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Study of Risk Factors in Patients of Pelvic Inflammatory Diseases

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Abstract

Number of risk factors has been associated with pelvic inflammatory disease, such as age, previous sexually transmitted infection, previous PID, multiple sexual partners, or an intrauterine contraceptive device. Women who use an intrauterine device for contraception are at least 2-4 times more likely to develop PID than non-users. Women who have had PID are twice as likely to develop the infection as those who have never had it. A history of a prior uncomplicated gonococcal infection is more common among women with PID than among women without disease. The present cross- sectional study was conducted in J.N. Medical College and Hospital (J.N.M.C.H.), Aligarh Muslim University, Aligarh. Permission for doing the study was taken by the Board of Studies in the Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh. The study was carried out for a period of one year, *from 1st August 2001 to 31st July 2002*. The present study was carried out among ever married females in the reproductive age group of 15 to 49 years. Women, who gave positive history of PID, were asked to give their consent for the study. Their refusal was taken as exclusion criteria. Females with PID who were menstruating or who had taken antibiotic within the previous month were also excluded from the study. A total of 350 ever married females were selected from the Gynaecology OPD of J.N. Medical College Hospital (n=170), Urban Health Training Centre (n=100) and Rural Health Training Centre (n=80).A detailed clinical history and clinical examination were recorded on a pre-formed and pre tested proforma. All the females under study were subjected to per vaginal examination. The percentage of those female was more who used any cloth during menstruation. Out of 350 patients, 7.4% gave history of T.B, 24% gave history of previous episodes of PID, 12.0% gave history of MTPs/D&Cs. 5.1% had adopted IUCDs as a method of family planning.1.71% cases gave history of removal of IUCDs because of some complications. 75.0% of 80 cases (who adopted family planning) used IUCDs, OCPs and ligation. IUCDs, OCPs, ligation and irregular use of condoms probably increase chances of PID.

Keywords: PID, intrauterine devices, hygiene, risk factors.

INTRODUCTION

Pelvic Inflammatory disease (PID) is a serious syndrome of female reproductive system which results from the spread of infections (most often sexually transmitted infections) from the vagina and endocervix to the uterus, fallopian tubes and ovaries. Diagnosis of PID is based primarily on clinical signs and symptoms. All women with suspected PID should have a pelvic examination to evaluate cervical discharge, cervical motion tenderness, uterine tenderness, adnexal tenderness, or masses. Women who use an intrauterine device for contraception are at least 2-4 times more likely to develop PID than non-users. Women who have had PID are twice as likely to develop the infection as those who have never had it. A history of a prior uncomplicated gonococcal infection is more common among women with PID than among women without disease. IUD users have a 1.6 to 9.3 time's higher risk of getting pelvic infections depending on age, number of partners, and frequency of intercourse. The risk is highest in the first 30 days after receiving the IUD, and long use (2 years) augments the risk of severe PID **[1].** The risk factors of PID according to Shafer [**2**] are- *adolescence, age at time of first sexual debut, multiple sex partners, contraceptive choice(IUDs increase the risk),history of lower genital tract infections with gonorrhoeae or Ch.trachomatis, History of previous gonococcal PID.*

Minor operative procedures like D& C and hysterosalpingogram can cause ascending infection. Tuberculosis may also lead to PID. Number of risk factors has been associated with this disease, such as age, previous sexually transmitted infection, previous PID, multiple sexual partners, or an intrauterine contraceptive device [3-6**].** Diagnosis of PID will be helpful [7, 8**].** The risk factors for PID include age less than 25 years, sexual promiscuity, and use of intrauterine devices (IUDs), marital status, and history of previous PID, history of minor gynecologic operation in the past and history of contact with untreated male sexual partner [9-12].

Hence this study was performed to identify the risk factors of Pelvic Inflammatory disease among women.

MATERIAL AND METHODS

The present cross-sectional study was conducted in J.N. Medical College and Hospital (J.N.M.C.H.), Aligarh Muslim University, Aligarh. The patients were selected from the Gynaecological OPDs of the Department of Obstetrics and Gynaecology, Rural and Urban Health Training Centres (R.H.T.C & U.H.T.C) of the Department of Community Medicine. The females selected for the study from the Gynaecology OPD of JNMCH were labelled as group I while those selected from UHTC and RHTC were labelled as group II and group III respectively. Permission for doing the study was taken by the Board of Studies in the Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh. The study was carried out for a period of one year, *from 1st August 2001 to 31st July 2002*. The present study was carried out among ever married females in the reproductive age group of 15 to 49 years. Women, who gave positive history of PID, were asked to give their consent for the study. Their refusal was taken as exclusion criteria. Females with PID who were menstruating or who had taken antibiotic within the previous month were also excluded from the study.

