



**EPIDEMIOLOGICAL MARKERS IN PELVIC INFLAMMATORY DISEASE (PID)
AMONG THE WOMEN OF REPRODUCTIVE AGE GROUP**

Rachana Pachori* and Nikhilesh Kulkarni

*Microbiology Research Laboratory, Department of Microbiology, R. A. College, Washim-444 505 (M.S), India.

***Author for Correspondence: Dr. Rachana Pachori**

Microbiology Research Laboratory, Department of Microbiology, R. A. College, Washim-444 505 (M.S), India.

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ABSTRACT

PID is a very significant public health problem. Upto two- thirds of cases go unrecognized and most of the cases go unreported. The actual incidence of PID is indeterminable due to lack of reliable diagnostic techniques as well as asymptomatic nature of the disease. In the present study epidemiological data of total 611 women confirmed to be suffering from PID was collected and processed statistically. The findings suggest that the incidences of PID were found to be significantly higher ($p>0.05$) among uneducated females of BPL sector classes, mostly residing in rural settings as well as mostly the employed women were found to be positive for acute or severe type of PID. Hence, socio-demographic factors can be considered as marker associated with PID and can be consider while designing gynecological health protocols for women of reproductive age groups.

KEYWORDS: asymptomatic, BPL sector, socio-demographic factors.

INTRODUCTION

STDs are one of the most critical health challenges facing the nation today. Centers for Disease Control and Prevention (CDC) estimates that there are 19 million new infections every year in the United States. Pelvic Inflammatory Disease (PID) is one of the most common causes of morbidity and mortality in young women in both developing and developed countries around the world. It is defined as inflammatory response of the upper genital tract including the endometrium, fallopian tubes and/or contiguous structures that follows infection from microorganisms that ascend from the cervix and/or vagina.^[1] It is polymicrobial infection which causes serious clinical sequelae viz. endometritis, salpingitis, pyosalpinx, tubo-ovarian abscess, pelvic peritonitis, perihepatitis etc.^[2] Not only severe cases but also mild cases of PID also have potential for damage to the reproductive health of women. The actual prevalence and incidence of PID is indeterminable due to the fact that the disease is not always apparent. Although acute signs and symptoms are often of moderate severity, long-term sequelae can be serious and include infertility, ectopic pregnancy, recurrent episodes of PID and chronic pelvic pain. Hence taking these into consideration the present study had been undertaken to search the risk factors associated with PID.

MATERIALS AND METHODS

The epidemiological data of PID patients were collected from the Government and private hospitals from 2009 to 2012 at Akola- Washim city area. The study locale is situated in the Vidarbha region of Maharashtra, India. The data of total 611 women which were confirmed to be suffering from PID was collected as per the medical record as well as from patients through possible personal interview and further processed for its epidemiological significance viz. age, marital status, Education, Occupation, Economic status, weight. Residence, Parity (No. of live births), Reported history of ectopic pregnancy and habitual miscarriage, Symptoms in past six months and reported history of PID. The data was further processed statistically adopting SPSS - 19.00 software.

RESULTS AND DISCUSSION

Baseline data on demographic descriptors, gynecologic and reproductive history, lifestyle habits and clinical aspects of the current illness were obtained from the admission register of Government and Private Hospitals from January 2009 to January 2012.

Table I: Studies on the patient history associated among the notified PID cases during 2009-12 (n=611).

Sr. No.	Characteristics	Number	P value
1.	Age (Years):		0.0000218
	< 20	214 (35.02)	
	20- 25	288 (47.13)	
2.	Marital status:		0.0000884
	Married	526 (86.08)	
	Unmarried	85 (13.91)	
3.	Education:		0.0020435
	Educated	122 (19.96)	
4.	Occupation:		0.0000101
	Employed	476(77.90)	
5.	Economic status:		0.0002433
	High	102(16.69)	
	Middle	130(21.27)	
6.	Weight:		0.0001679 0.0000147 0.000178
	Overweight	295 (48.28)	
	Underweight	256(41.89)	
7.	Residence:		0.00607
	Rural	397 (64.97)	
	Urban	214 (35.02)	
8.	Parity (No. of live births):		0.000016 0.00140
	Nulliparous	417 (68.24)	
	1	132 (21.60)	
9.	Reported history of ectopic pregnancy:		0.00370
	Yes	369 (60.39)	
	No	242 (39.60)	
10.	Reported history of habitual miscarriage:		0.0015888
	Yes	342 (55.97)	
11.	Symptoms in past six months:		0.006717 0.0000010
	Pelvic pain	243(39.77)	
	Other symptoms	181 (29.62)	
12.	Reported history of PID:		0.0000027
	Yes	392 (64.15)	
	No	219 (35.84)	

*Figure in Parenthesis indicates (%) value.

