SEXUALLY TRANSMITTED DISEASES : PREVALENCE IN WOMEN ATTENDING FAMILY WELFARE CLINICS

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SUMMARY

Prevalence rates of eight sexually transmitted diseases (STDs) were studied in 356 women attending family welfare clinics (Contraceptive users, non-users and reproductive endocrine infertility subjects). Cervical swab cultures; wet vaginal smear microscopy, endocervical and exocervical Papanicoloau smears and serological tests were carried out. The prevalence rates were, gonococci 0.8%, bacterial vaginosis 7.5%, human papilloma virus 2.4%, herpes simplex virus 1.6%, moniliasis 2.9%, trichomonas vaginalis 3.2%, Hepatitis B Antigen 15.9% (RPHA method), 3.3 (CEP method) and syphilis nil. The prevalence of chlamydia was 5.4% based on cytological changes presumptive of diagnosis of chlamydia. The overall prevalence of all STDs were 28.4% (excluding chlamydia) and 32.6% (including chlamydia).

INTRODUCTION

The world wide increase in incidence of sexually transmitted diseases (STDs) and wider spectrum of 32 infections now recognised as STDs has made this group of conditions a very important global health problem (Fathalla et al 1990; Holmes 1987; WHO 1986).

The pathological effects of STDs occur on all body systems and their sequelae have important effects in the future life of the index individual, sexual partner(s) and progeny. The primary symptoms and signs of most STDs are mild, intermittent or selflimiting, localised and often treated inadequately or neglected. Secondary and tertiary effects include more severe manifestations affecting reproductive functions, disseminated and systemic manifestations involving cardiovascular, neurologic, urologic and lymphatic systems. The clinical manifestations are more obvious in men than in women, but the morbidity is more severe in women than in men (Fathalla et al 1990; WHO 1986).

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Several studies have reported incidence or prevalence of single STDs from hospital or STD clinics but it is difficult to know its prevalence in the general, asymptomatic female population (Bang et al 1989; Dhall et al 1990; Kapur 1982; Makroo et al 1989). This study was therefore undertaken to note the prevalence rate of some of the STDs in women attending the family planning and infertility clinics of the Institute.

MATERIAL AND METHODS

A total of 356 women attending the Institue's urban family planning (F. P) and reproductive endocrine infertility clinics, were enrolled in this study. Detailed history, general, systematic and gynaecological examinations were carried out. The following investigations for STDs were conducted :

a) Wet vaginal smear microscopy for presence of pus cells, coccobacilli, trichomonas vaginalis and monilial hyphae.

b) Swabs taken from the endocervix for bacteriological culture were transported in Stuarts medium to the laboratory for Gram staining and innoculation on Thayer-Martin medium, oxidase reduction fermentation followed by subculture on DST Agar (Diagnostic Sensitivity Test Agar-Oxoid) to detect gonococci and other organisms i.e. ß hemolytic streptococci, gardnerella vaginalis, pseudomonas, proteus, klebsiella, E. Coli, staphylococcus aureus and yeast.

c) Exocervical and endocervical smears using Ayre's spatula were fixed in 95% ethyl alcohol; stained by Papanicolaou method and screened for cytological abnormalities and STDs i.e. trichomatis vaginitis (TV), moniliasis, bacterial vaginosis (BV), chlamydia trichomatis infection (CT), herpes simplex virus infection (HSV) and human papilloma virus infection (HPV) (Gupta et al 1979; Holmes 1987; Kapur 1982; Schnadig et al 1989; Thin et al 1975; WHO 1986).

d) Venous blood collected for Venereal Diseases Research Laboratories (VDRL) fluocculation test and detection of Hepatitis B surface Antigen (HBsAg) by the reversed passive hemagglutination inhibition (RPHA) and counter immunoelectrophoresis (CEP) method (Shanmugan et al 1981; Shaw et al 1986). The women were grouped as follows :-

Group 1 : Contraceptive non-users i.e. parous women not using any contraceptive (n = 141).

Group 2 : Contraceptive users i.e. women using copper T 200 in trauterine contraceptive device (IUCD) (Model T Cu B) for a minimum period of 3 months (range 3 months to 7 years; average duration 20.1 months) (n = 141).

Group 3 : Women attending reproductive endocrine infertility clinic of IRR (n = 75). Statistical analysis were done by Chi Square test.

RESULTS

A total 356 women were screened for the following STDs gonorrhoea, moniliasis, TV, BV, CT, HSV, HPV syphilis and hepatitis B. These women were between 19-44 yrs of age and from low and middle socio-economic groups. The parity of the women from FP clinics ranged from 1-6, 96% (n = 342) women were asymptomatic while 4% (n = 14, i.e. 6 non-users and 8 users) had complaints of slight vaginal discharge. In 18 women cervical erosions were noted on per speculum examination though all these women had no complaints.

