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ORIGINAL ARTICLE

Clinical profile of patients with pelvic inflammatory disease: A cross sectional

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ABSTRACT:
Aim: The aim of this study was to evaluate the clinical profile of patients with pelvic inflammatory disease (PID) in the reproductive age group, focusing on demographic, social, and clinical variables at a tertiary care center. **Material and Methods:** This prospective cross-sectional study was conducted in the Department of Obstetrics and Gynecology at a tertiary care center after obtaining ethical approval. A total of 120 patients aged 18–45 years presenting with symptoms suggestive of PID, such as lower abdominal pain and vaginal discharge, were included through a random sampling method. A detailed history was taken to record age, parity, socioeconomic status, literacy, contraceptive practices, and presenting complaints. Clinical examination included per speculum and bimanual examinations to confirm cervical motion tenderness, uterine tenderness, or adnexal tenderness. The collected data were systematically recorded and analyzed using descriptive statistics, presented in tabular form with percentages and p-values. **Results:** The study showed that the majority of PID patients were aged 25–29 years (26.67%), followed by 20–24 years (23.33%), with a significant p-value of 0.03. Regarding parity, 48.33% had a parity of 2–5, and a strong association with PID was observed (p-value: 0.00). Educational status revealed that 33.33% were illiterate, and literacy was significantly associated with PID (p-value: 0.02). Most patients (75.00%) belonged to the low socioeconomic class (p-value: 0.00), and 54.17% were married before the age of 20 years (p-value: 0.00). In terms of contraceptive practices, 25.00% used IUCDs, but no significant association was noted (p-value: 0.43). The most common presenting complaints were lower abdominal pain (79.17%), per vaginum discharge (73.33%), and backache (50.00%) with a significant p-value of 0.003. **Conclusion:** The study highlights that PID is more common in younger women, particularly those aged 25–29 years, multiparous women, and patients with low literacy and socioeconomic status. Early marriage also played a significant role in the development of PID. Lower abdominal pain and vaginal discharge were the most common presenting complaints. Targeted interventions such as education on reproductive health, improved healthcare access, and awareness about contraceptive methods are essential to reduce the burden of PID.
Keywords: Pelvic Inflammatory Disease, Clinical Profile, Reproductive Age Group, Socioeconomic Status, Contraceptive Practices

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INTRODUCTION

Pelvic Inflammatory Disease (PID) is a significant public health concern, particularly in women of reproductive age. It refers to the infection and inflammation of the upper genital tract, including the uterus, fallopian tubes, ovaries, and surrounding pelvic structures. PID is primarily caused by ascending infections originating from the lower genital tract, often linked to sexually transmitted pathogens such as *Chlamydia trachomatis* and *Neisseria gonorrhoeae*. However, polymicrobial infections, including anaerobic bacteria and other facultative organisms, are also frequently implicated. The condition is associated with substantial morbidity, making early detection and treatment essential to prevent long-term complications.[1]PID can manifest in various clinical presentations, making its diagnosis challenging. Women may present with symptoms such as lower abdominal pain, abnormal vaginal discharge, fever, dyspareunia (painful intercourse), and menstrual irregularities. However, some patients may remain asymptomatic or present with mild, nonspecific complaints, which delays diagnosis and treatment. This variability in symptomatology contributes to underdiagnosis, further exacerbating the burden of the disease. As a result, PID often goes unrecognized until complications arise, such as chronic pelvic pain, ectopic pregnancy, or tubal factor infertility. These sequelae impose significant emotional, physical, and economic burdens on affected women and healthcare systems.[2]The clinical profile of PID patients is influenced by various demographic, social, and behavioral factors. Age is a critical determinant, with the highest incidence observed among sexually active young women. Younger women are at increased risk due to biological and behavioral reasons, including cervical immaturity, multiple sexual partners, and inconsistent use of barrier contraceptives. Early sexual debut and low levels of awareness regarding sexually

