Original Article

Vaginitis and Sexually Transmitted Infections in a Hospital Based Study

Shehla Sami, Shahnaz Naseer Baloch*
Gynae Unit 1, Department of Obstetrics and Gynaecology*, Bolan Medical Complex Hospital, Quetta.

Abstract

Objective: To determine the frequency of Sexually transmitted infections (STIs) in immigrant population versus the local population, comparing the symptomatic patients against the asymptomatic women as controls.

Methods: A cross-sectional comparative study was conducted in Gynaecology Clinic of Unit 1, Bolan Medical Complex Hospital, Quetta. The study duration was six months from 1st April, 2004 to 31st October, 2004, examining 500 women. World Health Organization (WHO) recommended questionnaire was answered and High Vaginal Swab (HVS) was taken from posterior fornix of patient's vagina. Gram staining was done by the Pathology Department of the same hospital and description was based on Nugent's score and modified Spiegel's criteria. Blood was analyzed for human immunodeficiency virus (HIV) and hepatitis-B surface antigen (HBsAg) by immunochromatography. Analysis of results was done by Chi square test, screening test validity and incidence testing.

Results: Women with vaginal discharge had higher incidence of STI (84%) than without it (38%). Refugees and women with grand multiparity made the high risk groups of targeted testing (P <0.001). The commonest notifiable infections, in this study were vaginitis (33.48%), bacterial vaginosis (30.7%), candidiasis (10%), trichomoniasis (7.2%), gonorrhea (1.35%) and 1 case each of lymphogranuloma venereum and chancroid, and 3 carrier states of HbsAg were detected. No case of syphilis or HIV/AIDS, or genital herpes was found.

Conclusion: This study will serve as a marker for the tip of an iceberg of STI in Balochistan, needing targeted testing in high risk groups (JPMA 55:242;2005).

Introduction

Sexually transmitted infections (STI) have shown an alarming increase in the third world countries of Asia and Africa. STIs may be classified into curable infections as Gonorrhea, Chlamydia, Syphilis, Trichomoniasis and chancroid, and STIs that can be prevented but remain incurable are viral infections as human immunodeficiency virus (HIV), herpes simplex virus and hepatitis B virus.

World Health Organization (W.H.O.) estimated that 333 million new cases of curable STIs occur in the world every year.[1] The efforts to control STIs in developing countries are hampered by insufficient number of S.T.I clinics to cater for the population needs, non availability of suitable diagnostic facilities and appropriate drugs.[2] There is currently no STI reporting system in Pakistan, and therefore information about STI prevalence is limited.[3] The country's high fertility rate of 5.6 and low contraceptive use rate suggest the potential for rapid spread of STI.[3] Bacterial vaginosis is the most prevalent infectious cause of vaginitis found in 35% of women with vaginal discharge.[4] Gonorrhea, genital warts, nongonoccocal urethritis and genital herpes were found in another study as significant STIs.[5] Gonorrhea and syphilis are commonly seen STIs in Pakistan.[6]

The objective of the study was to determine the frequency of sexually transmitted infections (STIs) in immigrant population versus the local population, comparing the symptomatic patients against the asymptomatic women as controls.

Patients and Methods

It was a cross-sectional comparative study conducted in gynaecological clinic of Unit 1, Bolan Medical Complex, Quetta. The study duration was of six months from 1st May 2004 to 31st October 2004. A total of 500 women were recruited from the gynae out patient department (O.P.D) from an average attendance of more than 1000 women per month, by convenience sampling method. Women who had recently used antibiotics in past four weeks , patients previously operated or with history of surgery for sequelae of pelvic inflammatory disease (P.I.D), women not returning for atleast one follow-up visit and women with genital prolapse were excluded.

All women of child bearing age (15 - 45 years) who were sexually active and not pregnant , having symptoms of lower genital tract infection, answered the WHO recommended Questionnaire, filled by the author. Verbal informed consent was a pre-requisite for testing. The multi ethnic population of Pashtoon, Baloch, Persian, Punjabi, were considered in addition to refugees from Afghanistan and Iran. A thorough gynaecological examination was performed only on women not menstruating or bleeding at the time of examination. Erythema, fissures, superficial vulvovaginal ulcerations, erosions and character of vaginal discharge was noted. Otherwise, if consent given, they were asked to revisit when menstruation/bleeding had ceased.

High vaginal swab (H.V.S.) from the posterior fornix of patient's vagina was collected using Cuscos bivalve speculum for exposure and H.V.S sticks and analyzed by the pathologist with gram staining using Nugent's description[7] and the modified Spiegel's criteria.[8] If result indicated, then further urethral and endocervical swabs were also collected and tested by gram staining.