A total of 350 ever married females were selected from the Gynaecology OPD of J.N. Medical College Hospital (n=170), Urban Health Training Centre (n=100) and Rural Health Training Centre (n=80).

A detailed clinical history and clinical examination were recorded on a pre-formed and pre tested proforma .All the females under study were subjected to per vaginal examination.

RESULTS

Table 1: Distribution of the study population according to personal and genital hygiene (n=350)

Personal and genital hygiene	**No.**	**%**
1.Dirty nails/Irregular bath	150/80	42.9/22.8
2.Material used during menstruation *-any cloth*	227	64.8
-new cloth/cotton wool/branded napkins	123	35.1

A suspected case showed more than one aspect of personal hygiene

Table 2: Distribution of the study population according to relevant past history (n=350)

Relevant past history	**No.**	**%**
Positive past history PID	84	24.0
TB(Pulmonary)	26	7.4
Interference Still using IUCD	18	5.1
Get IUCD removed	6	1.7
MTP/D&C	42	12.0
Hysterosalpingography	0	0.0
Post abortal/post-partum sepsis	0	0.0

DISCUSSION

Personal hygiene includes all those personal factors which influence the health and well-being of an individual. As shown in table 1, the percentage of those female was more who used any cloth during menstruation (64.8%). More than 40.0% of females showed dirty nails and skin which could be the contributory factor for PID. In this study, any cloth was taken to be unclean for the purpose of examining the association of menstrual hygiene with PID while new cloth, cotton wool and branded napkins were taken to be clean.

Yunus [13] in his study at Jawan, found a high rate of 67.1% of women having bad orodental hygiene and dirty nailsband irregular bath in 62% of females in rural areas. Rasheed [14] found 39.4% of pregnant

femlaes having bad orodental hygiene, 36.2% having dirty nails and 33.6% having irregular use of soap.

Stoikov *et al.,* [15] found poor personal hygiene to be an important risk factor for STD. Garg [16] found statistically significant association between poor hygiene and vaginitis.

As shown in table 2, out of 350 patients,26 gave history of T.B.(7.4%),84 gave history of previous episodes of PID(24.0%),42(12.0%) gave history of MTPs/D&Cs.18 had adopted IUCDs as a method of family planning(5.1%). 6 cases gave history of removal of IUCDs because of some complications(1.71%). Nobody gave history of hysterosalpingography (HSG) or post abortal /post-partum sepsis. Thus, PID could be attributed to tuberculosis, previous episodes of PID, interference in the form of MTPs/D&Cs and IUCDs.

Gulati and Kapoor [17] in a study of 165 cases of PID found that PID could be attributed to post-partum period in 19.4% of cases; post abortal period in 20.6% cases; post-operative 7.88%;interference by dais in 8.48%; IUCDs 2.4%,tubercular2.4% and associated fibroid in 0.61% cases. In 37.9%no definite cause could be determined.

IUCDs use is associated with approximately a three to five fold increase risk of PID [18, 19]. The incidence of PID in association with IUCD was found 0.6% [20] to 0.8% [21].

Westrom [22] documented that more than 23.0% of patients with acute PID develop a subsequent episode. A patient with PID is 2.3times more likely than a patient without PID to have a positive past history of PID.

Washington *et al.,* [23] postulated several factors for recurrent episodes of PID. The responsible factors may be untreated male sexual partners, severe disease, and inadequate antibiotic therapy. Also probably the tubal epithelium that has been damaged by infection is more susceptible to subsequent bacterial colonization because of persistent chronic inflammation, lack of cilia and depression of local defense mechanisms.

Patwardhan *et al.,* [24] reported in their study of 61 cases of PID that 8 cases (27.6%) gave a history of pulmonary tuberculosis in the past.2 cases (9.6%) gave a history of IUCD insertion at some time preceding the onset of PID.7 cases (24.15%) gave a history of interference in the first trimester of pregnancy and 6 cases (20.7%) gave a history of interference such as D&C and hysterosalpingography.

Singh [25] also reported that out of 85 cases of PID, 6 cases (7.0%) gave history of interference following amenorrhoea.21 cases (24.7%) gave history of PID/TB in the past. 2 cases (2.3%)gave history of having undergone HSG for investigation of infertility in the immediate past.6 cases(7%)gave history of insertion or removal of IUCD or lost IUCD.

