

Pelvic Inflammatory Disease in Women of Child Bearing age Group: A Prospective Study

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Received: January 2018

Accepted: February 2018

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ABSTRACT

Background: Pelvic inflammatory disease is one of the common causes of morbidity in women of child bearing age group. The incidence is more in adolescent and young females because of sexually active lifestyle, risk taking behavior, biologic vulnerability and their behavioral and cognitive risk factors. Acute PID usually present with abdominal pain, backache and vaginal discharges. Early diagnosis and proper antibiotics treatment is essential to prevent complications such as pelvic abscess formation, peritonitis, adhesion formation and infertility. **Methods:** We conducted this prospective study of 100 patients with acute PID attending gynecology OPD of our hospital. Demographic details were noted in all cases. History of present illness and relevant past history was noted in all the cases. Clinical examination was done and a cervicovaginal swab was also taken and sent for staining, microbiological examination and culture sensitivity. Blood investigation and relevant imaging was done in selected cases. The data was analyzed using SSPE 20.0. The results were presented as mean and standard deviation. P value less than 0.005 was taken as statistically significant. Microsoft office was used for preparation of charts and graphs. **Result:** Out of 100 cases the most common affected age group was found to be between 18-25 years and mean age of the studied cases was found to be 26.16+/- 6.59 years. The analysis of educational qualification of the patients showed that 30 % patients were educated up to HSC while 13% patients studied less than HSC. 29% patients were illiterate. 15 % patients were graduates and 13% patients were postgraduates. most of the women were multiparous (52%). 30 (30%) patients were primipara while 18% patients were nulliparous. Common contraceptive methods used by studied cases were barrier method (30%) and intrauterine contraceptive devices (22%). the most common presenting complaint was lower abdominal pain which was present in 68 patients (68%), followed by low backache (58%) and vaginal discharge (52%). Common organisms isolated by microbiological examination were found to be E. coli (20%), chlamydia trachomatis (20%) and Klebsiella (12%). **Conclusion:** Pelvic inflammatory diseases are common in young females of child bearing age group. Its diagnosis and treatment by proper antibiotics is essential to prevent acute (peritonitis and abscess formation) and chronic complication (tubal blockage leading to infertility).

Keywords: Pelvic Inflammatory diseases, Signs and symptoms, Antibiotics, infertility.

INTRODUCTION

Pelvic inflammatory disease (PID) is defined as an inflammation of the upper genital tract due to an infection in women. The disease primarily affects the uterus, fallopian tubes, and in some cases ovaries. The infection is usually ascending starting from lower genital tract and reaching uterus, fallopian tubes and ovaries. It is usually seen in sexually active females and is the result of sexually transmitted infection.^[1] The common pathogens involved in causation of pelvic inflammatory disease include Neisseria gonorrhoeae or Chlamydia trachomatis. The other less common pathogens such as Mycoplasma, peptostreptococcus, Bacteroides, Hemophilus, Staphylococcus, E. coli and Group B Streptococci may also be involved in cases of PID.^[2] The usual age group to be affected ranges between 15-35 years.

With the use of antibiotics its prevalence is decreasing but it is still one of the significant causes of morbidity in developing countries.^[3]

The risk factors for PID include multiple sexual partners, sexually transmitted disease in past, vaginal douching, Gynecologic surgical procedures such as endometrial biopsy, curettage, and hysteroscopy. young age, smoking, and illicit drug use though may not be risk factors by themselves but may predispose an individual by virtue of increased risk taking behavior.^[4] Barrier methods of contraception are associated with decreased chances of sexually transmitted diseases and consequently are associate with decreased incidence of pelvic inflammatory diseases. Oral contraceptive pills are reported to be having a protective effect against pelvic inflammatory diseases but this has been contested by many researchers and till now there is no clear evidence as to whether OCPs actually reduces incidence of PID or just mask the symptoms. The other method of contraception namely intrauterine contraceptive devices is clearly associated with increased risk of pelvic PID and there is 10-fold increased in the risk of

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development of PID in women who use IUCDs for the purpose of contraception.^[5]

