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Gynaecology

PREVALENCE OF STIS AND OTHER VAGINAL INFECTIONS IN GYNAECOLOGY PATIENTS COMING IN OPD OF A TERTIARY CARE HOSPITAL

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KEYWORDS :

INTRODUCTION

Reproductive tract infections (RTIs) including sexually transmitted infections (STIs) are recognized as major public health problem globally, being the second important cause of healthy life lost among women of reproductive age group in developing countries including India.[1] As per the World Health Organization (WHO), globally 357 million new episodes of sexually transmitted infections (syphilis, gonorrhoea, chlamydia and trichomoniasis) occur yearly; a significant proportion of these infections occurring in developing countries.[2]

There is a wide variation in the prevalence of STIs between countries and also within country among various regions. Studies of STIs in India have revealed a pattern similar to other developing countries. These differences reflected a variety of social cultural and economic factors, which are responsible for infections including HIV/AIDS epidemic. These differences are also marked by proportion of sexually active, young adults, rapid demographic change, high rate of urbanisation and population movements.[3]Based on various studies, the annual incidence of STDs in India is estimated at 5 precent.[4]

Due to limited services for diagnosis and treatment and unawareness of health functionaries and the public about the sexual transmitted infections, mortality and morbidity due to STIs are very high in our country. STIs if remain untreated may lead to serious complication and sequelae.

Not all people with a sexually transmitted infection are symptomatic, not all those who are symptomatic recognize the meaning or importance of their symptoms and seek care and not all those who do seek care are adequately treated.[5] But where does the true burden of disease lie? It is well established that 60–70% of gonococcal and chlamydial infection in women are asymptomatic.[6]

Concerted efforts are needed to provide useful information to health planners and policymakers so that appropriate strategies can be designed to bring about an improvement in reproductive health of women.

MATERIAL AND METHODS

STUDY AREA

This prospective study was conducted in the department of obstetrics and gynaecology at Kamla Nehru state hospital for mother and child, Indira Gandhi Medical College, Shimla. Reproductive age group women (19 to 49 years) who attended the hospital for various complaints were randomly selected for the study. Taking note of previous studies as reference, prevalence has been reported to be 32%, keeping 5% absolute error, the sample was calculated to be 334. [1-5]
Study was intended to be conducted for 6 months and the females reporting to OPD and fulfilling the inclusion criteria were included in the study complete the sample size. Finally 406 females were enrolled at the end of six months.

INCLUSION CRITERIA

1. Female sex of age group 19-49years.
2. Sexually active
3. Give consent for examination and investigation.
4. Presence of vaginal or cervical discharge on examination.

EXCLUSION CRITERIA

1. Menstruating women.
2. Not willing to give consent for examination and investigation.
3. No discharge (vaginal or cervical) on clinical examination.
4. pregnant women
5. patients with genital carcinoma

A total of four hundred and six reproductive age group women fulfilled criteria and were enrolled in study.

A detailed clinical history pertaining to vaginal discharge – its duration, onset, colour, consistency, odour, blood stained or not, cyclical pattern, any exacerbating factors and any associated symptoms like itching, irritation, soreness, dysuria, dyspareunia, fever, inter menstrual or postcoital bleeding and pelvic or abdominal pain were recorded. Further history pertaining to risk factors like recent use of antibiotics or corticosteroid therapy, recent unprotected intercourse, multiple sexual partners, vaginal douching, use of oral contraceptives or intrauterine devices, cigarette smoking, diabetes mellitus or any immunocompromised state; past history of similar complaint or other sexually transmitted infections; treatment history either local or systemic and any other relevant history was obtained. detailed obstetric and menstrual history was also taken.

General physical examination, systemic examination, per abdomen, pelvic examination including inspection of vulva for vaginal discharge, vulvitis, satellite lesions, maceration, cuts, fissures, ulcers, blisters was done. Per speculum examination was done for noticing the colour, consistency, odour of vaginal discharge, vaginitis, cervicitis, cervical discharge and cervical erosions if any. Bimanual pelvic examination was done for adnexal or uterine tenderness, cervical motion tenderness . Examination of regional lymph nodes was also done. Perianal examination of the patients was carried out in adequate light and relevant details were recorded.

On the basis, provisional clinical diagnosis was made which was confirmed by relevant available investigations.

Then vaginal discharge was collected from the upper part of posterior and lateral fornices with sterile spatula and following smears were made:-

1. Saline wet mount preparation:- a drop of normal saline was added to vaginal secretions taken on a clean glass slide then mounted with a cover slip and was examined immediately under microscope for flagellate organism of trichomoniasis and for clue cells of bacterial vaginosis.
2. 10% potassium hydroxide (KOH) preparation: - a drop of 10% KOH was added to the vaginal secretions taken on a clean glass slide and presence of fishy smell was noticed. Then preparation was mounted with a cover slip and seen under microscope for refractile budding yeast cells.
3. Gram staining: - the smear was heat fixed and stained with gram stain and seen under microscope for gram positive pseudohyphae with budding yeast cells and for clue cells of bacterial vaginosis, by the microbiologoist.