There is strong association of positive history of previous PID. Residual infection and or reinfection have been accredited for it [26]. History of minor gynecologic operation in the past is also a significant risk factor. Some earlier studies have reported similar results it has been hypothesised that, improper sterilisation techniques and inadequate precautions in operative procedures may be the cause [27].

In the present study, out of 350 married females ,only 80(22.8%) had adopted family planning methods at any time while 270 (77.1%) were not practicing any family methods at all .Thus the study population showed very poor contraceptive usage .Out of those who had adopted ,only 25.0%used condoms and 75.0% used IUCDs, OCPs and ligation. Though condom plays a protective role, but females who had adopted condom also had PID in this present study. This might be because of irregular use of it. Thus IUCDs, OCPs, ligation and irregular use of condoms probably increase chances of PID.

Current data on the use of OCPs and risk of lower and upper genital tract infection and sequelae are inconsistent. Women who use OCPs have an increased risk of Ch.trachomatis infection of the cervix but lower risk of symptomatic, clinically overt PID [28].

Sahoo *et al.,* [29], found that out of 93 patients presenting with vaginal discharge, 66 were either not using any contraceptive or using only non-barrier method of contraception (like Cu-T or ligation).

Garg [16] found significant association of IUCD with PID. OCP users were found to have higher prevalence of PID, vaginitis and urinary tract infection. This could be due to insertion of IUCD under unhygienic conditions or lack of proper screening before insertion of IUCD.

Gibney *et al.,* [30] said in his study of prevalence of STDs in Bangladesh trucking industry that condom use was very low with approximately 73.0% never using.

Association of IUCD to PID was also found by other authors [31]. It has been suggested that infections, spread due to the use of contraceptive devices are also one of the causes for PID [32]. Unhygienic practices of tubal ligations especially in the rural areas have also been identified as the cause, although in the present study we could not find any such findings [33].

Many previous, studies have confirmed the association between IUD use and PID [34-36].

Though many studies did not show any significant protective effect of barrier methods and OCPS [37, 38].

In this study, out of 350 ever married females, 7.42% were widowed and 0.60% was divorced. Out of 322, 22.3% women had strained relations with their husbands and 7.1% reported multiple sexual partners of their husbands. (The husbands of these females were mostly in professions like truck or bus driving, thus visiting home irregularly.

Some studies [30] reported that truck drivers had been identified as having high risk life styles for STD transmission because of frequent abscences from home, easy access to sex workers located near truck shops.

Truck drivers may be absent from their regular partners for long periods of time so more likely to select commercial sex partners. Truck drivers may have limited access to health services and commodities, including prompt and effective treatment of STI, condoms, and other prevention interventions, while on the road [39-43].

A study conducted in India and revealed that Long distance truck drivers are an important high-risk group as they traveling from one place to another place and caused for HIV spread [44].

The finding revealed in another study that multiple sexual partnerships with men and women are common among truckers [45, 46].

A study conducted in India found that 78% truckers said that they had sex with multiple partners and lower knowledge of condom use. A survey study conducted in Nigeria showed that drivers agreed that the use of condom reduce their sexual satisfaction [47, 48]. Multiple sexual partnerships with men and women are common among truckers [49].

In Bangladesh, analysis of survey data among truckers revealed that having more than one sexual partner in the last month, never using a condom with sex workers and ever injected narcotics were significant predictors of sexually transmitted infections (STI) among truckers [50].

The majority of the females in this study, belonged to the age group 25-29 years(22.8%)followed by 30-34 years age group(21.4%). Early marriages and early age of sexual activity are possible risk factors for PID [51]. Majority of the females (69.2%) were illiterate in this study.

CONCLUSION

Multiple sexual partners, lower socioeconomic status, lesser education levels, lack of hygiene, previous history of PID and use of IUCDs play a major role in the prevalence of Pelvic inflammatory diseases among women. Therefore, proper education must be given regarding the hazards of early marriages and lack of hygiene among these people. The use of barrier methods of contraception for sexually transmitted disease prevention should be encouraged. It is best to avoid sexual intercourse during the menses. The combination of a high clinical suspicion and broad-spectrum antibiotic treatment can ensure effective antibiotic treatment that will prevent future reproductive morbidity. The patients should also be referred to STI Clinic for proper counseling. Early diagnosis and treatment of PID will lead to decrease in morbidity in females which hampers their day-to-day activities.

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