Table I revealed the patient history associated among the notified PID cases during 2009-12. From the table it was observed that women aged 20-25 years had the highest incidence of PID with the rate of 47.13 per cent followed by teenagers (35.02%). Hence, overall 82% of patients with PID were under the age of 25 which is considered to be reproductive age group. Least incidences of PID (17.83%) were observed in the women aged beyond 25. It predicts that young sexually active women were more vulnerable to acquire PID. This may be due to the sexual

behavior and potential acquisition of STI in young age. It may also reflect increased host susceptibility due to lower concentration of protective antibodies against pathogens, Immaturity of the epithelial lining of the cervix, larger zone of cervical ectopy and greater permeability of the cervical mucus. These findings are in accordance with the results given by.^{[3]-[6]} Marital status of notified PID cases depicts that PID is more prevalent in married women (86.08%) as compared to unmarried women (13.91%). It reflects the fact that married women

are sexually active and chances of acquiring infection is high due to the high frequency of sexual activities and also from the male partner. The pathogens are easily pushed into the reproductive tract from vagina during coitus. These findings are in agreement with the observation given by other scholars working on the same line of research.^{[7]-[9]}

Education is one of the important factor associated with acquiring PID. It was observed that rate of PID incidences were high in uneducated (80.03%) as compared to educated women (19.96%). It may be due to the lack of knowledge regarding acquisition of reproductive tract infections. The uneducated women are generally unaware of hygienic conditions during menstruation. It was observed that employed women (77.90%) were more vulnerable to acquire PID than unemployed (22.09%) group. In India, most of the working women are employed in the unorganized sector, which includes agricultural labourers, workers in traditional village and cottage industries, migrants to the cities in domestic service, day labourers, street vendors etc. These women often face occupational health problems. Women face sexual harassment and the pressures of the family responsibilities together at the work place. The absence of toilets near the work place leads to the development of various diseases especially urinary infections.^[10]

PID was found predominant in low socioeconomic group women. The rate of PID under this group was found to be 62.02 per cent. However, in middle class women, the occurrence was observed to be 21.27 per cent. Lowest incidence of PID was observed in high socioeconomic group women. Hence, the distribution of PID was observed in all the classes of women in community. However, women belonging to BPL sector were found to be most risky group. Women belonging to BPL sector are often reluctant to seek medical help due to the costs involved. The second reason may be lack of knowledge, lack of sanitary conditions, low living standards, ignorance, risky sexual behavior, multiple sexual partners, delay in seeking care and noncompliance with treatment. These findings were in accordance with.^{[11]-[12]}

PID was found predominant in overweight (48.28%) followed by underweight (41.89%) reproductive group women. The women possessing normal body weight was found to be less susceptible to acquire PID. Hence, change in BMI was found to be the risk factor associated with PID. These findings were in accordance with.^{[13]-[14]}

In the present investigation, it was observed that women residing in rural areas were more prone to acquire PID (64.97%) than women residing in urban areas (35.02%). According to the World Health Organization (WHO), the location where people live affects their health and life outcomes.^[15] Hence, the residence of an individual is one of the influencing factor in acquisition of PID. Similar findings were reported by.^[16] PID was observed predominant in nulliparous (68.24%) women followed

by more than two parity (10.14%) women. This indicates that nulliparous women are at high risk of developing PID. It may be due to "Silent PID" which goes unrecognized by women and delay in treatment results into impairment of women fertility which leads to infertility in females. It is also possible that couples without children may be actively trying to conceive by increasing the number of unprotected sexual acts, which may account for this association.^{[17]-[18]}

Out of 611 women, 369(60.39%) women had given positive reply for the history of one or more ectopic pregnancy and PID. It was observed that in the study group of patients, 342(55.97%) women had history of habitual miscarriage. Hence, habitual miscarriage can be considered as marker for PID. 39.77% women had complaints of pelvic pain followed by other symptoms (29.62%) viz. irregular menstrual periods, vaginal discharge, bleeding within menses etc. 30.60% women had reported no complaints related with PID. However, these women were found to be positive during lab diagnosis for PID. Among 611 women included in study group, 392(64.15%) had reported history of PID. However, 219(35.84%) had no history of PID in the past. These indicate that recurrent PID is predominant in reproductive group females. Hence, wide variations were observed in the severity and presence of symptoms associated with PID which reflects the inapparent status of PID. These are in accordance with the findings given by other workers.^{[19]-[20]} Statistical analysis of patient history indicates significance of socio-demographic factors in PID. Hence it may be consider as risk factors associated with PID.

CONCLUSIONS

The socio-demographic plays important role in acquisition of PID. The gynecological health care services should be provided to the women who are at high risk of acquiring PID also teenager girls should be educated about proper hygiene and care of reproductive tract. Empiric treatment of PID should be initiated in sexually active young women and other women at risk of acquiring PID if they are experiencing pelvic or lower abdominal pain. Future research should focus mainly on the longitudinal and prospective studies to search more epidemiological markers associated with PID and should include large sample size. Hence, the findings of present study could serve as preliminary data to pilot innovative delivery of gynecologic health care services.

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