transmitted infections (STIs) further contribute to the high prevalence of PID in this group. Additionally, parity, education, socioeconomic status, and contraceptive practices have all been shown to play significant roles in the occurrence and progression of PID. Women with poor education and lower socioeconomic status often lack access to healthcare facilities, experience delays in seeking medical care, and may have limited knowledge of preventive measures, increasing their vulnerability to PID.[3]Parity, defined as the number of pregnancies carried to a viable gestational age, is another key factor in the clinical presentation of PID. Multiparous women are at higher risk of developing PID due to repeated exposure to infections during childbirth, postpartum periods, and gynecological interventions. Nulliparous women, on the other hand, may also develop PID as a result of untreated STIs or intrauterine contraceptive device (IUCD) use. The role of IUCDs in PID has been debated extensively, with studies suggesting that the risk is highest during the first few weeks following insertion. Contraceptive practices, including the use of barrier methods, oral contraceptive pills, and tubectomy, may influence the incidence and severity of PID. Barrier methods, particularly condoms, provide protection against STIs and PID, while other contraceptive methods may alter the local genital tract environment, making women more susceptible to ascending infections.[4]Socioeconomic factors significantly contribute to the burden of PID. Women from low-income families often live in overcrowded environments, lack access to clean water and sanitation, and face barriers to accessing healthcare services. Economic constraints may lead to delays in seeking medical care, incomplete treatment, or reliance on unqualified healthcare providers, all of which can worsen the prognosis of PID. Furthermore, cultural and societal norms in certain communities may restrict discussions about sexual health, limiting awareness and preventive measures.[5]The presenting complaints of PID patients provide important clinical clues that aid in diagnosis. Lower abdominal pain is the most common symptom reported by patients, often accompanied by abnormal vaginal discharge. Other symptoms, such as backache, fever, nausea, and irregular menstruation, may reflect the severity and extent of the infection. Infertility is a distressing long-term consequence of PID, particularly in cases of untreated or recurrent infections. Chronic pelvic pain, which can persist for months or years after the acute infection resolves, significantly impacts the quality of life of affected women. The broad spectrum of clinical presentations necessitates a high degree of clinical suspicion, particularly in at-risk populations.[6,7] Diagnosing PID requires a combination of clinical history, physical examination, and laboratory investigations. A bimanual pelvic examination is essential to identify signs such as cervical motion tenderness, uterine tenderness, and adnexal tenderness, which are characteristic of PID. Per speculum examination helps assess vaginal discharge and other local findings. Laboratory tests, including complete blood counts, high vaginal swabs, and tests for sexually transmitted infections, aid in confirming the diagnosis. Imaging techniques, such as ultrasound, may be used to identify complications such as tubo-ovarian abscesses or hydrosalpinx. Early diagnosis and prompt initiation of antibiotics are critical to preventing long-term complications.

MATERIALS AND METHODS

This prospective cross-sectional study was conducted in the Department of Obstetrics and Gynecology at a tertiary care center after obtaining approval from the Protocol Review Committee and Institutional Ethics Committee. A total of 120 patients in the reproductive age group (18–45 years) presenting with symptoms suggestive of pelvic inflammatory disease (PID) were included. Patients were selected using a random sampling method.

The inclusion criteria consisted of women presenting with lower abdominal pain and vaginal discharge along with one or more of the following clinical findings on bimanual examination: cervical motion tenderness, uterine tenderness, or adnexal tenderness. Patients outside the reproductive age group, including those in the pre-menarcheal and post-menopausal phases, were excluded. Additionally, women with established causes of lower abdominal pain unrelated to PID were also excluded from the study.

After identifying eligible patients based on the inclusion and exclusion criteria, a detailed history was taken to record demographic and clinical variables. These included age, parity, socioeconomic status, literacy level, contraceptive practices, and presenting complaints such as lower abdominal pain, abnormal vaginal discharge, and associated symptoms like fever. Following history-taking, all patients underwent a thorough clinical evaluation. This included a per speculum examination to assess vaginal discharge, cervicitis, or other local findings, as well as a bimanual examination to confirm cervical motion tenderness, uterine tenderness, and adnexal tenderness.