Another swab was inserted 1-2cm into cervix rotated in $360^0$and slides prepared. The microscopic examination of gram staining of endocervical secretions for polymorphonuclear cells and gram negative intracellular diplococci was done.

The genital ulcer if present was cleaned with sterile gauge piece. With sterile swab, sample was taken from base of ulcer and slides prepared and sent for examination with giemsa stain for multinucleate giant cells.

5ml of blood was collected aseptically by venipuncture and transferred into sterile test tube and VDRL/RPR (Venereal Disease Research Laboratory)/Rapid Plasma Reagin test was done.

All findings were noted on proforma. Diagnosis was based on clinical criteria and supplemented by laboratory procedure as follows:--

MICROBIOLOGICAL METHODS:

Infection	Lab. Techniques
1. Trichomonas vaginalis.	1. Wet mount. 2. Giemsa stain.
2. Vaginal candidiasis.	KOH (10%)
3. Bacterial vaginosis.	1.Amsel's criteria 2. Gram stain.
4. Nongonococcal cervicitis. (Chlamydia trachomatis)	Gram stain.
5. Gonorrhoea.	Gram stain.
6. Syphilis.	VDRL/RPR
7. Herpes genitalis	Giemsa stain.

Data was analysed using various statistical methods and inferences withdrawn.

OBSERVATION AND RESULTS

Our study was descriptive study done on 406 sexually active women with symptomatic and asymptomatic STIs/RTIs.

The results have been compiled in tabulated form.

Among 406 cases, 254 patients were symptomatic and 152 cases were asymptomatic, making a prevalence of RTI/STI based on symptoms to be 62.56%. the mean age of patients was 30.1 years and 29 years respectively.

Symptom status:

Maximum number of patients had vaginal discharge as predominant symptom (62.5%) followed by itching (16.7), pelvic pain (9.3%), foul smell (6.8%) and irritation in only (2.9%) of cases.

Table 1: Distribution of patients as per symptom status.

Symptom status	Number & percentage of patients
Vaginal discharge	254(62.5%)
Itching	68(16.7%)
Pelvic pain	38(9.3%)
Foul smell	28(6.8%)
Irritation	12(2.9%)

Duration of vaginal discharge:

The maximum number of patients (50.3%) had vaginal discharge for last 2 months, 27.5% for more than 6 months and 22% for last 3-6 months.

Table 2: Distribution of patients as per duration of vaginal discharge.

Duration of vaginal discharge in months	Number & Percentage of patients
<2 months	128(50.39%)
3-6 months	56(22.04%)
>6 months	70(27.55%)

Prevalence of STIs/RTIs:

A total of 202(49.7%) women were found have STIs/RTIs and 204 women were normal.

Table 3: Distribution of prevalence of STIs/RTIs

STIs/RTIs	Number & percentage of patients
STIs diagnosed	202(49.70%)
Not diagnosed	204(50.20%)

Laboratory diagnosed STIs/RTIs:

Bacterial vaginosis was detected in 18.2%, candidiasis in 17.7%, nongonococcal cervicitis in 12.8%, gonorrhoea in 0.49%, herpes genitalis in 0.49% and none in 50.2%. Among these, three patients were positive for bacterial vaginosis & vaginal candidiasis and two patients were positive for bacterial vaginosis & nongonococcal cervicitis.

Table 4: Distribution of patients as per laboratory diagnosed STIs.

	Laboratory diagnosed STIs	No. of patients
	Bacterial vaginosis	64
	Candidiasis	66
	Non-gonococcal cervicitis	48
	Gonorrhoea	2
	Trichomoniasis	0
	Syphilis	0
	BV+VC* (Mix)	6
	BV+ NGC**	4
9.	Others ***	2

***BV + VC imply patient was positive for both bacterial vaginosis and vaginal candidiasis.**

****BV + NGC imply patient was positive for bacterial vaginosis and nongonococcal cervicitis.**

*****Others imply molluscum contagiosum.**

Distribution of symptomatic & asymptomatic STIs:

Of total 406 women, 254(62.5%) women were symptomatic and 152(37.4%) were asymptomatic. Among symptomatic women, bacterial vaginosis 64(25.5%) was predominant followed by vaginal candidiasis 62(24.4%), nongonococcal cervicitis 40(15.7%), gonorrhoea 2(0.78%) and genital herpes 2(0.78%). Among asymptomatic women, nongonococcal cervicitis 12(7.8%) was predominant followed by bacterial vaginosis 10(6.5%) and vaginal candidiasis 10(6.5%).

