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Original Research Article

Is there any role of antibiotic as a post procedure prophylaxis in dilatation and curettage? A comparative single centre study at tertiary care centre

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ABSTRACT

Background: Dilatation and curettage (D and C) is one of commonest procedure in the gynaecology. There are still two schools of thoughts pertaining to whether to administer antibiotic as a pre and post procedure prophylaxis or not to administer and hence study planned to evaluate the incidence of infection in patients after dilation and curettage with and without prophylactic antibiotics.
Methods: Adults (>18 years) (n=100) who underwent dilatation and curettage procedure for any indication were included and patients with prior history of infection were excluded from the study. Patients were divided into 2 groups; group 1 (n=50) received prophylactic antibiotics and group 2 (n=50) received no prophylactic antibiotics as per the discretion of treating doctor.
Results: Infection in both the groups was 2% and there is no statistically significant difference between the groups (p>0.349).
Conclusions: Appropriate use of antibiotics can be a cost-effective strategy which can minimize the chances of development of antibiotic resistance and other side effects. Antibiotic are not necessary for pre and post procedure prophylaxis in D and C.

Keywords: Antibiotic Resistance, Common Gynecology Procedure, Dilatation and curettage

INTRODUCTION

Dilatation and curettage (D and C) is one of commonest procedure in the gynaecology. It is carried out in 2 parts, first cervix is dilated and then uterine cavity is scraped with a curette. It could be either diagnostic or therapeutic and can be applied to pregnant or non-pregnant women.[1] In the pregnant patient, it is indicated in elective termination of pregnancy, early pregnancy failure, evacuation of a molar pregnancy, or suspected retention of products of conception.[2]

Risk of post-procedural infection can be reduced considerably by maintaining proper aseptic conditions throughout the procedure, however still complications like infection, hemorrhage, cervical lacerations, uterine perforation, and post-op uterine adhesions may occur.[1,3-5] There are still two school of thoughts pertaining to whether to administer antibiotic as a prophylaxis or not to administer. One of the published article states benefits of prescribing antibiotic as a prophylaxis.[6]

Aim of our study is to find the incidence of infection in patients after dilation and curettage with and without administering prophylactic antibiotics.

METHODS

This study was carried out after obtaining approval from the Institutional Ethics Committee that is approved by

Ministry of Health, Government of India (EC/NEW/INST/2019/245). The study was carried out between June 2019 to July 2021. This study was a single centre, retrospective study. Ethics committee approved wavier of written informed consent from the study participants.

Study participants

Adults (>18 years) (n=100) who underwent dilatation and curettage procedure for any indication were included and patients with prior history of infection, diabetic, patients suffering from heart diseases, anemia, immuno compromised, long standing retained product of conception and patients allergic to Cefuroxime and Metronidazole were excluded from the study. Patients were divided into 2 groups; group1 (n=50) received prophylactic antibiotics and group 2 (n=50) received no prophylactic antibiotics as per the discretion of treating doctor. Patients's information inclusive of demographics (age, sex, height, weight, BMI), diagnosis, prior infection history, duration of procedure of D and C, intra-operation complications and other data confirming presence of infection like temperature >38.5, abnormal pulse rate, respiratory rate and vaginal discharge were extracted from medical records. Parameters collected on baseline visit and 7 days post-operative procedure.

Endpoint

Percentage of patients with infection post D and C procedure.

Sample size estimation

With a power of 80% and type 1 error rate of 5%, a clinically significant difference of 10% the sample size for each arm was estimated to be 50.

Statistical analysis

Descriptive statistics were reported as mean (SD), data is represented with median and interquartile range. A Chi square t-test was used to analyze the data for a single variable viz presence of infection with and without antibiotics. As statistically significant difference was considered if p value <0.05. Analyses were performed with the use of SPSS version 20.

RESULTS

Data of 100 women within age group of 18-67 years who underwent D and C from 26th June 2019 to 8th July 2021 was included and analyzed. Patient characteristics are summarized in Table 1.

Table 1: Patient characteristics.

Variables		Without Antibiotic N (%)	With Antibiotic N (%)
Patient numbers		50	50
Age	Mean±SD	43 (10)	45 (11)
Fever	Number with percentage	3 (4)	3 (6)
Foul smelling discharge	Number with percentage	0	0
Intra op complications	Number with percentage	2 (4)	2 (4)
Duration of procedure <30 minutes	Number with percentage	47 (94)	48 (96)
Duration of procedure >30 minutes	Number with percentage	3 (6)	2 (4)
Infection	Number with percentage	1 (2)	1 (2)
Hb	Median and interquartile range	11 (4)	12 (3)
RR	Median and interquartile range	19.5 (6)	21 (7)

