

Study of vaginal misoprostol for labour induction in late intrauterine fetal death

¹Dr. Shivpal Moond, Department of Obstetrics and Gynecology, SMS Medical College, Jaipur, Rajasthan, India

²Dr. K.P. Banerjee, Department of Obstetrics and Gynecology, SMS Medical College, Jaipur, Rajasthan, India

³Dr. Reena Pant, Department of Obstetrics and Gynecology, SMS Medical College, Jaipur, Rajasthan, India

Corresponding Author: Dr. Shivpal Moond, Department of Obstetrics and Gynecology, SMS Medical College, Jaipur, Rajasthan, India

Citation this Article: Dr. Shivpal Moond, Dr. K.P. Banerjee, Dr. Reena Pant, “Study of vaginal misoprostol for labour induction in late intrauterine fetal death”, IJMSIR- February - 2021, Vol – 6, Issue - 1, P. No. 72 – 75.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Objective: The study was conducted to assess the effectiveness and safety of vaginal misoprostol in induction of labour in late IUFD.

Design: A prospective observational study.

Methods: In this prospective study, consecutive series of 80 women with IUFD >24 weeks of gestation are studied. Detailed clinical history, physical examination and investigation are reported. All selected cases were induced with vaginal misoprostol (dose according to gestational age) and dose are repeated every 4 hourly depending upon uterine contraction and Bishop's score changes

Results: The average induction-delivery interval was 16.09 hours and mean number of doses of misoprostol was 4.32 ± 0.65 . All women delivered within 24 hours of administration of first dose of misoprostol. There was significant correlation between mean induction-delivery interval and gravidity. Side-effects like fever, nausea and vomiting, pain, headache and diarrhoea were noted.

Conclusion: Low dose of vaginal misoprostol for induction of labour in IUFD is a safe, effective and cost-effective regimen.

Keywords: IUFD, Bishop's score, induction of labour, misoprostol, induction-delivery interval.

Introduction

In case of IUFD journey of labor pain is fruitless. This increases perceived stress among these mothers which may have both short- and long-term psychological complications.^{1,2} Hence, it is more important to search for methods which can reduce hours of pain in labor of IUFD cases.

The death of a formed fetus is one of the most emotionally devastating events for mother and clinicians. When a baby dies in utero the options are either to wait for labour to start spontaneously or to induce the labour. About 80% of women will deliver within 3 weeks of fetal death. But if fetal death occurs in utero without expulsion for several weeks then such retention of the fetus is associated with emotional distress and grief reaction which may be severe. If the rupture of fetal membranes occurs the risk of intrauterine infection increases and also there is a time related risk of consumption coagulopathy.³

A clinically accepted definition of IUFD is the death of fetus at or after 20 weeks of pregnancy⁴, but for

international comparison WHO has now recommended IUFD as a baby born with no sign of life at or after 28 weeks of gestation⁵.

A number of maternal, placental, and fetal conditions can result in fetal demise, but in about 25-35% of cases, the cause remains unknown.⁶

Oral misoprostol administration for labor induction with an IUFD was first described in Sao Paulo, Brazil in 1987.⁷

Common side effects of misoprostol are fever, nausea, vomiting, dizziness, diarrhoea and headache. The most serious side effect associated with the use of misoprostol is uterine hyperstimulation which can lead to uterine tachy-systole and uterine rupture.⁸

Material And Methods

In this prospective study, a consecutive series of 80 women with IUFD ≥ 24 weeks of gestational age during the period of May 2019 to November 2020 are studied. Study was conducted on patients who were admitted in Department of Obstetrics and Gynaecology, SMS Medical College, Jaipur. All women were counselled regarding induction and option available for induction. All cases were subjected to detailed history taking and clinical examination. IUFD was confirmed by USG. Written informed consent was taken after counselling of the women.

Inclusion criteria were as follows : women with IUFD between 24-40 weeks of the gestational age. Exclusion criteria were as follows : the women with Haemoglobin < 8 gm, coagulopathy or anticoagulant therapy, Inherited Porphyria, Glaucoma, Previous caesarean, Multiple pregnancy and in labour.

Between the 24-26 weeks of gestational age Tab Misoprostol 200 μg pervaginally and between 27-28 weeks 100 μg misoprostol given and after the 28 weeks of gestational age Tab. misoprostol 25 μg given

vaginally and repeated 4 hourly till maximum 5 doses of misoprostol.

The blood pressure, temperature and pulse rate monitored every 4 hourly. The case were closely monitored for the onset of contraction, bleeding, cervical dilatation and side-effects.

The induction-delivery interval was defined as the interval between the time of first dose of misoprostol administration to the time when fetus delivered. Complications like retention of placenta, PPH and placental abruption were noted.

If delivery does not occur after this regimen, then based on clinical situation appropriate method was used for termination of pregnancy. Any complication during the period of induction and till 24 hours after delivery were noted.

The data like maternal age, gravidity, gestational age, induction-delivery interval and number of doses of misoprostol required and side-effects were analysed. Injection Anti-D was given to Rh negative women.

Results

In present study we studied 80 consecutive women with intrauterine fetal demise after 24 weeks of gestation who are induced with vaginal Misoprostol during the period of May 2019 to November 2020. The patient characteristics are as follows: -

Table 1: Characteristics of Study Group

Mean Maternal Age (in years)	25.59 \pm 4.70
Mean Period of Gestation (in weeks)	33.45 \pm 3.77
Mean Gravidity	1.98
Mean Bishop Score	3.1 \pm 1.13

The age of women in our study ranged from 18 years to 40 years. The mean age was 25.59 \pm 4.7 years. The average gestational age was 33.45 \pm 3.77 weeks ranging from 24 weeks to 40 weeks. Bishop score was

determined, before inducing with Misoprostol. In our study mean Bishop score was 3.1 ± 1.13 and the mean gravidity was 1.98.