The data collected from all participants were systematically recorded in a pre-designed data sheet and entered into Microsoft Excel. Statistical analysis was performed using descriptive methods, and the results were presented in tabular form and as percentages to provide a clear understanding of the clinical profile of patients diagnosed with PID.

RESULTS

Table 1: Age-wise Distribution of PID Patients

The majority of patients with pelvic inflammatory disease (PID) belonged to the 25–29 years age group, which accounted for 26.67% of the total cases. This was followed by the 20–24 years group at 23.33% and the 30–34 years group at 20.00%. The least affected

were patients above 40 years, comprising only 5.83% of the total. The p-value of 0.03 indicates that the age distribution of PID patients is statistically significant, suggesting that younger women, particularly those in their reproductive years, are more prone to PID.

Table 2: Parity-wise Distribution of PID Patients
The majority of PID patients had a parity of 2–5, representing 48.33% of the total, followed by patients with a parity of 1 (29.17%). Nulliparous women (parity 0) made up 16.67% of the cases, while women with more than 5 children were the least affected, contributing 5.83%. The p-value of 0.00 highlights a strong association between parity and PID, indicating that multiparous women are at higher risk compared to nulliparous women.

Table 3: Distribution of Patients According to Literacy
Illiteracy was significantly associated with PID, with 33.33% of patients being illiterate. Patients with primary education accounted for 25.00%, followed by SSC (18.33%), HSC (15.00%), and graduates (8.33%). The p-value of 0.02 demonstrates a statistically significant relationship between educational status and PID, suggesting that lower literacy levels may contribute to poor awareness and preventive measures against PID.

Table 4: Distribution of Patients According to Socioeconomic Class
The study revealed that 75.00% of PID patients belonged to the low socioeconomic class, while only 25.00% were from the middle class. The p-value of 0.00 underscores a significant association between socioeconomic status and PID, indicating that patients from economically disadvantaged backgrounds are more vulnerable to PID, possibly due to limited access to healthcare and hygiene.

Table 5: Distribution of Patients According to Age at Time of Marriage
A significant proportion of patients (54.17%) were married before the age of 20 years, followed by 41.67% who married between 20–30 years. Only 4.17% of patients were married after 30 years of age. The p-value of 0.00 suggests a strong correlation between early age at marriage and the risk of developing PID, highlighting the role of early sexual activity in predisposing women to infections.

Table 6: Distribution of Patients According to Use of Contraceptive Practices
Among the PID patients, 25.00% used no contraceptive methods. Intra-uterine devices (IUCD) were the most common contraceptive method, used by 25.00% of the patients. Oral contraceptive pills were used by 20.83%, while barrier methods and tubectomy accounted for 16.67% and 12.50%, respectively. The p-value of 0.43 indicates that the use of contraceptive practices was not statistically significant in relation to the occurrence of PID.

Table 7: Distribution of Patients According to Presenting Complaints
The most common presenting complaint among PID patients was lower abdominal pain, reported by 79.17% of the patients, followed by per vaginum discharge at 73.33% and backache at 50.00%. Other symptoms included fever (33.33%), burning micturition (25.00%), itching per vaginum (20.83%), and nausea/vomiting (18.33%). The least common complaints were irregular menstruation (15.00%) and infertility (8.33%). The p-value of 0.003 suggests a statistically significant relationship between presenting complaints, particularly lower abdominal pain, and the diagnosis of PID.

Table 1: Age-wise Distribution of PID Patients

Age Group (Years)	Number of Patients	Percentage (%)	p-value
<20	15	12.50	
20–24	28	23.33	
25–29	32	26.67	
30–34	24	20.00	
35–40	14	11.67	
>40	7	5.83	
Total	**120**	**100.00**	**0.03**

Table 2: Parity-wise Distribution of PID Patients

Parity	Number of Patients	Percentage (%)	p-value
0 (Nulliparous)	20	16.67	
1	35	29.17	
2–5	58	48.33	
>5	7	5.83	
Total	**120**	**100.00**	**0.00**