Blood samples were collected from the patient for H.I.V and hepatitis B surface antigen testing by immuno chromatography and confirmation of positive test by enzyme linked immunoassay (ELISA) testing.

Analysis of result was done by Chi Square test with $P<0.05$ taken as significant, for proportion of patients with variables as immigrant status, number of sexual partners, socio economic class and awareness about STI. Age and parity were analyzed by measures of central tendency. Disease (STI) frequency was analyzed by prevalence estimation, and sensitivity and specificity of H.V.S. testing was determined. Exposure rates in index cases were calculated by odds ratio (OR).

Results

Women with vaginal discharge had higher incidence of STI (84%) than without it (38%) (OR with vaginal discharge = 5.31; OR without discharge = 0.61; OR 8.7). Out of total 500 women recruited, 221 were symptomatic, therefore incidence rate of STI was 3952/100,000 per 6 months and period prevalence of 3.95%. STI in refugees (156 $P<0.001$) and women with grand multiparity (164 $P<0.01$) make them high risk group for targeted testing. The commonest infections in this study were vaginitis (74 cases 33.48%), bacterial vaginosis (68 cases 30.7%), candidiasis (22 cases 10%), trichomoniasis (16 cases 7.2%), gonorrhea (3 cases 1.35%), lymphogranuloma venereum (1 case 0.45%), chancroid (1 case 0.45%), hepatitis B (3 cases 1.35%); but no cases of HIV/AIDS, syphilis or genital herpes were detected. Awareness about STI and high risk behaviour(regarding multiple sexual partners and intravenous drug abuse)determined from history (questionnaire), was maximum in the patients living within 5 km of hospital as compared to those living more than 5 km away ($P<0.02$) (Table 1). Risk factors related to STI prevalence in this study

Table 1. Knowledge on STI related to distance of residence from hospital.

Distance	Knowledge of STI	None	Total
< 5Km	58	76	134
5-10 Km or more	23	64	87
Total	81	140	221

$P<0.02$

Table 2. Risk factors for STI.

Risk factors	STI Cases	%	P Value
1. Occupation of Husband (labourer or jobless)	146	70	<0.001
2. Smoking in Women (both past and current)	186	84.16	<0.001
3. Vaginal douching	106	48	<0.001
4. Contraceptive practice	71	32	<0.50
5. Ethnicity: Pashtoon	124	56	<0.001
6. Multiple sex partners or history of extramarital sexual encounter	0	0	-

*1 STI in women with spouse/husband being jobless/labourer class ($p<0.001$).

*2 STI in refugees (Pashtoons and Persians/Balochs) versus local population ($p<0.001$).

prevalence in this study were low socioeconomic status that is labourer/jobless class and smoking (Table 2). HVS with gram staining as screening test for STI with vaginal discharge showed sensitivity of 64% and specificity of 83%.

Discussion

The largest province of Pakistan, Balochistan has a population of 65 lakhs, with 76% of population being in rural setup.[9] The high fertility rate of Pakistan (5.03) and low national contraceptive prevalence use of 18% appears to have alarming potentials for the spread of STI.[9] The additional burden of Afghani and Irani refugees have added to socioeconomic and health care burden. A study done in Karachi found 17% syphilis and 2.9% gonorrhea cases;[3] wheras 2.8% cases of HIV were detected at Quetta.[3] Our results contrasted from these studies as no cases of syphilis or HIV were detected, probably being hospital-based study. Reproductive tract infections (both STI and iatrogenic infections) in Africa constitute for 17-40% of admissions to gynaecology ward and 15-37% in South East Africa.[6] UNICEF estimated that only 55% of total population in Pakistan live within 5km or an hour's walk from any fixed health facility,[6] which is in conformity with the results of this study where STI prevalence and lack of awareness was maximum in those living more then 5km away from hospital. Vaginitis accounts for an estimated 10 million office visits each year[10], which was also the case in this study with 33% cases of vaginitis. Aerobic vaginitis, with or without bacterial vaginosis was found in one study to be 14% in gynae clinic.[11] Bacterial vaginosis was found in 20% of obstetric population in Karachi,[12] chlamydia with vulvar pain in 8.3%[13], whereas another study stated the overall prevalence of chlamydia as 4.8% in United Kingdom.[14] Gonorrhea was the most prevalent STI in one study of NWFP, Pakistan, with genital herpes in 5%, lymphogranuloma venereum (LGV) 3% and chancroid in 1% cases.[5] The present study also detected low prevalence of LGV and chancroid and gonorrhea. Although only 3 cases of hepatitis B were found in this study, one study quoted figures as high as 12%.[15] No case of HIV was detected, whereas National AIDS Control Programme reported 1735 HIV infections including 199 cases of AIDS.[16] This study found high specificity of gram staining as screening test which has been shown in other resource-poor settings a better test than clinical criteria (91% sensitivity versus 46%).[17] No case of chlamydia or syphilis was found in this study, but there were financial limitations for conducting chamydial culture or PCR and serological testing for syphilis was limited to cases with history of rash or ulcers, once again due to resource implications.