Table 2: Study of Efficacy of Misoprostol

Number of Doses of Misoprostol Required	4.32 ± 0.65
Mean Induction-Delivery Interval (in hours)	16.09 ± 2.99

The mean number of doses of Misoprostol required in our study was 4.32 ± 0.65 . There is no statistically significant difference in number of doses of Misoprostol required and gestational age. There is less number of doses was required in multigravida as compared to primigravida.

The mean induction-delivery interval in our study was 16.09 ± 2.99 hours. In our study the induction-delivery interval was shorter in multigravida as compared to primigravida. There is not significant correlation was found in induction-delivery interval and gestational age.

Table 3: Distribution of Cases According to Side-effects

Side-effects	No.	%
Nausea & Vomiting	43	53.75
Pain	37	46.25
Headache	20	25.00
Diarrhoea	18	22.50
Fever	13	16.25

The most common side-effect in our study was nausea and vomiting (53.75%) followed by pain (46.25%) and less common side-effect was headache (25.00%), diarrhoea (22.50%) and fever (16.25%).

Discussion

Different method were conducted in the past for induction of labour in late IUFC cases. Our study demonstrated that the optimal intravaginal dose of

misoprostol after 28 weeks is 25 µg taken every 4 to 6 hours per vaginum. In our study the mean dose of misoprostol required for termination of pregnancy was 4.32 ± 0.65 . Our results were comparable with the study conducted by Abbasi et al (2017)⁹ in which mean number of doses required are 3.41 ± 1.2 .

Another similar results were found in a study conducted by Gupta S et al (2016)¹⁰ in which mean number of doses of misoprostol was 4.2 ± 1.3 . There was less number of doses of misoprostol required in multigravida as compared to primi.

The mean induction-delivery interval in our study was 16.09 ± 2.99 hours. The induction-delivery interval was shorter in multigravida as compared to primigravida. Our results were comparable to study conducted by Lalfrinfela et al (2018)¹¹ in which mean induction-delivery interval was 17.1 ± 3.7 hours. A study was conducted by Sharma D et al (2016)¹² in which mean induction-delivery interval was 16.2 ± 6.2 hours.

Conclusion

Low dose of misoprostol is a safe, cost-effective method for induction of labour following IUFD after 24 weeks of gestation. The induction to delivery interval is shorter with lesser side-effects.

References

1. Gravensteen IK, Helgadottir LB, Jacobsen EM, Sandset PM, Ekeberg Ø. Long-term impact of intrauterine fetal death on quality of life and depression: A case-control study. BMC Pregnancy Childbirth 2012;12:43.
2. Satyanarayana VA, Lukose A, Srinivasan K. Maternal mental health in pregnancy and child behavior. Indian J Psychiatry 2011;53:351-61.
3. Pritchard JA. fetal death. Inutero Obstet Gynecol. 1959;14:573-80.

4. ACOG Practice bulletin No.102: Management of stillbirth. *Obstet gynecol.* 2009; 113:748-61.
5. WHO. Maternal, newborn, child and adolescent health. http://www.who.int/maternal_child_adolescent/epidemiology/stillbirth/en/ (accessed on June 15, 2016)
6. Dutta DC. Preterm labour, preterm rupture of the membranes, postmaturity, intrauterine death of fetus. In: Konar H, editor. *Text book of obstetrics including perinatology and contraception.* 6th ed., vol. 21. Calcutta: New Central Book Agency (P) Ltd.; 2004. p. 314e26.
7. Panda S, Jha V and Singh S. Role of Combination OF Mifepristone and Misoprostol Verses Misoprostol alone in Induction of Labour in Late Intrauterin Fetal Death: A Prospective Study. *J Family Reprod Health.* 2013 Dec; 7(4): 177–179.
8. Borgatta L, Kapp N. Clinical guidelines: Labour induction abortion in second trimester. *Contraception* 2011;84:4-18.
9. Abbasi S, Siddiqua S, Alam MN, Jesmin S, Siddiqui MM, & Rahman MT. Role of Combined Mifepristone and Misoprostol Verses Misoprostol Alone in Induction of Labour in Patients with Intrauterine Foetal Death - a Randomized Comparison Between their Outcome. *Anwer Khan Modern Medical College Journal.* 2017;8(1): 50-54. <https://doi.org/10.3329/akmmcj.v8i1.31658>
10. Gupta S, Kagathra B, Desai A. Mifepristone and misoprostol versus misoprostol alone in management of late intrauterine fetal death. *Int J Reprod Contracept Obstet Gynecol.* 2016 Sept;5(9):2935-2938.
11. Lalrinfela, Vanremmawii, Lalsangzuala C. Combination of Mifepristone and Misoprostol Compared with Misoprostol alone in the Termination of Pregnancy in Late Intra-Uterine Fetal Death. *Ann Int Med Den Res.* 2018;4(6):OG01-OG03.
12. Sharma D, Singhal SR, Poonam, Paul A, Kunika. Comparison of mifepristone combination with misoprostol and misoprostol alone in the management of intrauterine death: condensation - misoprostol and mifepristone combination is more effective than misoprostol alone in the management of intrauterine death. *Taiwan J Obstet Gynecol.* 2011 Sep;50(3):322-5. doi: 10.1016/j.tjog.2011.07.007.