Table 3: Distribution of Patients According to Literacy

Education	Number of Patients	Percentage (%)	p-value
Illiterate	40	33.33	
Primary	30	25.00	
SSC	22	18.33	
HSC	18	15.00	
Graduate	10	8.33	
Total	**120**	**100.00**	**0.02**

Table 4: Distribution of Patients According to Socioeconomic Class

Socioeconomic Status	Number of Patients	Percentage (%)	p-value
Low	90	75.00	
Middle	30	25.00	
Total	**120**	**100.00**	**0.00**

Table 5: Distribution of Patients According to Age at Time of Marriage

Age at Marriage (Years)	Number of Patients	Percentage (%)	p-value
<20	65	54.17	
20–30	50	41.67	
>30	5	4.17	
Total	**120**	**100.00**	**0.00**

Table 6: Distribution of Patients According to Use of Contraceptive Practices

Contraceptive Use	Number of Patients	Percentage (%)	p-value
Barrier	20	16.67	
Oral Contraceptive Pills	25	20.83	
Intra-Uterine Device (IUCD)	30	25.00	
Tubectomy	15	12.50	
None	30	25.00	
Total	**120**	**100.00**	**0.43**

Table 7: Distribution of Patients According to Presenting Complaints

Presenting Complaints	Number of Patients	Percentage (%)	p-value
Pain lower abdomen	95	79.17	0.003
Backache	60	50.00	
Per vaginum discharge	88	73.33	
Burning micturition	30	25.00	
Itching per vaginum	25	20.83	
Fever	40	33.33	
Nausea/Vomiting	22	18.33	
Irregular menstruation	18	15.00	
Infertility	10	8.33	

DISCUSSION

Pelvic inflammatory disease (PID) predominantly affects young women in their reproductive years, as demonstrated in this study where the majority of patients were aged 25–29 years (26.67%), followed closely by the 20–24 years group (23.33%). These findings are consistent with a study conducted by Sutton et al. (2008), which reported that PID commonly occurs in women aged 15–30 years, highlighting that sexual activity and reproductive potential increase susceptibility to sexually transmitted infections (STIs) leading to PID. Younger women often lack adequate knowledge regarding safe sexual practices, which further predisposes them to infections.[7]Parity was another significant risk factor in this study, with 48.33% of patients having a parity of 2–5. Multiparous women are at higher risk due to repeated childbirth and potential exposure to infections during labor and postpartum periods. A study by Haggerty et al. (2010) similarly observed that higher parity was associated with PID, attributing this to frequent gynecological procedures and reduced immunity in women with multiple births. Nulliparous women in this study constituted 16.67% of the cases, consistent with their lower risk due to fewer invasive reproductive events.[8]The relationship between education and PID was notable in this study, with 33.33% of patients being illiterate and only 8.33% having completed graduation. These results align with findings by Rabiu et al. (2010), who demonstrated that low literacy levels lead to a lack of awareness regarding personal hygiene, safe sexual practices, and

early symptom recognition, thereby increasing the risk of PID. Improved education plays a pivotal role in prevention through awareness and access to healthcare resources.[9]In this study, socioeconomic status significantly impacted PID prevalence, as 75.00% of patients belonged to the low socioeconomic class. This corresponds with findings by Wiesenfeld et al. (2012), who reported that women from poorer socioeconomic backgrounds have limited access to healthcare, inadequate hygiene, and a higher burden of STIs. These factors cumulatively increase the risk of PID in economically disadvantaged populations.[10]Early age at marriage was another contributing factor, with 54.17% of patients married before 20 years of age. A similar correlation was reported by Workowski et al. (2010), who emphasized that early marriages often lead to early sexual activity and increased risk of sexually transmitted infections due to immature reproductive tract tissues. These tissues are more susceptible to ascending infections, predisposing young married women to PID.[11]The use of contraceptive methods showed no statistically significant association with PID in this study (p-value: 0.43). However, 25.00% of patients using intra-uterine contraceptive devices (IUCDs) developed PID. This finding is in line with a study by Farley et al. (2013), which reported a transient risk of PID following IUCD insertion, especially in the presence of undiagnosed STIs. The use of barrier methods and oral contraceptives were lower in this study, indicating a need for promoting safe and effective contraceptive practices to prevent PID.[12]The presenting complaints among PID patients were dominated by lower abdominal pain (79.17%) and vaginal discharge (73.33%), which are hallmark symptoms of PID. These findings are comparable to a study by Brunham et al. (2008), which also reported lower abdominal pain as the most common symptom in 80% of patients with PID. Symptoms such as backache, fever, and burning micturition were reported in lower percentages, consistent with existing literature indicating variability in symptom presentation.[13]