A total of 32.6% women were detected to have one or more STD by using the above methods. The prevalence rates for the various STDs do not show statistically significant differences between the 3 groups studied.

Table I shows the positive findings by Pap smear and wet smear microscopy in the 3 different groups of women. Bacterial vaginosis was the most commonly detected STD (7.3%) in the subjects studies. The next frequent were changes suggestive of viral STDs (HSV and HPV) as observed in 3.3% (n = 12 women.

Table I

Results of Cytology and Wet Smear microscopy in women screened for Sexually Transmitted Diseases

Organism detected	Contraceptive non users No. (%)	IUCD[a] users No. (%)	Endocrine infertility No. (%)	Total No. (%)
No. of subjects	141 (100)	140 (100)	75 (100)	356 (100)
Monilia	6 (4.2)	2 (1.4)	2 (2.7)	10 (2.8)
T. Vaginalis[b]	6 (4.2)	4 (2.8)	2 (2.7)	12 (3.2)
B. Vaginosis[c]	7 (4.9)	15 (10.7)	4 (5.3)	26 (7.3)
HSV[d]	3 (2.1)	3 (2.1)	0 (0.0)	6 (1.6)
HPV[e]	5 (3.5)	3 (2.1)	0 (0.00	8 (2.2)

P not significant in all groups.

a = IUCD-Intra Uterine Contraceptive Device

b = T. Vaginalis = Trichomonas vaginalis

c = B. Vaginosis = Bacterial vaginosis

d = HSV = Herpes simplex virus changes

e = HPV = Human papilloma virus changes

Table II

Results of Serological Tests in women screened for Sexually Transmitted Diseases

		Contraceptive non users No. (%)	IUCD[a] users No. (%)	Endocrine infertility No. (%)	Total No. (%)
No. of subjects		141 (100)	140 (100)	75 (100)	356 (100)
HBsAg[b]	CEP	8 (5.6)	3 (2.1)	1 (1.3)	12 (3.3)
	RPHA	25 (17.7)	24 (17.8)	9 (12)	58 (15.9)
VDRL[c]		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

P not significant in all groups.

a = IUCD-Intra Uterine Contraceptive Device

b = HBsAg - Hepatitis B surface Antigen

c = VDRL - Venereal Diseases Research Laboratories

Amongst these, 3 women had cervical cytological changes suggestive of both HSV and HPV. In 5 women these viral changes were associated with CIN I or II.

Though cytology is not a sensitive method of diagnosis for chlamydia, cytological changes as described by Gupta et al (1979) and Kiviat et al (1985) are suggestive of a presumptive diagnosis in the absence of the more expensive procedures. Chlamydia was thus noted in 5.4% of women in this study (n = 20).

The prevalence of serologically detected STDs has been tabulated in Table II. There were no women positive for syphilis by the VDRL test. Hepatitis B was detected in 15.9% women by the RPHA test and 3.3% by the CeP method; both methods are used to detect HBsAg.

Table III gives the results of bacteriological studies. Gonoccoci were observed in 3 women, one in each of the 3 groups i.e. users, non users and infertility cases, an overall prevalence rate of 0.8%. There was no statistically significant difference between the 3 groups. The CuT 200 users had no symptoms or positive history suggestive of STDs and had used CuT for 6 months. The non-user had a history of a spontaneous first trimester abortion followed by dilatation and curettage 2 months prior to the test. The third woman was married since 4 years, had no positive history or symptoms and was being investigated for primary infertility. The organisms in all 3 subjects were sensitive to penicillin and routine antibiotics tested in in-vitro cultures (i.e. penicillin, streptomycin, tetracycline, chloramphenicol, gentamicin and trimethoprim). Fourteen subjects (3.9%) had more than one type of STD, 12 women had 2 STDs while 2 women had 3 types of STDs detected by the above procedures.

DISCUSSION

STDs may be present in women without specific symptoms and hence remain undetec-

Table III

Results of Bacteriological Studies in women screened for Sexually Transmitted Diseases

Organism detected	Contraceptive non users No. (%)	IUCD[a] users No. (%)	Endocrine infertility No. (%)	Total No. (%)
No. of subjects	141 (100)	140 (100)	75 (100)	356 (100)
Gonococci	1 (0.7)	1 (1.7)	1 (1.4)	3 (0.8)
Pathogens[b]	65 (46.0)	62 (44.3)	22 (29.3)	149 (41.9)
Non-pathogens[c]	21 (14.9)	22 (15.7)	11 (14.7)	54 (15.2)
Sterile	55 (39.0)*	57 (40.7)*	42 (56.0)*	154 (43.3)

* $P < 0.05$ (significant)

a = IUCD - Intra Uterine Contraceptive Device

b = Pathogens include B hemolytic streptococci, gardnerella vaginalis, pseudomonas proteus, klebseilla, E. coli, candida albicans, staphylococcus aureus and yeast.

c = Non-pathogens include diphtheroids and staphylococcus albus.

ted, therefore, untreated though equally transmissible as from symptomatic subjects. Current trends in sexual behaviour, contraceptive use, changed life style and improved diagnostics have led to an increase in the number of STDs diagnosed throughout the world including India. The WHO expert committee has labelled STDs as a major health hazard. (Fathalla et al 1990; Holmes 1987; WHO 1986).

