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ANTIBIOTIC PROPHYLAXIS ON DILATATION AND CURETTAGE FOR PREVENTING PELVIC INFLAMMATORY DISEASE EVENTS: IS IT NECESSARY?

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ABSTRACT

Objective: Aim of the study was to compare pelvic inflammatory disease (PID) symptoms in Dilataion and Curettage procedure with three antibiotic prophylaxis strategies.

Methods: The patients were all allocated to three Groups (i.e.A, B, and C). Group A comprised of patients receiving prophylactic antibiotics and then post-Dilatation and Curettage antibiotics, Group B were the ones who received prophylactic antibiotics without any post-Dilatation and Curettage antibiotics, and Group C did not receive any prophylactic antibiotics but they received post-Dilatation and Curettage antibiotics. The outcomes were measured to identify the occurrence of PID symptoms included erythrocyte sedimentation rate, leukocytes, temperature, vaginal discharge, pain, and bleeding.

Results: This study shows that there were no significant differences in any of the PID symptoms between all three antibiotic strategies except for pain scale (p=0.03).

Conclusion: The PID symptoms between all the three strategies of antibiotic prophylaxis were found to be similar.

Key words; Antibiotics, D/C

INTRODUCTION

There is an abundant use of antibiotics these days not only at community [2] but also at the hospitals [3,4]. Prophylactic antibiotics are used to prevent the incidence of the surgical wound infections, inhibit the emergence of normal resistant flora, reduce the incidence of post-operative morbidity and mortality, and reduce the cost of treatment same time. Prophylactic antibiotics, in general, in the surgical procedures are not used to sterilize tissues of the patients but to suppress the presence of microorganisms until the patient's own immune system can resist the microorganisms present during surgical procedure [6,7].

The selection of antibiotics used in hospitals is actually based on the guidelines or policy on the use of antibiotics, hospital formulary and diagnostic and therapeutic guidelines. Since the principle of antibiotic selection is based on the actual conditions in each hospital like patient load, each hospital has therefore a different policy with regards to the use of antibiotics, including the fitness of the antibiotics with local bacterial sensitivity in the particular hospital, as well as the cost-effectiveness of the antibiotics used there. The benefit of the use of prophylactic antibiotics for dilatation and curettage procedure remains controversial and unclear. Some studies conducted suggest that the antibiotic prophylaxis in Dilatation and Curettage is highly effective while others found that the antibiotic prophylaxis in Dilatation and Curettage is not effective in reducing the incidence of infection.

Pelvic inflammatory disease (PID) is an infection that can potentially occur in Dilatation and Curettage. It is an infection of the upper female reproductive system that is actually related to endometritis, salpingitis and pelvic peritonitis. PID can lead to much more serious reproductive disabilities, including, ectopic pregnancy, infertility as well as chronic pelvic pain [8-10].

Research evidence on the effectiveness of prophylactic antibiotics on Dilatation and Curettage has been controversial and limited [6,7,9]. Dilatation and Curettage procedure is performed transvaginally therefore justifies use of antibiotics as the patients have a risk of infection by the pathogens present in the lower genital tract [11]. A prospective study by Al-Ghoweri *et al*. conducted Jordan, supports not to give antibiotic prophylactics for Dilatation and Curettage procedure. This research is showed that the PID incidence was 9.5% in Group I (to whom prophylactic antibiotics were administered) and merely 10.14% in Group II (to whom prophylactic antibiotics were not administered), for which this difference was not found to be statistically significant [12]. Whereas, an another research which promised the benefits of antibiotic prophylaxis in Dilatation and Curettage procedure included a study which found a significant reduction in post-op PID in the low-risk patients, who applied for legal first trimester abortion and were treated pre-operatively with ceftriaxone[13]. In an another systematic review, author concludes=d that antibiotic prophylaxis was beneficial in the first-trimester suction Dilatation and Curettage [14]. This research aimed to compare the incidence of PID between several regimens of antibiotic administered in patients with Dilatation and Curettage procedure in sub himalyan peripheral institutes.

METHODS

This study was conducted at a sub himalyan peripheral institutes of CH Bhawarna and RH Bilaspur from September 2021 to Februrary 2022 .There were 60 women who met the study criteria and were classified into three groups: (i) Group A was the group of patients who received prophylactic antibiotic ceftriaxone injection and 2 × 500 mg of post-antibiotic cefixime (ii) Group B was the group of patients who received prophylactic antibiotic ceftriaxone injection without postop antibiotics and (iii) Group C was the group of patients who did not receive prophylactic antibiotics but received 2 × 500 mg of post-antibiotic cefixime for next 5 days. After five days follow-up, PID symptoms were identified. Observation of the occurrence of leukocyte >10,500 mm^3, lower abdominal pain, temperature >38°C, erythrocyte sedimentation rate (ESR) >15 mm/L, changes in vaginal fluid characteristics including consistency and odor in vaginal discharge and bleeding outside the menstrual cycle (i.e.irregular bleeding). Numerical pain rating scale i.e.(NPRS) was used to measure pain. NPRS consists of pain measurement in the form of straight line scale which consists of number scores of 0–10. Where 1–3 is mild pain/ 4–7 is moderate pain/ and 8–10 is severe pain. Vaginal bleeding and discharge were categorized as 1> none, 2 > a few, and 3 >approximately twice less from that of number 2.

Non-parametric Kruskal–Wallis tests/ one-way ANOVA were used to analyze the data's distribution/ significance statistically.

