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INTRAUTERINE DEVICES AND REPRODUCTIVE TRACT INFECTIONS: A CROSS-SECTIONAL STUDY IN URBAN SLUM

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ABSTRACT

Introduction: The concern that intrauterine devices (IUDs) might cause or facilitate reproductive tract infection has limited its use.

Objectives: The study aims to explore the relationship between reproductive tract infections & IUD use.

Materials and Methods: A hospital based cross sectional study conducted in STI/RTI Clinic located in urban slums of Mumbai, involving total 169 married females of reproductive age group who presented with symptoms of RTI and using atleast one type of contraceptive method, who attended OPD from January to March 2012. Tool for interview was the questionnaire about sociodemographic profile, contraceptive practices, and symptoms of the participants. Disease specific laboratory methods were used to confirm diagnosis of RTI.

Results: 47(27.81%) females were using IUD as contraceptive method in this study. Proportion of the symptoms was more among IUD users than non IUD users. 33(70.2%) had suffered from STI / RTI who were using IUDs as compared to 63 (51.6%) non-IUD users showing statistically significant association.

Conclusion: There is a statistically significant association between use of IUD and RTI.

Key words: IUD, RTI, contraceptive practices

INTRODUCTION

Reproductive Tract Infections (RTIs) including sexually transmitted infections (STIs) and HIV/AIDS are being increasingly recognised as a serious public health problem. RTIs cause suffering both to men and women, but their consequences are far more devastating and widespread among women.[1]They include three types; the" sexually transmitted disease", the endogenous infection caused by over-growth of organisms present in the genital tract and finally infections associated with medical procedures that manipulate the genital tract as unsafe abortion, pelvic examination, and IUD insertion.[2]

Intra Uterine Device (IUD)is one of the most popular contraceptive methods used worldwide, the most common type is Copper IUD.[3]A thought that intrauterine devices (IUDs) might cause or facilitate gynaecologic infection has a long and controversial history, dating to the 1940s.[4]Concern about upper-genital-tract infection related to intrauterine devices (IUDs) limits their wider usein spite of highest rates of continuation and this thought has dominated decisions on its use throughout the world, In several mostly retrospective studies the incidence of PID was suggested to be as high as three- to ninefold in IUD users compared to non-users. RTI among IUD users is most strongly related to the insertion process and to background risk of STI/RTI.[5] Although

many studies have been conducted in various parts of country with the aim to document association of STIs/RTIs and IUD, yet there is a lack of sizeable literature from urban slums.The current study was undertaken to fill this existing lacunae.

The aim of this study is to explore the presence of RTI symptoms among women using IUD and find relationship between IUD use and RTI.

MATERIALS AND METHODS

The study population consisted of symptomatic women residing in urban slums of Mumbai who visited STI/RTI clinic to get cured of their complaints. This clinic is affiliated to Department of Community Medicine, Topiwala National Medical College and BYL Nair Hospital, Mumbai. The study aims to explore the relationship between reproductive tract infections & IUD use which includes willing and married women in reproductive age group, using at least any one type of contraceptives. Out of 411 females who attended OPD during study period, 173 were excluded from the study as they did not fulfill the inclusion criteria and 62 were not willing for laboratory tests or internal examination done to confirm the diagnosis. About 7 participants who either widow or divorced are excluded due to denial of active sexual history. So, finally total 169 participants were enrolled in the study. Approval from the institutional ethics committee was sought before the start of study.

Data Collection: Data was collected between 1st January 2012 to 31st March 2012 using semi structured interview and reports of laboratory analysis of collected specimen. The purpose of the study was explained to each woman and informed consent was also obtained.

Instrument: A structured questionnaire interview was the main instrument. The Questionnaire consisted of three parts. first focused on sociodemographic characteristics of respondents in terms of women's age, education, occupation, type of family and socioeconomic class. The second part allows us to collect information about the contraceptive practices used by the study participants. The third part was about the symptoms of STI/RTI in the form of vaginal discharge, itching or lesions over genitals, burning micturation, menstrual irregularities, lower abdominal pain, dyspareunia and any other complaints.

Laboratory analysis: Endocervical swab for gonococcal infection was obtained by inserting a sterile cotton swab into cervical canal , rotated for 30 seconds and withdrawn, smear was prepared and sent for gram staining.Two sterile cotton tipped swabs were inserted simultaneously in the posterior fornix of vagina and rubbed against the vaginal wall to obtain the vaginal swabs. The swabs were immediately transferred to the laboratory without delay for wet and saline mount preparations for diagnosis of specific RTI. Blood samples were sent for RPR and HIV testing.

Data analysis: The data collected through the questionnaire and results of thelaboratory tests were entered and computed using SPSS version 17 and applying $\chi 2$ test with $p = 0.05$ level ofsignificance.

