INDUCTION OF LABOUR IN INTRAUTERINE FOETAL DEATH WITH INTRAVAGINAL MISOPROSTOL

V. Aruna Devi[1], P. Rajini[2]

[1]Assistant Professor, Department of Obstetrics & Gynaecology, Gandhi Medical College/Hospital.
[2]Assistant Professor, Department of Obstetrics & Gynaecology, Gandhi Medical College/Hospital.

ABSTRACT

OBJECTIVES

To optimize the dose of misoprostol in induction of labour in IUDs. To evaluate the effectiveness and safety of intravaginal misoprostol.

METHOD

The prospective study conducted at Gandhi Medical College/Hospital, Secunderabad, during Jan 2015 to Dec 2015; 500 patients with intrauterine foetal deaths between 18 to 40 weeks were taken for the study after conforming IUD with ultrasound.

INDUCTION PROTOCOL

After admission and selection for the study, 100 µg (Half tablet) misoprostol was introduced into the posterior vaginal fornix. If the patient was not in labour after 12 hours, the dose was repeated every 12 hours for up to 48 hours. During the period of induction, there were always obstetricians on duty to manage any complications or side effects if developed. No further medication nor artificial rupture of membranes was allowed during study.

RESULTS

Most of the patients studied were in the age group of 21 to 25 years, few between 26–30 years and very few in 31–35 years. Most of the patients were primigravidas and the Bishop score is <5.60% of the patients aborted/delivered within 12 hours of induction; 86% of the patients delivered within 18 hours of induction, 96% of the patients delivered within 24 hours of induction.

CONCLUSION

With the introduction of prostaglandins, the induction delivery interval is drastically reduced from other methods like Oxytocin infusion and extra-amniotic instillation of Ethacridine lactate. In this study, administration of relatively low dose of misoprostol 100 µg (12th hourly) intravaginally proved to be highly effective in induction of labour in intrauterine foetal deaths.

KEYWORDS

Induction of Labour, Intrauterine Foetal Death, Misoprostol.

HOW TO CITE THIS ARTICLE: Devi VA, Rajini P. Induction of labour in intrauterine foetal death with intravaginal misoprostol. J. Evolution Med. Dent. Sci. 2016;5(44):2746-2749, DOI: 10.14260/jemds/2016/641

INTRODUCTION

It is heart breaking for the mother and attending obstetrician when an Intrauterine Death occurs. Intrauterine Foetal Death is a common obstetric problem that can lead to serious maternal complications, if left to resolve spontaneously. The risk of complications such as psychological distress and DIC leads most obstetricians to induce labour as early as possible.[1] Induction of labour is more difficult in IUD than when the foetus is alive, partly because death usually occurs during second or early third trimester when the cervix is unripe. The danger of complications such as amniotic fluid embolism is also more.[1,2] Prostaglandins have radically altered the practice of induction of labour in obstetrics. It has found its wide applicability in every stage of pregnancy and child birth. Intravaginal, Intramuscular, Intravenous administration of prostaglandin derivatives such as prostaglandin E2 Gel, Sulprostone, Prostaglandin F2 α have been used for induction of labour with relative success, but requires special care of the patients during treatment to prevent complications.[1,2,3,4,5]

Financial or Other, Competing Interest: None.
Submission 04-03-2016, Peer Review 02-04-2016,
Acceptance 09-04-2016, Published 01-06-2016.
Corresponding Author:
Dr. V. Aruna Devi,
Flat No. 204, Priyanka Towers,
New Bhoiguda, Secunderabad-500003
E-mail: avinjamoori@yahoo.com
DOI: 10.14260/jemds/2016/641

Any drug, i.e. ideal for induction of labour should be inexpensive, stable at room temperature and easy to administer and that does not require direct supervision during the induction. Misoprostol, a synthetic analogue of PGE1 may be close to meet the above criteria. It has been administered orally in doses of 400 µg every 4 hours to induce labour in IUDs with high success and limited side effects. Misoprostol is widely used for the treatment of gastric ulcer in patients taking Non-steroidal Anti-inflammatory Drugs. It has been shown to be a useful agent for termination of pregnancy in the 1st, 2nd and 3rd trimester of pregnancy. This study describes the ability and safety of intravaginal misoprostol in induction of labour in intrauterine foetal death.[1,2,3,4,5,6]

AIM AND OBJECTIVE

To evaluate the effectiveness and safety of intravaginal misoprostol in induction of labour in intrauterine misoprostol. To optimize the dose of misoprostol.

