

Misoprostol for the Purpose of Midtrimester Termination of Pregnancy: A Comparative Study with Prostaglandin F2 Alpha With Oxytocin Infusion

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ABSTRACT

Objective: To compare the efficacy of misoprostol versus prostaglandin F2 alpha with oxytocin usage in the medical management of termination of pregnancy due to presence of congenital anomalies incompatible to life or intrauterine fetal demise.

Design: comparative study

Place and duration of study: The present study was conducted in Services Hospital Lahore between January 2011 and March 2011.

Method: A total number of 50 patients of 18-40 years of the age were studied. These patients were randomly selected who presented to Gynecology and Obstetrics out door with mid trimester fetal or congenitally malformed fetus incompatible to life, conformed on ultrasonography. These women randomized to receive either intravaginal misoprostol or extraamniotic prostaglandin F2 alpha along with oxytocin for midtrimester termination of pregnancy.

Results: A comparative study was carried out which revealed that out of the 50 studied patients, the presenting age of misoprostol treating group was 26.7 and age of PGF2 alpha oxytocin treating group was 25.0. Gestation age of misoprostol treating group was 23.6 and PGF2 alpha oxytocin treating group was 22.8. Bishop score of misoprostol treating group was (5.08 mean) and PGF2 alpha oxytocin treating group (5.2 mean). Expulsion of fetus in misoprostol treating group was 24(96%) and in PGF2 alpha oxytocin treating group 23(92%). Evacuation need in misoprostol treating group was 4(16%) and in PGF2 alpha oxytocin treating group 11(44%).

Key words: Termination of pregnancy, Prostaglandin F2 alpha, Oxytocin

INTRODUCTION

Misoprostol is widely prescribed for the prevention and treatment of gastric ulcers and has been approved for this indication in nearly 100 countries worldwide. In a number of countries, misoprostol is also specifically approved for obstetric and gynecologic uses. Misoprostol is inexpensive, stable at ambient temperatures, easy to transport, easy to administer, and does not require refrigeration, even in hot climates. Thus misoprostol has potential to significantly expand medication abortion access in developing countries. In an increasing number of countries, misoprostol has been approved specifically for obstetric and gynecologic indications, including post-partum hemorrhage prevention, incomplete abortion management, and, in conjunction with mifepristone, early pregnancy termination. Prostaglandins are naturally occurring fatty acids produced by many tissues in the body. Prostaglandin E1 causes myometrial contractions by interacting with specific receptors on myometrial cells. This interaction results in a cascade of events, including a change in calcium concentration, thereby initiating

muscle contraction. Misoprostol is an analog of prostaglandin E1. By interacting with prostaglandin receptors, misoprostol causes the cervix to soften and the uterus to contract, resulting in the expulsion of the uterine contents.

In the roughly 15%-25% of cases where misoprostol administration does not lead to a complete abortion, additional intervention is required. Recent studies have shown that approximately 10% of women using misoprostol for early pregnancy termination will experience an ongoing pregnancy. . Dilatation and evacuation is safe and effective, but can be only performed by gynaecologists who are skilled in the technique. Medical induction of abortion using the prostaglandin E1 analogues gemeprost or misoprostol alone is efficient, although the mean induction-to-abortion interval can be as long as 12 to 16 hour. Pretreatment with the anti-progesterone mifepristone, prior to prostaglandin administration, reduces the induction to- abortion interval, as well as the analgesia requirements and the total dose of prostaglandin required. At gestations of between 9 and 13 weeks, surgical methods are almost exclusively used, although recently published data has shown that medical abortion is feasible at these gestations. Furthermore, the synthetic prostaglandin E1

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analogue misoprostol has been shown to be a cheap and effective alternative to gemeprost when used in combination with mifepristone for both first and second trimester abortion

MATERIAL AND METHOD

This comparative study was conducted from January 2011 to March 2011 in Services Hospital Lahore and sampling was done by non-probability convenience technique. Fifty patients of 18-40 years of age were selected who presented with mid trimester fetal loss or congenitally malformed fetus incompatible to life. Patient characteristics were recorded in each case, including presenting symptoms, onset of symptoms, physical examination. Patients undergoing labor induction for intrauterine fetal demise at 14-28 weeks of gestation, patients undergoing labor induction because of congenital anomalies in the fetus and singleton pregnancy were included. Patients were divided at random into two groups. One group consisted of 25 patients receiving intravaginal misoprostol 200µg (crushed cytotec tablet) per vagina with 2.5mg hydroxyethyl gel. Second group consisted of 25 women that induced with extra amniotic prostaglandin F2 alpha injection along with oxytocin infusion.

RESULTS

A comparative study was carried out which revealed that out of the 50 studied patients, the presenting age of misoprostol treating group was 26.7 and age of PGF2 alpha oxytocin treating group was 25.0. Gestation age of misoprostol treating group was 23.6 and PGF2 alpha oxytocin treating group was 22.8. Bishop score of misoprostol treating group was (5.08 mean) and PGF2 alpha oxytocin treating group (5.2 mean). Expulsion of fetus in misoprostol treating group was 24(96%) and in PGF2 alpha oxytocin treating group 23(92%). Evacuation need in misoprostol treating group was 4(16%) and in PGF2 alpha oxytocin treating group 11(44%).

Characteristics	Misoprostol TG(25)	PGF2 alpha Oxytocin TG(25)
Age	26.7(18-35)	25.0(22-40)
Gestation	23.6(18-28)	22.8(18-28)
Bishop score	5.0(mean)	5.2(mean)
Expulsion of fetus	24(96%)	23(92%)
Evacuation needed	4(16)	11(44)

*TG= Treating Patient

DISCUSSION

The inclusion of prostaglandins in the management of termination of second trimester fetal demise has changed the conventional way of surgical evacuation of the uterus. This alternative approach for such

problems is based on the uterotonic properties of the agents. One such agent is the cheap, safe and orally active prostaglandin analogue, misoprostol. The other agent is PGF2α when used with oxytocin infusion, is the drug of choice, through its high cost and reduced shelf life in the hot climate render it's a second option in our setup. Carbonell studies the women with vaginal misoprostol every 24-48 hours up to a maximum of three doses. Carbonell regimen yielded the highest overall success rate of 87-94%. Kooper Smith and Mishall and Tang studies are one of the examples which completed within day and with the success rate of 60-70%. In this study misoprostol was successful in termination of pregnancy in 96% of cases with PGF2α lagged slightly behind (success rate is 92% of the cases). These results were comparable and the differences in the success rate between two regimens are not clinically significant. Aston found 40% of women treated with misoprostol required surgical evacuation which represents a large saving and worthwhile benefit.

CONCLUSION

Using misoprostol vaginally alone for a maximum of four doses with the success rate of 96% is a cheaper, more effective and rapid method of medical termination of second trimester pregnancy when compared with PGF2α with oxytocin infusion usage.

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