In a resource-poor setting as in this study, STI screening should be targeted towards high risk groups comprising of refugees, grand-multipara, smoking and poor socioeconomic strata with husbands belonging to labour class with poor hygiene and STI awareness. Gram staining is a simple, cost-effective and sensitive screening test for STI with symptoms. Women diagnosed with one STI should be screened for other STI with full bacteriological and serological tests. Screening and treatment of partners and follow-up tests of cure should be performed where possible. Barrier contraceptive use, STI awareness programmes and hazards of blood transfusion and intravenous -drug abuse should be promoted and patterns of labour migration both within and outside the country should be checked.

Acknowledgements

I feel greatly indebted to Dr. Nadeem Samad Sheikh in providing the HVS Sticks for conducting this study and getting the laboratory diagnosis free of cost. I also owe special gratitude to my father for proof reading the article and Mr. Mohammad Akhtar for typing the manuscript.

References

1. Jrondi S, Mahjour J. New strategies for control of STD in Morocco. EMR AIDS News 1998;2:2-4.
2. Akhtar S, Luby SP, Rahbar M.H. Multivariate Analysis of risk factors associated with genital ulcer disease among incarcerated males in Sindh. J Pak Med Assoc 2000;50:115-20.
3. Atiq A, Ansari FM, Valente I, Aziz SA. STI data. Pakistan country profile 2002 ; UNAIDS, Islamabad; 1-26.
4. Iftikhar R. Diagnosis of Bacterial vaginosis by Amsel's criteria. J Coll Physicians Surg Pak 2003;13:76-8.
5. Khan I, Rizvi K, Javed M, Shah SH. Pattern of sexually transmitted diseases in Hazara Division. J Ayub Med Coll 1995;7:28-9.
6. Khan NH, Hussain K, Kanjee SA, Wahid Z. Reproductive tract infections:a manual for physicians, reproductive health. Coll Physicians Surg Pak 2002;12: 150-8.
7. Vermeulen GM , van Zwet AA, Bruinse HW. Changes in the vaginal flora after two percent clindamycin vaginal cream in women at high risk of spontaneous preterm birth. Br J Obstet Gynecol 2001;108:697-700.
8. Crowley T, Low N, Turner A , Harvey I, Bidgood K, Horner P. Antibiotic prophylaxis to prevent post abortal upper genital tract infections in women with bacterial vaginosis: randomized controlled trial. Br J Obstet Gynecol 2001;108:396-402.
9. Sami S, Baloch SN. Maternal Mortality in Balochistan: a challenge for the Obstetricians. J Coll Physicians Surg Pak 2002;12:468-71.
10. Nyirjesy P. Vaginitis in adolescent patients. Pediatr Clin North Am 1999; 46;733-45.
11. Donders GGG, Vereecken A, Bosmans E, Dekeersmecker A, Salambierr G, Spitz B. Definition of a type of abnormal vagional flora that is distinct from bacterial vaginosis: aerobic vaginitis. Br J Obstet Gynecol 2002;109:34-43.
12. Korejo R, Shah AA, Noorani K. Prevalence of bacterial vaginosis in asymptomatic pregnant women and its effect on outcome of pregnancy. J Surg Pak 2000;5:3-5.
13. Tchoudomirova K, Mardh PA, Helberg D. Vaginal microbiological flora, and behavioral and clinical findings in women with vulvar pain. Br J Obstet Gynecol 2001;108:451-55.
14. Macmillan S, Mckenzie H, Flett G, Templeton A. Which women should be tested for chlamydia trachomatis? Br JObstet Gynecol 2000;107:1088-93.
15. Mahmood A. Hepatitis B virus: prevalence in Karachi. J Coll Physicians Surg Pak 2000;10:107-8.
16. Farid R, Chaudhry AJ. Knowledge about AIDS/HIV: infection among female college students. J Coll Physicians Surg Pak 2003;13:135-7.
17. Tam MT, Yungbluth M, Myles T. Gram stain method shows better sensitivity than clinical criteria for detection of bacterial vaginosis in surveillance of pregnant, low income women in a clinical setting. Infect Dis Obstet Gynecol 1998;6;204-8.