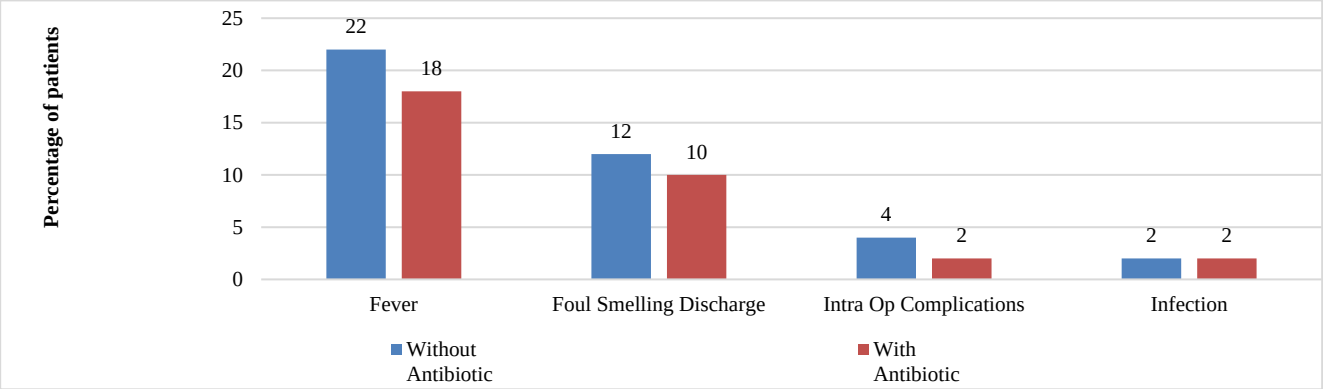

Figure 1: Comparative analysis between the arms.

The mean age of patients was 40 (13) and 35 (10) years in "antibiotic" and "no antibiotic group" respectively. Fifty patient each were included in both the study arms. There was no significant difference with reference to age between two groups. We found no conclusive evidence that there was difference in infection rates in the two groups. Infection in both the groups was 2% and there is no statistically significant difference between the groups (p>0.349) (Figure 1).

DISCUSSION

The annual incidence of pelvic inflammatory disease in the developed countries is around 10-13 per 1000 women.[7]

In gynecological surgeries, one of the most common route is trans-cervical intrauterine route. There is a belief that this surgical procedure through vagina may lead to variety of post-procedure infection as bacterial flora is abundant in vagina. An operative procedure through the vagina may, therefore, be considered to have added potential for post-procedure infection.[8,9] This may be true for major procedures like vaginal hysterectomy, operative hysteroscopy, prolapse repair. But for a minor procedure like D and C prophylactic antibiotics are not needed. Pelvic inflammatory disease affects 24-32% of women in India and 1% of the 15-25 year age group of young adults around the world.[10,11]

Results of our study show that there is no statistically significant difference between incidence of infection in two groups (group 1 - with antibiotic and group 2 - without antibiotic). Results of our study is consistent with other studies reported earlier (Table 2, Figure-1).[12-14]

Table 2: Comparison incident of infection with other studies.

Study	Sample size (percentage of PID in antibiotic arm)	Sample size (percentage of PID in no antibiotic arm)	P value
Prieto et al[12]	120 (6.6%)	120 (5.8%)	Clinically Not significant
Makris et al[13]	33 (12%)	34 (9%)	Clinically Not significant
Titapant et al[16]	0	2%	P>0.241
Current study	2%	2%	P>0.349

On the contrary according to antibiotic prophylaxis for gynaecologic procedures there are various adverse drug reactions (ADR) observed ranging from minor skin rash to anaphylaxis with the use of antibiotic prophylaxis. Diarrhea is common and anaphylaxis is rare may occur in up to 29 and 0.2 percent of patients respectively. These ADR are reported to occur depending on antibiotic used and patient characteristics.[15]

Another serious concern is development of antibiotic resistance pathogens. Unnecessarily prescribing antibiotics can lead to complications without any therapeutic benefit.[16]

There are two fold disadvantages of prescribing antibiotics in D and C procedure. One that we discussed earlier about ADR and another is antibiotic resistance. On the basis of available information we strongly discourage routine use of antibiotic prophylaxis for D and C procedure given that it has long term complication like antibiotic resistance and other side effects in addition to its cost effectiveness.

Limitations of the study: Authors had little control over the data as the study is retrospective in nature, randomized controlled prospective studies are required to confirm these findings.

CONCLUSION

We found no significant difference in infection rate post D and C procedure in both the groups. Appropriate use of antibiotics can be a cost-effective strategy which can minimize the chances of development of antibiotic resistance and other side effects. On the basis of our result, we do not recommend use of routine antibiotics for D and C procedure.

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