ISSN- O: 2458 - 868X, ISSN–P: 2458 – 8687
Index Copernicus Value: 68 . 16
PubMed - National Library of Medicine - ID: 101731606

International Journal of Medical Science and Innovative Research (IJMSIR)
IJMSIR : A Medical Publication Hub
Available Online at: www.ijmsir.com
Volume – 5, Issue –3, May - 2020, Page No. : 215 - 218

Study of Oral Misoprostol for Labour Induction in Pregnancies >28 Weeks with Intrauterine Foetal Death at Tertiary Care Hospital Bikaner

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Citation this Article: Shilpee Singh, Kamlesh Yadav, "Study of Oral Misoprostol for Labour Induction in Pregnancies >28 Weeks with Intrauterine Foetal Death at Tertiary Care Hospital Bikaner", IJMSIR- May - 2020, Vol – 5, Issue -3, P. No. 215– 218.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: The present study aims to compare the number of misoprostol doses needed orally to induce labour and need of oxytocin for augmentation of labour.

Methods: The present observational and prospective study is an attempt to study the number of misoprostol doses needed orally to induce labour of pregnancies more than 28 weeks with intrauterine fetal death.

Results: Mean number of 50µg misoprostol required was 2.54±1.30. According to number of 50µg misoprostol required. 18%, 46%, 12%, 16%, 4% and 4% cases had 1,2,3,4,5 and 6 number of 50µg misoprostol respectively. Mean number of 50µg misoprostol required was 2.54±1.30.

Conclusion: The oral misoprostol is a safe and effective method for induction of labor following IUFD after 28 weeks of gestation. The induction to delivery interval is shorter with lesser side effects.

Keywords: Misoprostol, Oxytocin, Induction of labour.

Introduction

Any mishap to a baby at any gestation is miserable to expectant parents and their relatives as well as to the attending obstetrician. Inspite of advances in medical science, diagnostic procedures and therapeutic modalities, pregnancy loss still occurs, at unacceptably high rate[1].

As per WHO (1950) foetal death define as 'death prior to complete expulsion or extraction from the mother of a fetus irrespective of duration of pregnancy and which is not an induced termination of pregnancy[2].'

A variety of definitions are used for intrauterine foetal death (IUFD) in different countries. For statistical purposes, WHO recommended that the intrauterine foetal death occurring after 20 weeks or foetal weight >500 grams when gestational age is not known, should

be classified as foetal death (still birth), to differentiate it from early pregnancy loss or spontaneous abortion[2].

There are different methods of inducing labour which includes both pharmacological medication and mechanical or physical method. Pharmacological methods include prostaglandin E_2 (dinoprost), a prostaglandin E1 analogue (misoprostol) and intravenous oxytocin. Whereas mechanical methods encompass membrane stripping, artificial rupture of membranes, extra-amniotic saline infusion, transcervical balloons, and hygroscopic cervical dilators[10]. In cases of IUFD, the ideal method for the induction of labour should not only be effective and safe, but should also be affordable to avoid additional financial burden arising from a wasted pregnancy[3].

Mechanical methods are amongst the oldest methods used to initiate labour. During the last decades medication such as PGE_2, misoprostol and oxytocin have partly replaced mechanical methods. Mechanical methods for induction promote cervical ripening and onset of labour by stretching the cervix. In extra-amniotic saline infusion (EASI) method saline is infused via Foley catheter that is placed through internal cervical os, into the space between internal os and placental membranes. It acts probably by dual mechanism of action through local release of endogenous prostaglandins and mechanical dilatation of cervix[4].

Misoprostol is a synthetic prostaglandin E_1 (PGE_1) that is approved as a 100 or 200µg tablet for peptic ulcer prevention. It has been used for induction of labour and may be administered orally, vaginally or sublingually. It increases the vaginal delivery rate within 24 hours[5]

Material and Methods

The present study was conducted in the Department of Obstetrics and Gynaecology, S.P. Medical College associate Associated group of hospitals, Bikaner, Rajasthan.

Study design: Prospective study.

Study period: from 1st October. 2018 to 30th Sep 2019.

