

Short Communication

A comparative study on ofloxacin and azithromycin in combination with metronidazole to outpatients with pelvic inflammatory disease

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This study aims to compare two oral treatments: Ofloxacin and Metronidazole, with Azithromycin and Metronidazole in outpatients with Pelvic Inflammatory Disease. This study was carried out by Randomized Clinical Trial in Al-zahra Women Hospital of Rasht. Two hundred women were selected based on eligibility criteria of having three out of the five following symptoms: lower abdominal pain, vaginal discharge, adnexal tenderness, cervical motion tenderness and cervicitis. Two hundred patients were divided randomly into two groups (A and B). Group A was treated with Ofloxacin (400 mg) with Metronidazole (500 mg) and Group B was treated with a single dose of oral Azithromycin (1gr) with Metronidazole (500 mg) for 10 days. These two regimens were compared in terms of side effects and efficacy. Patients were revisited 14 days after the beginning of the treatment by a physician. The continuation of even one clinical symptom was considered as treatment failure. The study was completed in a six month period. Two hundred patients were assigned into two groups of 100 patients per group and treated with medication regimens A or B. Eleven patients were excluded from the study (adverse drug reaction no=4, no return visit no=5, and lack of compliance with treatments no=2). Pre-treatment symptoms for the groups were not significantly different except CMT ($P=0.015$). Post-treatment cure rates for the two groups were 90.3% for group A and 93.75% for group B ($p=0.383$). There was no statistical difference in the outcome of treatments. GI upset in four patients in Met with Ofi, and three patients in Met with Azi group resulted in discontinuation of their treatment ($p=0.206$). Azithromycin was the preferred treatment for Pelvic Inflammatory Disease because of the simplicity and shorter duration of its use.

Key words: Pelvic inflammatory disease, ofloxacin, azithromycin, metronidazole.

INTRODUCTION

Pelvic inflammatory disease (PID) is one of the most common reasons of gynecologic visits. PID could be harmful to the women's general health because it can interfere with their routine activities and cause different symptoms and problems (MMWR 2002). Untreated or unsuccessful treatment of PID could cause long term

complications such as, chronic recurrent pelvic pain, tubal infertility and ectopic pregnancy. Its most common complication is infertility (20% of patients) (Westrom et al., 1999). Also, ectopic pregnancy is 6-10 times more common in patients with a history of PID (Rock and Jones, 2011; Berek, 2007)

Neisseriae gonhorrea and *Chlamidia trachomatis* and other aerobic and non-aerobic micro-organisms can cause PID. The first step in treating PID is administration of combined antibiotics. Currently, the most effective treatment available is antibiotics such as: Quinolons, Cephalosporines, Metronidazole, Doxycycline and

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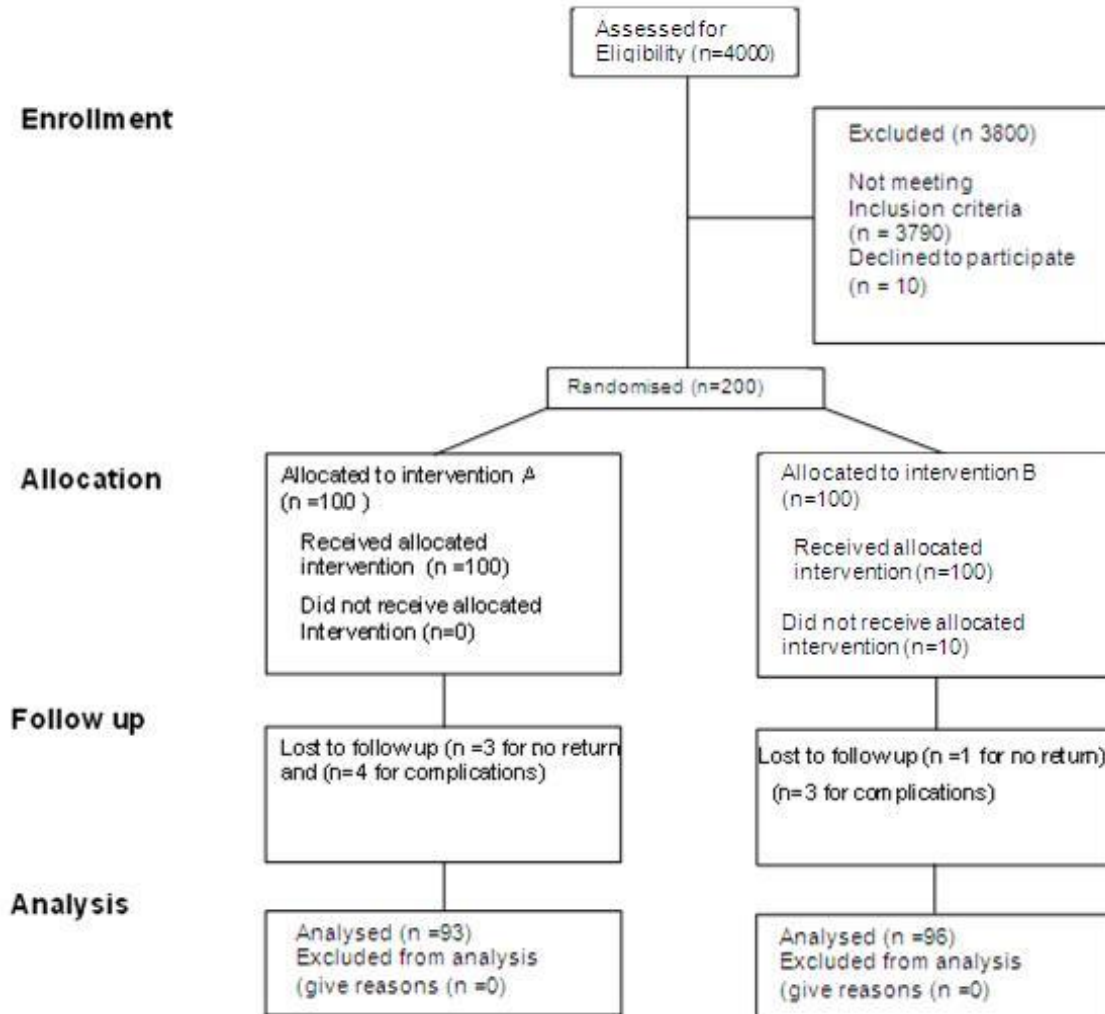


