Research Article

Outcome of Induction of Labour by Oral Misoprostol of Intrauterine Fetal Death

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Abstract

Objective: To review our one year experience in induction of labor in cases of intrauterine fetal death (IUFD) using oral misoprostol. **Methods:** A descriptive study of 170 women with IUFD after 28 weeks who had induction of labor with oral misoprostol at the obstetric unit of our BRIMS Hospital, Bidar. **Results:** 169 patients were delivered vaginally. Misoprostol dose ranging from 25 to 300 µg was used to achieve labor. Majority (65%) of the patients required a total dose of 100 µg or less to achieve labor. The dose required to achieve labor was found to decrease with increasing gestation; 50 µg at 36 weeks and above and 200 µg at between 28 and 30 weeks. The induction delivery interval (IDI) varied from 4 hours to 36 hours with a mean of 15 hours ± 5 hours. The IDI was also found to be dependent on gestational age. Of the 145 (85.0%) that delivered within 24 hours, 125 (73.53%) were at least 32 weeks. Fifteen (8.8%) women required augmentation. Fifteen (8.8%) patients had post partum haemorrhage because of retained bits of membranes. Three (1.7%) patients had retained placenta. One (0.5%) patient had rupture uterus. **Conclusion:** The results of this study confirm that misoprostol is an effective induction agent in IUFD, but it should be used with caution and strict monitoring. It should not be given by paramedical staff.

Key words: induction of labour, intrauterine fetal death, misoprostol

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INTRODUCTION

Intrauterine fetal death (IUFD) is a common problem in obstetric practice[1,2,3]. It may be complicated by psychological problems, infection, and consumptive coagulopathy[1,3]. For the obstetrician confronted with IUFD especially in the presence of a unfavourable cervix, it poses a major challenge1-5. The introduction of prostaglandins into obstetric practice has solved this constraint in economically advantaged countries. In low resource setting, the cost, transportation and special storage requirements of prostaglandins make it unavailable[6]. Misoprostol (Cytotec, Searle Pharmaceuticals, Chicago, IL.) a prostaglandin E_1 analogue used for the treatment of drug induced gastric ulcer, has been found to be effective and safe in induction of labour[3,6]. Its safety, cost effectiveness and ease of administration make it ideal for low resource settings like ours[6].

MATERIAL AND METHODS

This study was conducted at the obstetric unit of our BRIMS hospital, Bidar. All patients with IUFD after 28 weeks of pregnancy who had induction of labour with misoprostol over a period of one year (January 2014 to December 2014) were recruited into the study. In all cases IUFD was confirmed with ultrasonography. An informed consent and ethical clearance were obtained. Excluded from misoprostol induction of labor in our practice even in the presence of IUFD were cases of: previous uterine surgery, placenta praevia, abnormal lie, multiple pregnancy, parity of 5 and above and known contraindication to the use of prostaglandins. The patient was given oral misoprostol preferably induction started early in the morning. The patient was transferred to the labor ward when labor ensued (having at least one contraction in 10 minutes lasting 20 seconds). Labor was monitored using the WHO partograph (WHO 1994). Labor complications were managed according to our departmental protocol.

Table 1: Causes of IUFD among the Patients

Cause of IUFD	Number (Percentage)
Oligohydramnios	30 (17.65%)
Preeclampsia	35 (20.59%)
Eclampsia	10 (5.88%)

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Abruptio placnetae	03 (1.76%)
Congenital anomalies	12 (7.06%)
Severe IUGR	20 (11.76%)
Cord Prolapse	10 (5.88%)
PROM	30 (17.65%)
Unknown Cause	20 (11.76%)

Table 2: Relationship between Dosage Requirement and Gestational Age

Gestational age (Weeks)	Dosage range (micrograms)	Model dose
28 - 31	200 - 300	300
32 – 35	150 - 200	200
36 – 39	50 - 100	100
40 and above	25 – 50	50

RESULTS

During the study period, 170 women with IUFD after 28 weeks had induction of labor with oral misoprostol in our center. The age of the women ranged from 19 to 42 years with a mean of 27.1 ± 6.4 years. The modal gestational age was 31 weeks. Majority of the women were multiparas 152 (89.4%), with only 18 (10.58%) nulliparas. 145 (85.2%) women were unbooked and 25 (14.7%) were booked for delivery. The causes of IUFD are shown in Table I. All the women had successful induction of labor, requiring misoprostol dose ranging from 25 to 300 µgm. While 140 (82.3%) women required 50 µgm to establish labor, 12 (7.05%), 12 (7.05%) and 6 (3.5%) required 25, 100, 200 µgm respectively. The modal doses are given in Table II which also shows the relationship between gestational age at induction and the dose of misoprostol required to establish labor. The mean dose required to achieve established labor was found to decrease with increasing gestation. While the mean dose of misoprostol required achieving established labor in pregnancies above 36 weeks was 100 µgm, that at gestational age of 28 to 30 weeks was 300 µgm. The induction delivery interval varied from 4 hours to 36 hours with a mean of 15 hours ± 5 hours. Of the 170 women that had misoprostol induction of labour, 145 (85%) delivered after 12 hours in labour but within the 24 hours, 15 (8.8%) delivered within the 12 hours and 10 (5.8%) delivered after 24 hours. The induction delivery interval was also found to be dependent on the gestational age at induction. Of the 145 (85 %) that delivered within 24 hours, 125 (86%) were at least 32 weeks. All the women that delivered after 24 hours were of gestational age less than 32 weeks. 15 (8.8%) women required augmentation with oxytocin for inefficient uterine contraction. In 15 (8.8%) women complications like postpartum haemorrhage because of retained bits of membranes for which D&C was done. Three women had retained placenta for which manual removal was done. One woman had rupture uterus, laparotomy and rent repair was done, and same patient required two pints of blood transfusion.

DISCUSSION

The occurrence of IUFD constitutes a major nightmare to women and attending clinicians[1,2]. It is even more agonizing, with a feeling of defeat to the clinician if it occurs unexpectedly and the cause cannot be explained1. Therefore, the ideal drug for the termination of pregnancy in cases of IUFD should not only be effective and safe, but should be affordable to avoid additional financial burden arising from a wasted pregnancy. Before the introduction of misoprostol, use of oxytocin for induction of labour in IUFD was often difficult and frustrating[3,4]. Our experience shows that misoprostol is a very effective and safe method of induction in IUFD, with 99.5% vaginal delivery rate and few complications. Its stability at room temperature, need for no special storage requirement and cost effectiveness make it an ideal method of induction in both developing and developed countries. The result of this study is similar to the findings in other reports[3-5]. Based on the results of this study we consider misoprostol an effective and safe drug, with acceptable side effect profile. It should be used with caution with strict monitoring. Should not be given by paramedical staff.

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