RESULTS AND DISCUSSION

Dilatation and Curettage is common services done in govt owned peripheral institutes by obstetricians in our sub himalyan region when indicated. On an average, there are about 30 patients per month with various indications, either diagnostic indications, such as severe menstrual bleeding, irregular menstrual bleeding and postmenopausal bleeding, or therapeutic indications such as endometrial polyps, endometrial hyperplasia, residual conception products after abortion, stem submucosal myomas, and failed abortions. Our peripheral hospital does not have any antibiotic guidelines for Dilatation and Curettage procedures, even though antibiotics are invariably given to the patient. In this study patients characteristics were altogether similar. The average age of patients was 32years in Group A, 30 years in Group B, and 35 years in Group C. There were several indications for patient's Dilatation and Curettage as depicted in (Table 1). The common Dilatation and Curettage indication was abnormal uterine bleeding (AUB): 65% in Group A, 65% in Group B, and 70% in Group C. The rate of abortion indication in this hospital is similar to other health facilities in nearby tertiary centers. In patients with abortion we use suction and evacuation technique since it is much safer than dilatation and curettage. Post menopausal bleeding patients second most common group for the procedure for diagnostic work up. It was noted that occurrence of various PID symptoms between three groups was similar with exception of pain (Table 2). The mean NPRS of Group A was 1.5 (group A), that of Group B was 1.75, and that of Group C was 1.05 (p=0.03). The mean NPRS in between Groups A and B was about 0.45, indicating a significant difference of 0.45 with an increasing tendency in the Group A. The NPRS mean difference between that of Groups A and B was 0.7, indicating a difference of 0.7 with increasing tendency in Group B (as the value was positive). Unlike a study at Bengaluru, India [17], our study shows that there are no significant differences in various PID symptoms except pain between three groups. This result also confirms a previous study which showed that there was no significant difference found among high-risk patients treated with that of ceftriaxone / ampicillin/pivampicillin or metronidazole [13]. In addition, a systematic review depicted that the antibiotic prophylaxis effectiveness was similar between several antibiotic regimens used.[18].

Although rare, it is actually possible to develop multivalvular, left-sided and right-sided endocarditis [19,20] or sometimes endogenous candida endophthalmitis [21]. Patients who have the endocarditis or endophthalmitis risk should be considered for antibiotic prophylaxis. As shown in another studies the antibiotic were not effective to prevent PID after the procedure of Dilatation and Curettage [22,23].

Table 1: Patient characteristics

Characteristics	Group A (%)	Group B (%)	Group C (%)
Age (Years)			
17–22	4 (20)	8 (40)	5 (25)
23–28	10 (50)	4 (20)	7 (35)
29–34	4 (20)	5 (25)	3 (15)
35–40	1 (5)	2 (10)	3 (15)
41–46	1 (5)	1 (5)	1 (5)
47–52	0 (0)	0 (0)	1 (5)
Indication			
Abortus incomplete	13 (65)	13 (65)	14 (70)
Dead conceptus	3 (15)	1 (5)	2 (10)
Blighted ovum	3 (15)	4 (20)	2 (10)
Fluxus pervaginam	1 (5)	2 (10)	1 (5)
Mola hidatidosa	0 (0)	0 (0)	1 (5)
Polip endocervix			
Menometrorrhagia			
Leukocyte			
>10,500 mm^3	1	2	0
Erythrocyte sedimentation rate			
>15 mm/l	5	10	14
Abdominal pain (NPRS 1–10)			
1–3	19 (95)	20 (100)	18 (90)
4–7	1 (5)	0 (0)	2 (10)

8–10	0 (0)	0 (0)	0 (0)
Temperature			
>38°C	0	0	0
Vaginal discharge			
1	19 (95)	20 (100)	17 (85)
2	1 (5)	0 (0)	3 (15)
3	0 (0)	0 (0)	0 (0)
Bleeding			
1	4 (20)	5 (25)	7 (35)
2	11 (55)	9 (45)	11 (55)
3	5 (25)	6 (30)	2 (10)

Table 2: Pelvic inflammatory disease symptoms after 5-day follow-up

Characteristics	Group A (%)	Group B (%)	Group C (%)
Leukocyte			
>10,500 mm^3	2 (10)	0 (0)	0 (0)
Erythrocyte sedimentation rate			
>15 mm/l	7 (35)	11 (55)	14 (70)
Abdominal pain (NPRS 1–10)			
1–3	12 (60)	9 (45)	19 (95)
4–7	6 (30)	7 (35)	1 (5)
8–10	2 (10)	4 (20)	0 (0)
Temperature			
>38°C	0 (0)	0 (0)	0 (0)
Vaginal discharge			
1	20 (100)	17 (85)	19 (95)
2	0 (0)	3 (15)	1 (5)
3		0 (0)	0 (0)
Bleeding			
1	13 (65)	4 (20)	9 (45)
2	7 (35)	10 (80)	9 (45)
3	0 (0)	0 (0)	2 (10)

Another study done on 84 women with uterine Dilatation and Curettage performed showed that total two cases of endometritis were found in the group who were given placebo (0.1 ml of Vitamin B complex intravenously about 20 minutes before Dilatation and Curettage) but none in the group whom 1 g of cefoxitin intravenously about 20 minutes before procedure (p=0.241) [25].

CONCLUSION

There was no significant difference in improvement of symptoms between the three groups of antibiotic prophylaxis i.e. pre/ post Dilatation and Curettage procedure. There was no significant difference again except to that of pain in the occurrence of the PID's symptoms after the procedure.

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