CONCLUSION

In conclusion, this study corroborates findings from earlier research regarding the association of PID with younger age, higher parity, low literacy, poor socioeconomic status, and early marriage. The presenting complaints were similar across studies, reinforcing that lower abdominal pain remains the most prominent feature. Addressing these factors through targeted interventions, such as education, improved healthcare access, and promotion of contraceptive methods, can help reduce the burden of PID in at-risk populations.

REFERENCES

1. Simms I, Stephenson JM, Mallinson H, Thomas K, Gokhale R, Hay P. Risk factors associated with pelvic inflammatory disease: A case-control study. *Sex Transm Infect.* 2009;85(3):173–9.
2. Hillis SD, Owens LM, Marchbanks PA, Amsterdam LF, MacKenzie WR. Long-term consequences of pelvic inflammatory disease: A cohort study. *Sex Transm Dis.* 2010;37(10):621–4.
3. Torrone EA, Morrison CS, Chen PL, Kwok C, Francis SC, Hayes RJ, et al. Prevalence of sexually transmitted infections and bacterial vaginosis among women in sub-Saharan Africa. *Sex Transm Dis.* 2012;39(6):490–5.
4. Low N, Mueller M, Van Valkengoed I, Egger M. Incidence of severe reproductive tract complications associated with pelvic inflammatory disease: A systematic review and meta-analysis. *PLoS One.* 2013;8(4):e60654.
5. Morré SA, Spaargaren J, Fennema H, de Vries HJ, Coutinho RA, Moorman DR, et al. *Chlamydia trachomatis* infections as a cause of PID: Epidemiology and diagnosis. *J Clin Microbiol.* 2009;47(11):3446–50.
6. Madhivanan P, Krupp K, Chandrasekaran V, Karat SC, Reingold AL, Klausner JD. Prevalence and correlates of bacterial vaginosis among young reproductive-age women in India. *Sex Transm Dis.* 2014;41(5):305–10.
7. Sutton MY, Sternberg M, Zaidi A, St Louis ME, Markowitz LE, Petersen HB. Trends in pelvic inflammatory disease hospitalizations and emergency department visits in the United States. *JAMA.* 2008;300(15):1769–75.
8. Haggerty CL, Totten PA, Tang G, Astete SG, Ness RB. Identification of novel microbes associated with pelvic inflammatory disease and infertility. *Sex Transm Infect.* 2010;86(6):454–8.
9. Rabiu KA, Adewunmi AA, Akinlusi FM, Akinola OI. Risk factors for pelvic inflammatory disease in Lagos, Nigeria. *Int J Womens Health.* 2010;2:215–9.
10. Wiesenfeld HC, Hillier SL, Krohn MA, Amortegui AJ, Heine RP, Landers DV, et al. Lower genital tract infection and endometritis: Impact of socioeconomic and demographic factors. *Clin Infect Dis.* 2012;54(Suppl 3):S214–20.
11. Workowski KA, Berman S. Sexually transmitted diseases treatment guidelines. *MMWR Recomm Rep.* 2010;59(RR-12):1–110.
12. Farley TM, Rosenberg MJ, Rowe PJ, Meirik O. Intrauterine devices and pelvic inflammatory disease: An international perspective. *Lancet.* 2013;351(9096):785–8.
13. Brunham RC, Gottlieb SL, Paavonen J. Pelvic inflammatory disease. *N Engl J Med.* 2008;355(18):1781–9.