Inclusion Criteria

1. Intrauterine Foetal Death confirmed by ultrasound between 18 to 40 weeks.
2. Without previous uterine scar (No H/O Caesarean section or hysterotomy or myomectomy).
3. Not in labour (No regular uterine contractions, unripe cervix).
4. Singleton pregnancy.

Induction Protocol

After admission and selection for the study, 100 µg (Half Tablet) misoprostol was introduced into the posterior vaginal fornix. If the patient was not in labour after 12 hours, the dose was repeated every 12 hours for up to 48 hours. During the period of induction, there were always obstetricians on duty to manage any complications or side effects if developed. No further medication nor artificial rupture of membranes was allowed during study.

MATERIAL AND METHODS

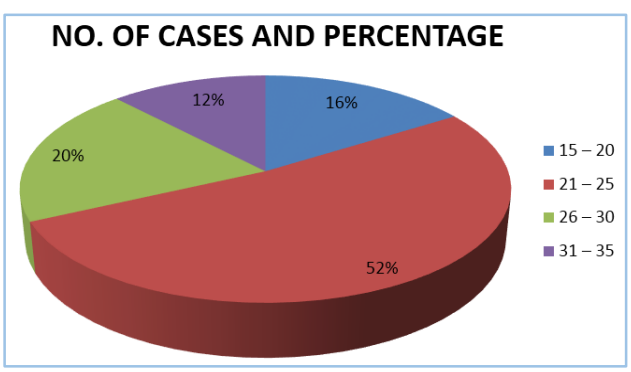
The prospective study conducted at Gandhi Medical College/Hospital, Secunderabad, during 2014 to 2015. Patients with Intrauterine foetal deaths between 18 to 40 weeks were taken for the study after conforming IUD with ultrasound.

Oral Administration	Vaginal Administration
Peak plasma concentration up to 12.5–60 minutes	Reacted maximum between 60–120 minutes
It rises rapidly and fall steeply by 120 minutes and remain low for the duration of the study	Declines slowly to average of 61% of peak value of 240 minutes after administration

Bio availability of vaginally administered misoprostol is 3 times higher than the oral dose.

RESULTS

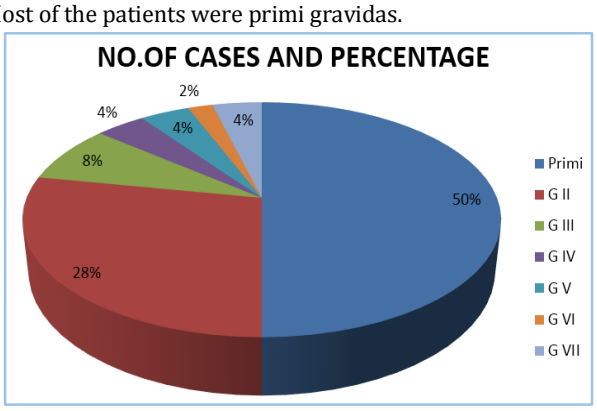
Age Group	No. of Cases and Percentage
15 – 20	80 (16%)
21 – 25	260 (52%)
26 – 30	100 (20%)
31 – 35	60 (12%)
Table 1: Age Distribution	



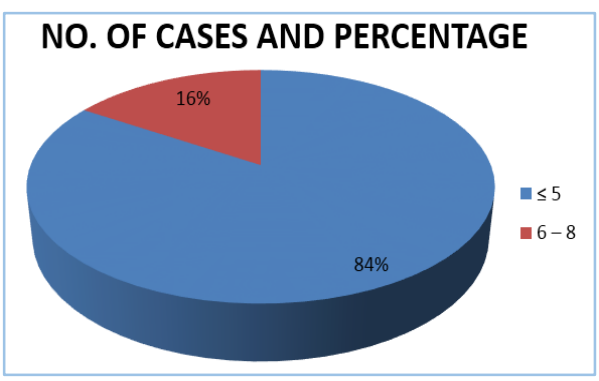
Most of the patients studied were in the age group of 21 to 25 years.