The patients usually present initially with vague complaints such as backache and abdominal pain and later may develop signs and symptoms such as foul-smelling vaginal discharge and adnexal tenderness.^[6] Irrespective of the route of spread infection causes inflammatory changes resulting in changes such as scarring and adhesion formation. These adhesion formations is one of the important causes of tubal blockage causing female infertility.^[7] Chronic backache, vague lower abdominal pain and ectopic pregnancy are some of the other consequences of pelvic inflammatory diseases.^[8]

The diagnosis of PID is usually clinical but supportive evidence can be obtained from complete blood count (leukocytosis), raised CRP levels, Increased ESR. Specific chlamydial and gonococcal DNA probes can be used for specific diagnosis. Imaging studies such as ultrasonography, computed tomography and magnetic resonance imaging are needed in selected cases and also for ruling out alternative diagnosis such as Appendicitis, Adnexal neoplastic masses and ectopic pregnancy. In selected cases laparoscopy may be required for the diagnosis.^[9]

Management of PID consist of Adequate antibiotics therapy guided by culture and sensitivity reports. The empirical treatment must include antibiotics, such as doxycycline and cephalosporins, known to be effective against the most common offending organisms such as Neisseria gonorrhoeae or Chlamydia trachomatis. Metronidazole should be added to cover anaerobic organisms. Male partners are also treated by same antibiotics to decrease the chances of re-infection. If feasible intrauterine contraceptive devices should be removed and an alternate method of contraception should be adopted. In some cases, not responding to antibiotics surgical interventions such as draining an abscess or surgical resection of the affected part may be needed. Laparotomy and extirpative surgery may be required in seriously ill patients with peritonitis caused by rupture of a tubo-ovarian abscess.^[10]

We conducted this study to analyze the risk factors, clinical features and outcome of management of patients with PID in women with reproductive age group.

MATERIALS AND METHODS

We conducted this prospective observational study of women in child bearing age group in which 100 patients with clinical features suggestive of pelvic inflammatory diseases were included on the basis of a predefined inclusion and exclusion criteria. The study was conducted in the department of obstetrics and gynecology of a tertiary care hospital and infertility center situated in an urban area. Written informed consent was taken from all the patients. Demographic details such as age, weight, height,

socioeconomic status, number of living children and educational status of all the patients were noted. A detailed history of present complaints and any past history of similar complaints was also noted. A detailed clinical examination was done in all cases. Per abdomen and pelvic examination was done followed by speculum and bimanual vaginal examination. A cervicovaginal swab was also taken and sent for staining, microbiological examination and culture sensitivity. In our study, we wanted to know the risk factors and clinical presentation of women diagnosed with acute PID, as well as the microorganisms cultured. Blood investigations such as complete blood count, ESR and VDRL was done in all the cases. Ultrasonography was done in all cases. Computed tomography or Magnetic resonance imaging was done in selected cases. The data was analyzed using SSPE 20.0. The results were presented as mean and standard deviation. P value less than 0.005 was taken as statistically significant. Microsoft office was used for preparation of charts and graphs.

Inclusion Criteria

All women in reproductive age group and presenting with features suggestive of acute pelvic inflammatory diseases.

Patients who consented to be part of study.

Age above 18 years

Exclusion criteria

Age less than 18 years.

Those who refused consent.

Pregnant women.

Women with alternative diagnosis such as appendicitis, ectopic pregnancy or neoplastic diseases.

RESULTS

Table 1: Age groups of the affected cases.

Age groups	No. of Patients	Percentage
18 - 25 years	48	48.00%
26 - 30 years	23	19.00%
31 - 35 years	19	23.00%
> 35 years	10	10.00%
Total	100	100.00%

Mean Age \pm SD = 26.16 \pm 6.59 years.

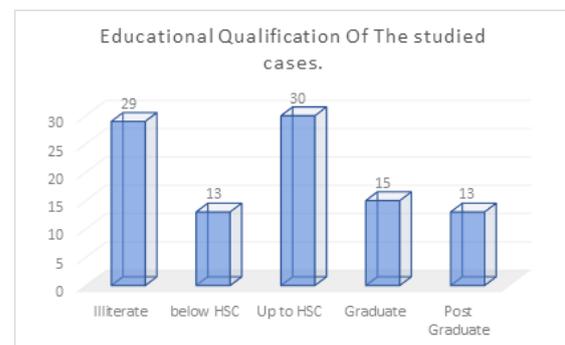


Figure 1: Educational Qualification of the affected cases.