RESULTS

Total participants enrolled in the study were 169. The table 1 of results shows that maximum 62(36.7%) participants were in age group of 26-30 years, 147(87%) were Muslim by religion, 55(32.5%) were educated upto secondary level of education. Among the study participants, most of them 103(60.9%) were living in nuclear type of family and belonging to class IV 83(49.1%). Out of total 47(27.81%) were using IUD as contraceptive method. 122(72.19%) had preferred other methods of contraception over IUDs.

Table 1.Sociodemographic profile of the study population

Sociodemographic Variables	IUD users (n=47)(%)	IUD non users (n=122) (%)	Total (n=169)(%)
Age In Years			
16-20	1(2.1)	6(4.9)	7(4.1)
21-25	23(48.9)	29(23.8)	52(30.8)
26-30	12(25.5)	50(41)	62(36.7)
31-35	7(14.9)	26(21.3)	33(19.5)
36-40	2(4.3)	11(9.0)	13(7.7)
41-45	2(4.3)	0(0.0)	2(1.2)
Religion			
Hindu	2(4.3)	20(16.4)	22(13)
Muslim	45(95.7)	102(83.6)	147(87)
Education			
Iliterate	10(21.3)	26(21.3)	36(21.3)
Primary	18(38.3)	31(25.4)	49(29)
Secondary	9(19.1))	46(37.7)	55(32.5)
HSC and above	10(21.3)	19(15.6)	29(17.2)
Occupation			
Unemployed	42(89.4)	114(93.4)	156(92.2)
Unskilled	2(4.3)	2(1.6)	4(2.4)
Semiskilled	1(2.1)	3(2.5)	4(2.4)
Skilled	2(4.3)	3(2.5)	5(3.0)
Type of Family			
Joint	22(46.8)	34(27.9)	56(33.2)
Nuclear	23(48.9)	80(65.6)	103(60.9)
Three generation	2(4.3)	8(6.5)	10(5.9)
Socioeconomic			
class I	0(0.0)	2(1.6)	2(1.2)
class II	2(4.3)	13(10.7)	15(8.9)
class III	6(12.7)	28(23)	34(20.10
class IV	28(59.6)	55(45.1)	83(49.1)
class V	11(23.4)	24(19.7)	35(20.7)

Table 2: Distribution of the symptoms of STI/RTI among IUD users and nonusers

Symptoms	IUD Users	IUD Non Users
White Discharge	93(40.78)	47(38.53)
Lower Abdominal Pain	38(16.67)	19(15.58)
Lesions Over Genitals	13(5.70)	9(7.38)
Itching Over Genitals	15(6.57)	18(14.75)
Burning Micturation	17(7.45)	6(4.92)
Inguinal Swelling	1(0.43)	0(0.00)
Backache	37(16.22)	18(14.75)
Menstrual Irregularities	6(2.64)	3(2.45)
Dyspareunia	4(1.77)	2(1.64)
Others	4(1.77)	0(0.00)
Total	228(100)	122(100)

Figure in parenthesis indicate percentage; *participants were presented with more than one symptoms of STI/RTI.

Table 3.Association Between IUD use & STI/RTI

Use of Intrauterine Devices (n = 169)	STI / RTI		P Value
	Present (%)	Absent (%)	
IUD Users	33 (34.4)	14 (19.2)	0.029
IUD Non-Users	63 (65.6)	59 (80.8)	
Total	96 (100)	73 (100)	

Among the IUD users, maximum 23 (48.9%) were in the age group of 21-25 years of age group, 45(95.7%) were Muslim by religion and 18(38.35) were educated upto primary level of education. Considering the occupation, 42(89.4%) were unemployed. Most of the IUD users were living in either nuclear 23(48.9%) or joint 22(46.8%) type of family. 28(59.6%) women were belonging to class III of socioeconomic classification by B.G.Prasad.

Table 2 shows comparison between the symptoms among IUD users and nonusers. Proportion of the symptoms was more among IUD users than non users. Most common symptom in both was white discharge but proportion was more among IUD users (40.78%). Lower abdominal pain was complain among (16.67%) IUD users as compared to (15.58%) non IUD users. Lesion and itching over genitals were more among non IUD users in the proportions (7.38%) and (14.75%) respectively. Complaints of Inguinal swelling and backache were found to be more among IUD users. Proportion of menstrual irregularities and dyspareunia were almost same among both groups. Table 2 shows that 96 (56.8%) participants of the total study population had diagnosed with STI/RTI. Among those, 33(70.2%) had suffered from STI / RTI who were using IUDs as compared to 63 (51.6%) non-IUD users. This association is statistically significant.