In the present study 96% of the women screened were asymptomatic, the total prevalence rate of all the STDs studied was 32.6%, and fourteen women (3.9%) had 2 or more STDs detected as detailed above. Though several newer diagnostic aids are available and recommended, their high cost or complexity make their routine use impractical as a screening procedure for our country (Dhall et al 1990; Fathalla et al 1990; Holmes 1987; Kiviat et al 1985; WHO 1986). Cervical cytology is a common routine investigation and a few more (Pap smear) slides and swabs prepared and screened at this time, along with blood sampling can identify 9 common STDs in women, with affordable financial inputs.

Kapur (1982) reviewed the magnitude of the problem of STDs in India, based on results of a number of studies which were conducted in different geographical regions and socio economic groups, hence wide variations are noted.

Viral STDs (HSV, HPV, hepatitis B virus) cause morbidity in the subject and offspring and even mortality due to cervical and other cancers. Genital herpes is mild/being in majority of women, but the viral shedding, recurrences, association with carcinoma and the risk of transmission to the newborn are serious consequences (Fathalla et al 1990; Holmes 1987; Shaw et al 1986; WHO 1986). In this study CIN I or II alongwith cytological changes suggestive of HSV infection were observed in 5 women. Many Papanicolaou smears showing CIN I or II are associated with HPV infection of the cervix. Changes suggestive of HPV were associated with CIN I or II in 3 subjects. There was one woman who complained of vaginal discharge and had a condyloma on the vulva. Her cytology revealed changes due to viral infection, (both HSV and HPV) and CIN II. She was a contraceptive nonuser.

Shaw (1986) states that 5-10% Hepatitis B infected adults remain serum positive for more than 6 months. In our groups none of the women had acute infection or history suggestive of blood transmission. Two women had infective hepatitis 9 and 11 years ago. All women had a middle class socio-economic background, attended public hospitals and private clinics during past pregnancies, deliveries, investigations for infertility or other illnesses and received tetanus toxoid immunisation antenatally. Inadvertent innoculation could have occurred via reused needles and syringes. These factors probably resulted in a higher prevalence (15.9% by RPHA) of HBsAg compared to the local general population (4.5%) i.e. voluntary blood donors from Bombay as reported by Joshi et al 1979. Shanmugan et al 1981 report an overall carrier rate of 11% from Kerala STate and three and half fold higher detection by RPHA than by CEP method. In the present study there is a three fold higher detection rate with RPHA compared to CEP method. Makroo et al 1989 observed a prevalence rate of 1.11% in blood donors in Kashmir (professional donors and those with history of jaundice in the last 5 years were excluded).

AIDS an important viral STD, has not been investigated in this study group. HIV infection and other STDs frequently co-exist in the same individual.

Contraceptive use is reported to affect the occurrence and spread of certain STDs (Bang et al 1989; Fathalla et al 1990; Holmes 1987; WHO 1986). In the present data there is no statistically significant difference in the prevalence rates of any of the STDs in the 3 groups of women screened ($P > 0.05$). This could be due to the general trend of single sexual partner

relationship in these women.

Gonococcal infection, one of the original triad of diseases referred to as statutory venereal diseases was isolated in 0.8% of women (n = 3). Dhall et al (1990) noted an overall incidence of 1.84% gonococcal infection in 217 women attending a gynaecological outpatient clinic in North India.

The importance of chlamydial infections is due to the resultant maternal morbidity and perinatal morbidity and mortality i.e. pelvic infections, infertility, fetal wastage, preterm labour and perinatal infections (Fathalla et al 1990; Holmes 1987; WHO 1986). Though the sensitivity of cytological diagnosis is low, this is an economic and simple procedure which is relevant in developing countries (Kiviat et al 1985).

Sterile cervical cultures were observed in 39% non users 40.7% users and 56% infertility group. This difference between the family planning and infertile groups was statistically significant ($P < 0.05$), which can be attributed to the use of antibiotics by the infertile women during the course of their routine investigations carried out before the smears were taken.

CONCLUSIONS

This study reveals that even among asymptomatic women about one in three women has some STD which if undetected and untreated, can lead to complications in the index woman, her sexual partner(s) or children. It is therefore worthwhile screening all women attending clinics or through camp approach to exclude STDs in all sexually active women. Gynecological and STD screening should be part of primary health care in developing countries.

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