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Out of the 100 studied cases majority of the patients belonged to the age group of 18-25 years (48%) followed by 26-30 years (23%) and 31-35 (19%) years. Only 10% cases belonged to the group of 36 and above. Mean age of the studied cases was found to be 26.16+/- 6.59 years.

The analysis of educational qualification of the patients showed that 30 % patients were educated up to HSC while 13% patients studied less than HSC. 29% patients were illiterate. 15 % patients were graduates and 13% patients were postgraduates. Majority of the studied cases belonged to middle class (52%) followed by upper middle class (22%) and lower class (10%). 7% and 9% patients belonged to upper class and lower middle class respectively.



Figure 2: Socio-Economic Status of the affected cases.

Out of the 100 studied cases most of the women were multiparous (52%). 30 (30%) patients were primipara while 18% patients were nulliparous.

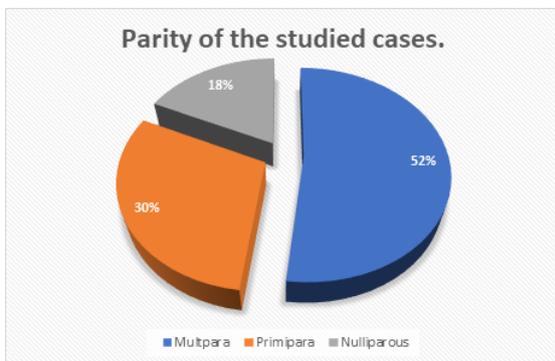


Figure 3: Parity of the studied cases.

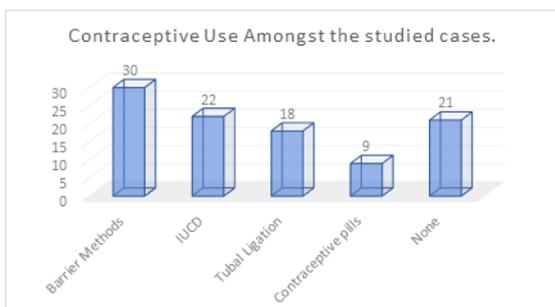


Figure 4: Contraceptive use amongst the cases with PID.

The analysis of contraceptive amongst the studied cases showed that most common method used by

couples was barrier method (30%) followed by Intrauterine contraceptive devices (22%) and tubal ligation (18%). Only 9 % patients were using oral contraceptive pills for the purpose of contraception. 21% patients were not using any method of contraception. Majority of the patients not using any method of contraception were nulliparous women.

The analysis of presenting complaints of the studied cases showed that the most common presenting complaint was lower abdominal pain which was present in 68 patients (68%), followed by low backache (58%), vaginal discharge (52%), low grade fever (48%), malaise (38%), dyspareunia (22%) and infertility (12%).

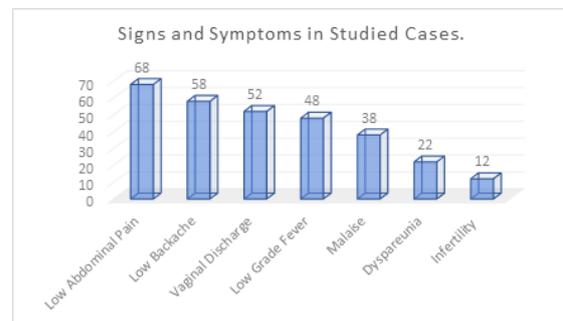


Figure 5: Presenting signs and symptoms in the studied cases.

Cervicovaginal swab was sent for microscopy and culture and sensitivity. Out of 100 cases 32 (32%) microbiological swabs turned out to be sterile. Out of remaining 68 cases most common organism was found to be E. coli which was seen in 20 patients (20%), followed by Chlamydia trachomatis (16%), Klebsiella (12%), Gardnerella vaginalis (3%), Trichomonas vaginalis (3%), Neisseria gonorrhoea (2%), Staphylococcus epidermidis (2%). Polymicrobial growth was seen in 10 (10%) patients.