Table 5: Distribution of symptomatic and asymptomatic STIs.

STIs/RTIs	symptomatic women (254)	asymptomatic women (152)	Total (406)
Bacterial vaginosis	64(25.1%)	10(6.5%)	74(18.2%)
Vaginal candidiasis	62(24.4%)	10(6.5%)	72(17.7%)
Nongonococcal cervicitis	40(15.7%)	12(7.8%)	52(12.8%)
Gonorrhoea	2(0.78%)	-	2(0.49%)
Herpes genitalis	2(0.78%)	-	2(0.49%)

DISCUSSION

Ninety percent of the causes of vaginal discharge is constituted by bacterial vaginosis, vaginal candidiasis and trichomoniasis (**Egan ME et al**)[7]. Also cervical infections by *Neisseria gonorrhoea* and *Chlamydia trachomatis* may cause vaginal discharge. Of these, bacterial vaginosis and vaginal candidiasis are endogenous infections resulting from an overgrowth of organisms normally present in the vagina, they may or may not be transmitted through sex but trichomoniasis, gonorrhoea and chlamydial infection are sexually transmitted diseases. Other non-infective causes include foreign bodies, cervical polyps and ectopy, genital tract malignancies, fistulae, allergic reactions etc. **(FFPRHC and BASHH Guidance)**[8]

WHO has recommended a syndromic management of STI/RTI which is based on signs and symptoms through which a health worker without laboratory support can diagnose. However the sensitivity with this approach is low. 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 **(Ranjan R *et al.*)**[9]

Vaginal discharge (62.5%) was the most common symptom followed by itching (16.7%), pelvic pain (9.3%), foul smell (6.8%), irritation (2.9%) and genital ulcer (0.49%). Similar findings were reported in study conducted by **Kannan C *et al.*[10] Bang *et al*** [11] reported vaginal discharge in 13.5%, pelvic inflammatory disease 24.15%, cervicitis 48.74% and other symptoms 8% in women. In our study symptomatic women were 62.6% as compared to asymptomatic women 37.4%, which correspond with study conducted in **by Prasad *et al***.[12]

The prevalence of STIs / RTIs in our study was (49.7%), which was similar to study conducted by **Nandan D *et al*** in rural area of Agra.[13] Rural prevalence may be higher probably because of lack of awareness and inaccessibility of health care system. Our findings also correlate well with **Savita Sharma** and **BP Gupta** in a study conducted in rural area of Sirmour district in Himachal.[14] Similar findings were seen in hospital based study by **Aggarwal S *et al*** in Shimla district.[15] **Phan Thi**

Lien *et al* [16] reported a prevalence of 21.2% of RTI in women in Vietnam in 1996. Their study revealed a moderate prevalence of RTI (21%), which was substantially lower than that reported in previous studies conducted in Vietnam. This reduced prevalence rate could be due to the fact that a significant number of women in Vietnam were well aware of RTI and underwent treatments. Comparatively, low prevalence was observed by studies conducted in rural areas of Chandigarh (17.7%).[71/17] This could be probably because of easy access to health care facilities.

In our study, we found maximum incidence of bacterial vaginosis (18.2%) followed by candidiasis (17.7%). In addition cervicitis (nongonococcal) was detected in (12.8%), gonorrhoea in (0.49%) and genital herpes in (0.49%) of cases. Similar results were reported by **Prasad *et al*** [12] who found bacterial vaginosis in (18%), candidiasis in (10%) and cervicitis (nongonococcal) in (8%). Our findings also correlate well with **Puri KJ *et al***.[18] This was in contrast to the study by **Fonck *et al*** [19] where candidiasis was more prevalent (46%), followed by trichomoniasis (21% cases), BV (10%) and (7%) gonorrhoea. 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 was probably because they had used culture media for diagnosis of gonorrhoea.

In our study, three patients of bacterial vaginosis had associated candidiasis and two patients of bacterial vaginosis also had cervicitis (nongonococcal). Mixed infections were observed in 22 (5.5%) cases in a study by **Sivaranjini *et al*** [20] probably underestimating the actual prevalence because only 130 out of the 400 women were examined for mucopurulent cervicitis. **De Lima Soares *et al*** [21] in their study on women of reproductive age living in rural communities in north-east Brazil observed that multiple infections were common in their study, with two or more curable STIs occurring in 15% of women. A similar high frequency of multiple infections (30.1%) was observed by **Pickering *et al*** [22] in their study from rural southwest Uganda.

Of 152 asymptomatic women, 32 (21%) of them were positive on vaginal smear examination which is comparable with study by **Prasher *et al*** in Shimla city in 2006.[23] They reported asymptomatic STIs in 11.1% of patients. This means, many women are asymptomatic hence may not be seeking treatment, though they may be suffering from disease.

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