Study population: The study group comprised of pregnant female with intrauterine foetal death >28 weeks attending Obstetrics and Gynaecology Department in S.P. Medical College Bikaner, consenting to participate in the study , 50 women met within the inclusion criteria were included.

Inclusion criteria

1. Singleton gestation
2. Gravida 1 or 2
3. Intact membranes
4. Bishop score less than 4
5. Gestational age >28 weeks to 40 weeks

Exclusion criteria

1. APH due to either placenta praevia or abruptio placenta
2. Active genital herpes infection
3. Invasive Cervical carcinoma
4. Hypersensitivity to cervical ripening agents
5. Transverse lie
6. Glaucoma
7. Severe local infection
8. Patients in spontaneous labour
9. Patients with inadequate pelvis
10. Malpresentations
11. Patients with previous LSCS
12. Latex allergy

Sampling methods: Random sampling

Methodology

The trial was included women both booked and unbooked women admitted after 28 weeks of gestation

and above with a clinical diagnosis of intrauterine foetal death which was confirmed by ultrasound scan.

50 women were given 50 microgram of misoprostol tablet orally with water every four hours. Maximum six doses were given. Assessment of cervical dilatation and effacement was done every four hours.

Data Analysis

To collect required information from eligible patients a pre-structured pre-tested Proforma was used. The statistical analysis was performed using the Mean, Standard Deviation, Chi square test and T-test. Variations of $p<0.05$ were considered to be statistically significant.

Observations

Table 1: Socio-demographic profile

Variable	
Age (Yrs)	23.30±4.21
Rural : Urban	33:17
ANC Registered cases	23(46.00%)
Gravida I:2	32:18

Mean age was 23.30±4.21 Yrs.

Table 2: Gestational variable

Variable	
Bishop score	0.98±0.89
Mode of delivery (Vaginal:LSCS)	49:1
Induction Delivery Time (hrs)	10.99±5.18 Hrs
Gravida I:2	32:18

Mean Bishop score was 0.98±0.89. 98% cases delivered vaginally and 2 % cases delivered by caesarean section. The mean induction delivery time was 10.99 hour.

Table 3.Distribution of cases according to number of 50µg misoprostol required

Number of 50µg Misoprostol	No.	%
1	9	18.0
2	23	46.0
3	6	12.0
4	8	16.0
5	2	4.0
6	2	4.0
Mean	2.54	
SD	1.30	

Table 2 shows distribution of cases according to number of 50µg misoprostol required. 18%, 46%, 12%, 16%, 4% and 4% cases had 1,2,3,4,5 and 6 number of 50µg misoprostol respectively. Mean number of 50µg misoprostol required was 2.54±1.30.

Table 4: Distribution of cases according to intrapartum and postpartum maternal complications

Maternal Complication	No.	%
Uterine Tachysystole	1	2.0
Postpartum Pyrexia	1	2.0
Postpartum Haemorrhage	0	-

Out of 50 cases, 1 cases had uterine tachysystole. Postpartum pyrexia was also found in 1 case.

Discussion

Several methods of induction of labor following late IUFD have been described in literature. Our study was aimed to see the effectiveness of misoprostol for induction of labour in case of IUFD after 28 weeks of gestation and to compare this to other described regimen in the literature and to assess how our regimen performs among our population. In our study we used the dose regimen of 50 microgram of misoprostol tablet

orally with water every four hours. Maximum six doses were given. Our study showed that this regimen is very effective and safe method to induce labor in late IUFD with minimal side effects. As this regimen is cost effective, it is also suitable for our socio economical set up.

In our study the mean induction to delivery interval was 10.99 hours. This was comparable to previous studies using different dose regimen of vaginal misoprostol.[4,5] Bugalho et al found a quicker uterine response in women with more advanced gestation. Study done by EL.5 Gharib et al, and Ezechi et al also shows that induction delivery interval is inversely proportional to gestational age. Uterine sensitivity to misoprostol is known to increase with advancing gestation.[6,7]

Conclusion

The oral misoprostol is a safe and effective method for induction of labor following IUFD after 28 weeks of gestation. The induction to delivery interval is shorter with lesser side effects.

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