Number of patients (%)
Normal flora	43
Chlamydia	02
Bacterial Vaginosis	25
Candida albicans	10
Other species of candida	04
Other specific infections (yield heavy pure Growth of organisms)	
Non-Specific inflammation	03
Group B streptococci & MRSA	01
Enterococci	01
Enterobacter	04
Klebsiella	01
Escherichia coli	02
Desquamative vaginitis	03
Trichomonas	04

* some women had multiple infections

Picture - 1



Upper test show positive control. Middle test shows negative reactions. Lower test show positive test with patient's sample.

3.1. Clinico-microbiological correlation

Majority of the women presented with white discharge P/V. Eleven women were asymptomatic and were screened for Chlamydia when they presented to OPD for other gynecological complaints such as menorrhagia etc. Three women had acute ectopic pregnancy and 2 with history of ectopic pregnancy were also screened but only one had candida infection. Two women with infertility were screened negative for Chlamydia. 17 women were symptomatic with history such as white discharge P/V but grams stain and culture were negative. This could be due to other infections such as viruses or mycoplasma which however were not tested for in the present study. The other reason may be that these women may interpret a physiological increase in cervical mucous production as abnormal. This typically occurs around ovulation and is also a feature of everted cervix.

4. Discussion:

The most significant pathology in abnormal discharge in our study was bacterial vaginosis followed by Candida. Significant pure heavy growth of a few specific organisms was seen in 10 women. Chlamydia was diagnosed in only two women. This incidence of Chlamydial infection is similar to that reported in United states with an average of 3-6% [2] and same as that reported by Linda French, Horton J, Matousek [1]. In clinical examination three characteristics are associated with chlamydial infections: yellow endocervical discharge, easily induced cervical bleeding and opaque cervical discharge. All the three findings were seen in one patient who presented with history of post-coital bleeding. This patient had in addition heavy growth of beta hemolytic streptococci. The second patient had only opaque discharge and all other symptoms of pelvic infection such as burning micturition and forniceal tenderness. Chlamydial testing of the spouse was negative. Both women were treated with a single dose of azithromycin.

Contrary to our findings Chlamydia trachomatis antigen was detected in endocervical fluid in 35% of women with pelvic inflammatory disease in a study reported by Tiewari et al [3]. Chlamydia was associated with 40% and 43.3% of Candida albicans and Trichomonas vaginalis respectively.

Non albicans species of Candida was seen in 4 women. This is a condition associated with treatment failure or recurrent symptoms in women and requires a different approach to treatment.

In a study by Das Vinita et al [4] to detect the presence of Chlamydia on first void urine sample by PCR, Chlamydia trachomatis was present in 14% of symptomatic and 4% of asymptomatic women. They recommended universal screening for genital Chlamydia in reproductive age group.

Prevalence of Chlamydia trachomatis in pregnant women with bad obstetric history was reported to be 15% and associated with serious adverse fetal effects like preterm labor (42.8%), spontaneous abortion 2%, and still-birth in 40% and perinatal death in 37.5% [5]

Indian council of medical research [6] carried out large multicentric study to determine the prevalence of major sexually transmitted infections including Chlamydia trachomatis genital infection from 1996-97 on 600 women. The prevalence of Chlamydia ranged from 1.6% to 3.3% in different groups. Even in diagnosed cases of pelvic inflammatory disease and infertility the prevalence was around 3%; in women with leucorrhoea it was 1.9%. This is similar to our finding of 2% infection in our general gynecological population. This conflicting data reported by others may be reflective of prevalence of Chlamydia trachomatis infection in different geographical areas. It may also be due to different methods used to detect the infection. Quickstripe TM Chlamydia Ag kit we have used has a high specificity comparable with PCR 96.7%, relative sensitivity of 88.5% and accuracy of 93.7% as per the manufacturer.

The low prevalence of Chlamydial infections may also be related to widespread use of over the counter antibiotics like ciprofloxacin which is also used as primary treatment for respiratory infections, diarrhea etc. These antibiotics are also effective against Chlamydia trachomatis and hence will reduce the

5. Conclusion

Bacterial vaginosis continues to be the most common cause of abnormal vaginal discharge in our population. The prevalence of Chlamydia is low and hence we recommend screening for Chlamydia infections in high-risk groups. However further larger population based studies are required in this direction.

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