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Original Research Article

Clinico-Etiological Study of Reproductive Tract Infections in Sexually Active Women in Rural Area

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ABSTRACT

Context: Reproductive tract infections (RTIs) including sexually transmitted infections (STIs) are recognized as major public health problem globally. They are second important cause of healthy life lost among women of reproductive age group in developing countries. However most of the Indian studies on reproductive health of women have been conducted at hospitals & in STI clinic. So this present study was planned with objective to clinically screen the reproductive age group women in rural area for any STIs and their aetiology confirmed by laboratory tests. Aims: To study the clinico-etiology of sexually transmitted infections in sexually active age group women. Settings and design: Prospective study.

Material & methods: This prospective study was conducted among reproductive age group (15-49 years) women suffering from RTIs or asymptomatic who attended Community Health centre Dhami, Mashobara Block, District Shimla from August 2013-July 2014 by arranging outreach camps twice per month.

Results: Prevalence of STIs was 49.7% by laboratory test. Common age group affected (58.1%) was 25 to 34 years. Vaginal discharge (62.5%) was most common symptom followed by itching (16.7%), pelvic pain (9.3%), foul smell (6.8%) and irritation (2.9%). Bacterial vaginosis (18.2%) was common STI followed by candidiasis (17.7%), nongonococcal cervicitis (12.8%), gonorrhoea (0.49%) and herpes simplex (0.49%). Mixed infection of bacterial vaginosis /candidiasis and non gonococcal cervicitis was seen in 2.4% women.

Conclusion: In this study prevalence of RTIs / STIs among women in rural area is high and highlights the need to strengthen the rural health care system to early diagnose and prevent RTIs /STIs.

Key words: Reproductive tract infections, sexually transmitted infections, reproductive age group.

INTRODUCTION

Reproductive tract infections (RTIs) and sexually transmitted diseases (STDs) represent a major public health problem in developing countries. [1] These infections often go undiagnosed and untreated. About 40% of women in India are estimated to have RTIs/sexually transmitted infections (STIs) at any given point of time, but only1% completes the full treatment of both partners. [2] In our society, especially in rural areas, females are not common visitors to STI clinic. This difference may be due to the asymptomatic nature of infections in females, lower awareness among women of need for availing medical facilities and their attitude toward health. Similarly rural areas have adopted syndromic treatment of STIs,

as they have limited laboratory services. This syndromic approach has low sensitivity in diagnosis of patients of STIs with vaginal discharge. Addition of clinical examination and use of microbiological laboratory facilities not only increase the sensitivity of diagnosis but also avoid over-treatment of the patient. Early diagnosis and treatment of these infections can prevent serious complications and long term sequelae affecting the quality of life. Taking into consideration all above factors, therefore the present study was done to screen the sexually active age group women attending outpatient department of Secondary health care facility in rural area for symptomatic and asymptomatic RTIs/ STIs and their aetiology confirmed by laboratory tests. No such study has been done by department of dermatology, venereology and leprosy, Indira Gandhi Medical College Shimla, in rural area for the prevalence of STIs and their etiology confirmed by laboratory tests.

MATERIALS AND METHODS

Study design

This prospective study was conducted among reproductive age group women who attended Out Patient Department of Community Health centre (CHC) Dhami, Mashobara Block, District Shimla from August 2013-July 2014 by arranging outreach camps twice per month, who were suffering from RTIs/STIs or asymptomatic. Wide publicity was done for camps.

Subjects

Female sex of age group 15-49 years giving consent for examination & investigation attending the Out Patient Department were included in the study. Menstruating women and the women not willing to give consent for examination and investigation were excluded from study. A total of two hundred and three reproductive age group women fulfilled criteria and enrolled in study.

Detail clinical history pertaining to vaginal discharge – its duration, onset, colour, consistency, odour, blood stained or not and any associated symptoms were recorded. Past history of similar complaint or other sexually transmitted infections were recorded.

General physical examination and systemic examination was done. Per speculum examination was done for noticing the colour, consistency, odour of vaginal discharge, vaginitis, cervicitis, cervical discharge and cervical erosions. Bimanual pelvic examination was done for adnexal or uterine tenderness, cervical motion tenderness and provisional clinical diagnosis was made, which was confirmed by relevant available investigations. All were screened for common STIs by standard microbiological methods. [3]

Three vaginal smears were collected from the upper part of posterior and lateral fornices, first smear subjected to saline wet mount preparation to detect motile trophozoites of Trichomonas vaginalis and second smear to 10% potassium hydroxide (KOH) preparation to notice the presence of fishy smell and seen under microscope for refractile budding yeast cells and third smear was subjected to gram stain to detect clue cells of bacterial vaginosis.

Another swab was inserted 1-2cm into cervix rotated in 360^0 and two slides prepared and subjected to gram stains to detect polymorphonuclear cells and gram negative intracellular diplococcic. Direct smear was made from ulcer if any and stained with giemsa stain for multinucleate giant cells. 5ml of blood was collected aseptically by venipuncture and transferred into sterile test tube for VDRL/RPR (Venereal Disease Research Laboratory)/ Rapid Plasma Reagin test.

The data was statistically analysed.

OBSERVATIONS AND RESULTS

Table 1: Prevalence of STIs/RTIs.

STIs/RTIs	Number & percentage of patients n =203
STIs diagnosed	101(49.7%)
Not diagnosed	102(50.2%)

Of total 203 women, 101(49.7%) were diagnosed to have various STIs by using simple laboratory test (Table 1).