DISCUSSION

Out of the total study participants, about 47(27.81%) were using IUD as contraceptive method. Table 2 shows that the presence of vaginal discharge was the most frequent complaintamong women in our study, particularly IUD users (40.78%). Similar findings were reported by-Hawkes, who described vaginal discharges as one of the most common clinical complaint among women of reproductive age in many parts of the world.[6] Study done by Dr. Samar Ghazal Musmar shows high prevalence rate of symptoms among the IUD users, either that related to alteration of vaginal discharge (86.6%), or symptoms related to RTI (91%)[7]. Beerthuizen referred to the presence of IUD as a foreign body, which causes reaction to the host and response of endometrial tissue to the device similarto foreign body reaction[8]. The change in the normal vaginal bacteria flora was another explanation. In the present study, complaints of Lesion and Itching over genitals was more among non IUD users in the proportions (7.38%) and (14.75%) respectively. Reason for these symptoms may be poor personal hygiene among those females.

The present study shows that 33(70.2%) had suffered from STI / RTI as compared to 63 (51.6%) non-IUD users. This association is statistically significant. In a study done by Sharma S [9], total of 61.9% of the women using an IUD and the 51.1% of women who had tubectomies had STI /RTI. The IUD continuation rate in a Libyan study was 96.1%, although increased nonspecific vaginitis (NSV) was one of the main medical complication in that study.[10]Poor quality care during transcervical procedures including IUD insertions could lead to such infections. For the iatrogenic infection, the major risk factors appear to be unhygienic practices and the nonobservance of aseptic procedures in hospitals and community settings. Although there is significant association between IUD use and symptoms of vaginitis and RTI, different studies around the world point to the safety of IUD use and low rate of IUD discontinuation, analysis of World Health Organization trials including over 22,000 women found that the primary risk of PID with IUD use occurs within the first 3 weeks after insertion; thereafter the risk declines to baseline levels and remains low. [11]

CONCLSION

Out of total participants, 47(27.81%) females were using IUD as contraceptive method in this study which proves that nearly one fourth of females had preferred it as a method of contraception. Most common symptom among IUD users was vaginal discharge and proportion of symptoms was more among IUD users as compared to non-users. This study concludes that insertion of IUDs put the females in reproductive age group at the risk of RTIs.The increased prevalence in women using

IUDs could be due to the improper insertion techniques, including care to ensure sterile conditions and poor follow-up care after insertion.

RECOMMENDATIONS

Above finding of this study recommend to take utmost care and follow minimum standards of aseptic procedures during IUD insertion by medical and para-medical staff. There is an urgent need for interventions to improve STI knowledge and practice for healthcare providers at grassroots healthcare levels and also among vulnerable population.

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REFERENCES

1. NACO. National Guidelines On Prevention, Management And Control Of Reproductive Tract Infections Including Sexually Transmitted Infections, Ministry of Health and Family Welfare Government of India;August 2007.
2. CDC.Reproductive Health Epidemiology Series,RTI-Module 3.Atlanta,Georgia,U.S.A.:2003;1-4
3. K.Park.Park's Textbook Of Preventive And Social Medicine,22nd edition. Jabalpur:Bhanot Publishers:2013p.457
4. David Hubacher,"Intrauterine devices & infection: Review of the literature"I ndian J Med Res. 2014 Nov; 140(1): 53–57.
5. Schwebke,J. "Diagnostic method for bacterial Vaginosis", International Journal of Obstetric and Gynecology, 1999;67: 21-23.
6. Hawkes, S., Morison, L., Foster, S., Gausia, K., Chakraborty, J., Weeling, R., Mabey D. "Reproductive-Tract Infection in Low-Prevalence situation: Assessment of Syndromic management in Matlab, Bangladesh", Lancet, 1999; 354(20): 1776-1781
7. Ghazal S, Musmar M, AmerIsma M. et al. Effect Of IUD(Intrauterine Device) On Reproductive Tract Infection In The Northern West Bank, Middle East Journal of Family Medicine, 2004; 5(5):213-217
8. Beerthuizen, R., "Pelvic Inflammatory Disease in Intrauterine Device Users" ,The European Journal of Contraception and Reproductive Health Care", (1996);1: 237-243.
9. Savita Sharma, B.P.Gupta, The Prevalence of RTI/STDs Among Married Women in Reproductive Age Group in a Rural Area. Indian Journal of Community Medicine, Jan 2009;34(1):62-64.
10. Singh R. and Al-Amari M., " Clinical performance of intrauterine device TCu-380 A in Benghazi, Libyan Arab Jamahiriya", Eastern Mediterranean Health Journal,2000;6(5/6):1073-1082
11. Farley TMM, Rosenberg MJ, Rowe P, et al. "Intrauterine devices and pelvic inflammatory disease: an international perspective", Lancet,1992; 339:785-788