Figure 1. Flow chart of subjects assignment into the two groups.

Azithromycin (Dosdon, 1995). Since using different regimens of antibiotic in different regions of the world create a variety of resistant bacteria, a proper antibiotic regimen should be established for each region, so that a proper medication regimen could be chosen with respect to spectrum, accessibility, price, compliance and tolerance of patients, and side effects. The objective of this study is to compare two medication regimens in terms of efficacy and side effects.

MATERIALS AND METHODS

This is a clinical trial of comparing two treatment regimens, A: Ofloxacin 400mg/BD for 10 days with Metronidazole 500 mg/BD for 10 days versus, B: single dose of oral Azithromycin 1 g with Metronidazole 500 mg/BD for 10 days. Two hundred women were enrolled for this clinical trial. Eligibility criteria were having three out of five symptoms of lower abdominal pain, vaginal discharge, adnexal tenderness, cervical motion tenderness (CMT), and cervicitis.

Excluding criteria were as follows: unmarried women, pregnant women, women with infection during menstruation, history of abortion or miscarriage during the last month, underlying diseases such as diabetes, used antibiotics in the last month, or allergy to the antibiotics used in the study, history of Pelvic Inflammatory Disease within the last year, and multipartner women.

Patients were informed that both treatments are effective in PID; and they must take the tablets for 10 days except Azithromycin tablet which is used in single dose. After obtaining an informed consent, patients were randomly assigned into two groups: A and B. Then, through the Coin Method by a physician not informed about each patient's medication regimen, one of the two regimens was administered for each patient. The setting was Alzahra Maternity Hospital Gynecology Clinic of Rasht in Northern Iran. Patients had a visit after five days. If patients had shown any evidence of improvement (like reduction in all of clinical symptoms according to the patients statement and doctor's examinations) treatment was continued. If symptoms showed no improvements the patient was excluded and referred for hospital admission. Patients were revisited 14 days after the beginning of the treatment by their physician. If even one clinical symptom persisted, the treatment was considered as unsuccessful (Figure 1). Data were processed by SPSS.14 software; and analyzed through Chi-square

Table 1. Post-treatment outcomes for two treatment groups according pre-treatment symptoms

Treatment Outcome: Description	Met+Ofl(n1=93)**		Met+Azi(n2=96)***		Subtotal		P value	
	Number		Number		Number		Number	
	cured	not cured	Cured	no cured	cured	no cured	cured	no cured
CMT*	58	9	76	6	134	15	0.02	0.7
Cervicitis	72	8	78	5	150	13	1	1
Adnexes tenderness	28	5	46	6	74	11	0.022	0.1
Vaginal discharges	55	7	60	4	115	11	0.87	1
Pelvic-Abdominal pain	72	9	67	5	139	14	0.09	0.4

*Cervix Motility Tenderness **Metronidazol with Ofloxacin ***Metronidazol with Azithromycin

test or t-test.

RESULTS

The study was completed in a six month period. Two hundred patients were assigned into two groups of 100 patients per group and treated with medication regimens A or B.

Eleven patients were excluded from the study; (adverse drug reaction=4, no return visit =5, and lack of compliance with treatments =2). Pre-treatment symptoms for the groups was not significantly different except CMT (P=0.015). According to Table 1, post-treatment cure rates for the two groups were 90.3% for group A and 93.75% for group B (p=0.383). There was no statistical difference in the outcome of treatments.

Complications occurred in 7 patients: (GI upset in four patients in Met with Ofl, and three patients in Met with Azi group) resulted in discontinuation of their treatment (p=0.206).

DISCUSSION

We found no statistically significant difference between Ofloxacin and Azithromycin in Combination with Metronidazole.

According to Rustomjee, single oral dose of Azithromycin is more effective than cyprofloxine with Doxycycline in the treatment of sexually transmitted diseases (Chlamidia trachomatis alone; or with *N. gonorrhoea*, or *N. gonorrhoea* alone. Azithromycin treatment makes the treatment course shorter and simpler (Rustomjee et al., 2002).

In another study Ceftriaxone and Doxycycline were superior to Ofloxacin in terms of cost (Rahimzadeh et al., 2003).

Conclusion

We suggest that single oral dose of Azithromycin could be the drug of choice in the outpatient treatment of Pelvic Inflammatory Disease. Because of a few limitations in our study we suggest that other studies under the same conditions or a trial with larger sample size be carried out to compare these two regimens.

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