Maximum positivity in women was of bacterial vaginosis 37(18.2%) followed by candidiasis 36(17.7%), nongonococcal cervicitis 26(12.8%), gonorrhoea 1(0.49%) and herpes simplex 1(0.49%) shown in (Table 2).

Table 2: STIs diagnosed by laboratory tests.

Laboratory diagnosed STIs	No. & percentage of symptomatic women	No. & percentage of asymptomatic women	No. & percentage of women involved (n =203)
Bacterial vaginosis	32(25.1%)	5(6.5%)	37(18.2%)
Candidiasis	31(24.4%)	5(6.5%)	36(17.7%)
Non-gonococcal cervicitis	20(15.7%)	6(7.8%)	26(12.8%)
Gonorrhoea	1(0.78%)		1(0.49%)
Herpes genitalis	1(0.78%)		1(0.49%)

Prevalence of STIs was more in age group of 25 to 34 years (Table 3).

Table 3: Prevalence of STIs/RTIs according to age groups.

Age groups	Candidiasis	Bacterial vaginosis	Non gonococcal cervicitis	Gonorrhoea	Herpes genitals
15-24yrs	13(6.40%)	7(3.40%)	2(0.98%)		
25-34yrs	16(7.80%)	21(10.30%)	15(7.30%)	1(0.40%)	1(0.40%)
35-44yrs	4(1.90%)	8(3.90%)	8(3.90%)		
45-49yrs	3(1.40%)	1(0.40%)	1(0.40%)		

Maximum number of patients had vaginal discharge as predominant symptom (62.5%) followed by itching 34(16.7%), pelvic pain 19(9.3%), foul smell 14(6.8%) and irritation 6(2.9%). (Table 4) Women in low socioeconomic status (60.5%) were commonly affected. Mixed infection of bacterial vaginosis (BV) / candidiasis and BV/ non gonococcal cervicitis was seen in 5(2.4%) women. In our study symptomatic 127(62.6%) women were common as compared to asymptomatic women 76 (37.4%). BV was common in symptomatic group 32(25.1%) and nongonococcal cervicitis in asymptomatic women 6(7.8%). (Table 2)

Table 4: Prevalence of symptoms in women.

Symptoms	Number & percentage of women
Vaginal discharge	127(62.5%)
Itching	34(16.7%)
Pelvic pain	19(9.3%)
Foul smell	14(6.8%)
Irritation	6(2.9%)

DISCUSSION

There are scattered reports regarding the prevalence of STIs in India, which vary in different population groups of geographically different regions of the country. The prevalence of STIs / RTIs in this study was (49.7%), which was similar to study by Aggarwal S *et al*. [4]

Rural prevalence may be higher probably because of lack of awareness and inaccessibility of health care system. Similar findings were seen in study by Nandan D *et al*. [5] High prevalence has very serious implications, because if left undiagnosed and untreated, the infections result in serious complications and sequelae, such as, infertility and fetal wastage.

The maximum number (58.1%) of STI positive females were above the age of 25 years and fell in the age group of 25 – 34 years, which correlates with study conducted by Nandan D *et al*. [5] This is the period of maximal sexual activity and is also at the peak of her reproductive career. Hence, the damage caused by these infections is devastating and is also supported by the study of Datey *et al*. [6] The finding that the majority of STI positive women of our study belonged to low socioeconomic status 123(60.5%) indicated that they had unsatisfactory genital hygiene, low level of education, lack of awareness regarding symptoms of STIs/RTIs and availability of few healthcare facilities in rural settings which had played important role in high prevalence of STIs in low socioeconomic status women. Comparatively, low prevalence (17.7%) was observed by studies conducted by Thakur JS

et al. [7] This could be probably because of easy access to health care facilities.

In this study vaginal discharge (62.5%) was predominant symptom which was similar to findings reported in study conducted by Kannan C *et al.* [8] In our study, we found maximum incidence of bacterial vaginosis (18.2%) followed by candidiasis (17.7%), cervicitis (nongonococcal) (12.8%), gonorrhoea (0.49%) and genital herpes in (0.49%) of cases. Similar results were reported by Prasad *et al.* [9] who found bacterial vaginosis in (18%), candidiasis in (10%) and cervicitis (nongonococcal) in (8%). Our findings also correlate well with Puri KJ *et al*. [10] This was in contrast to the study by Fonck *et al.* [11] where candidiasis was more prevalent (46%), followed by trichomoniasis (21%), BV (10%) and gonorrhoea (7%). The higher percentage of trichomoniasis in this study was probably because the study population was recruited from major sexually transmitted infection (STI) referral clinics in Kenya. Higher percentage of gonorrhoea opposite to our study was probably because they had used culture media for diagnosis of gonorrhoea. However, no female in this study was found to be suffering from trichomoniasis infection, syphilis or HIV which was similar to a study by Jindal *et al*. [12]

In our study symptomatic 127(62.6%) women were common as compared to asymptomatic women 76 (37.4%), which corresponds with study conducted by Prasad JH *et al*. [9] Of 76 asymptomatic women, 16 (21%) of them were positive on vaginal smear examination which is comparable with study by Parashar *et al.* [13] They reported asymptomatic STIs in 11.1% of patients. This means, asymptomatic STIs are still prevalent in community and many women are asymptomatic hence may not be seeking treatment, though they may be suffering from disease.

CONCLUSION

RTIs / STIs are quite prevalent in community especially in rural areas. The prevalence of STIs / RTIs in this study was (49.7%), which signifies the need to do outreach activities, information, education or orientation, awareness and behaviour change of rural community to control STIs/ RTIs. This would go a long way in controlling the spread of STIs and in reducing reproductive morbidity among the sexually active population of our country.

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