Table 2: Organisms isolated on microbiological analysis.

Organisms	No Of Patients	Percentage
Sterile	32	32 %
E. coli	20	20 %
Chlamydia trachomatis	16	16 %
Klebsiella	12	12 %
Gardnerella vaginalis	3	3 %
Trichomonas vaginalis	3	3 %
Neisseria gonorrhoea	2	2 %
Staphylococcus epidermidis	2	2 %
Polymicrobial growth	10	10 %
Total	100	100 %

DISCUSSION

In this study the most common affected age group was found to be 18- 25 years. The factors such as sexually active lifestyle, risk taking behavior, biologic vulnerability and behavioral and cognitive risk factors.^[1] Igra V reported that 1 in 5 cases of PID occurs among younger women < 19 years of age

(20%).^[12] Although only about half of female adolescents are sexually active, they have the highest age-specific rates of PID among sexually experienced women. The risk of developing PID for a 15-year-old sexually active girl is estimated to be 10 times that of a 24-year-old woman. Freij BJ et al,^[13] in their study reported that risk of developing PID in sexually active females is inversely related to age. Other authors such as Washington AE et al,^[14] also reported that young age was an important risk factor for development of acute pelvic inflammatory diseases. Philip E Hay et al,^[15] prospective study set in 11 universities and 9 further education colleges in London found that multiple or new partners in the last 12 months, age <20 years and attending a further education college rather than a university were risk factors for PID after adjustment for baseline C. trachomatis infection.

In our study majority of the patients (52%) were multiparous 30 (30%) patients were primipara while 18% patients were nulliparous. Jossens MO et al,^[16] conducted a case control study of 234 women in which the authors identified risk factors associated with increased incidence of pelvic inflammatory disease. The authors found that Risk factors and markers identified by univariate analysis were < 12 years education, gravidity > 0, parity > 0, spontaneous abortion > 0, lack of a birth control method, > 1 male sexual partner in the previous 30 days, younger than 18 years at age of first sex, history of gonorrhoea, sex during the previous menses, douching, exposure to nongonococcal urethritis in the previous 30 days, and history of crack cocaine use. SV Patel et al,^[17] conducted a case control study to know the association between pelvic inflammatory disease (PID) and multiparity. Out of 143 cases, multiparity was present in 63 cases (44.05%) while in 150 controls it was in 80 (53.33%). The difference was not statistically significant ($p = 0.141$). The odds ratio for PID with multiparity as a risk factor was 0.69 with 95% confidence interval (CI) being 0.42-1.09. The authors in this study concluded that delivery conducted by untrained persons rather than parity itself is a risk factor for PID.

In our study most, common presenting complaints of patients were lower abdominal (68%), followed by low backache (58%), vaginal discharge (52%), low grade fever (48%), malaise (38%), dyspareunia (22%) and infertility (12%). Blake DR conducted a study to determine whether adolescent patients with pelvic inflammatory disease report predictable symptoms during the medical interview.^[18] Out of 193 adolescent and young adult women who had a pelvic examination performed to evaluate a wide range of genitourinary symptoms. Twenty (10.4%) patients received a clinical diagnosis of PID. Lower abdominal pain was the most common symptom (90.0%) reported by these patients. All of the patients with PID reported either lower abdominal pain or dyspareunia in the medical history compared with 97

(56.1%) of those without PID. The authors concluded that abdominal pain and dyspareunia had a high sensitivity for the diagnosis of PID. Similar conclusions were also reported by Eschenbach DA and Burnakis TG et al.^[19,20]

CONCLUSION

Pelvic inflammatory disease is a common cause of morbidity amongst women of child bearing age group. Young Age, use of contraceptive devices and increasing parity were found to be risk factors associated with PID. Early diagnosis and treatment is necessary to reduce long term morbidity in these patients.

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How to cite this article: Gopchade CA. Pelvic Inflammatory Disease in Women of Child Bearing age Group: A Prospective Study. *Ann. Int. Med. Den. Res.* 2018; 4(3):OG25-OG29.

Source of Support: Nil, **Conflict of Interest:** None declared