Parity	No. of Cases and Percentage
Primi	250 (50%)
G II	140 (28%)
G III	40 (8%)
G IV	20 (4%)
G V	20 (4%)
G VI	10 (2%)
G VII	20 (4%)
Table 2: Gravidity and Parity Distribution	

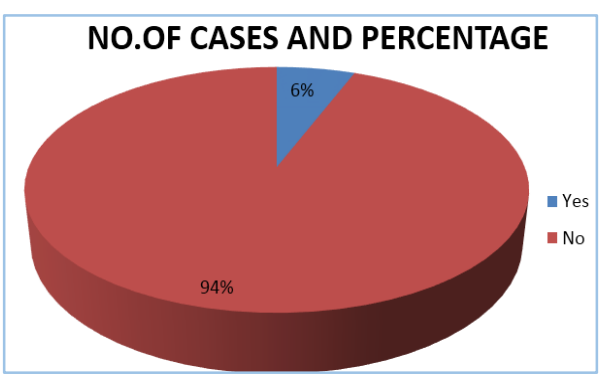
Most of the patients were primi gravidas.



Bishop Score	No. of Cases and Percentage
≤ 5	420 (84%)
6-8	80 (16%)
≥ 9	Nil
Table 3: Bishop Score	

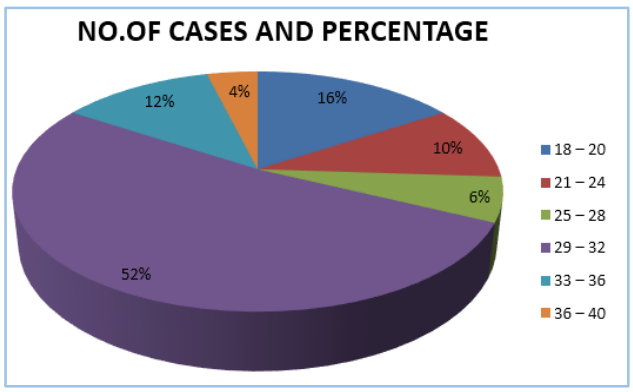


PROM	No. of Cases and Percentage
Yes	30 (6%)
No	470 (94%)
Table 4: Premature Rupture of Membranes	



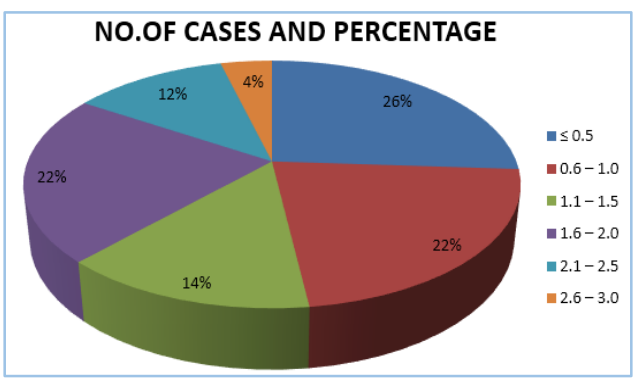
Gestational Age (Weeks)	No. of Cases and Percentage
18 – 20	80 (16%)
21 – 24	50 (10%)
25 – 28	30 (6%)
29 – 32	260 (52%)
33 – 36	60 (12%)
36 – 40	20 (4%)
Table 5: Gestational Age Distribution	

Most of the foetuses are 29–32 weeks of gestational age.



Fetal Weight in Kgs.	No. of Cases and Percentage
≤ 0.5	130 (26%)
0.6 – 1.0	110 (22%)
1.1 – 1.5	70 (14%)
1.6 – 2.0	110 (22%)
2.1 – 2.5	60 (12%)
2.6 – 3.0	20 (4%)

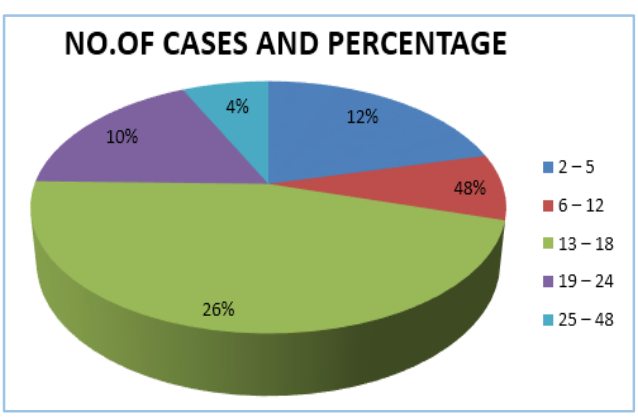
Table 6: Fetal Weight Distribution



I.D. Interval (Hours)	No. of Cases and Percentage
2 – 5	60 (12%)
6 – 12	24 (48%)
13 – 18	130 (26%)
19 – 24	50 (10%)
25 – 48	20 (4%)

Table 7: Induction Delivery Interval Distribution

60% of the patients aborted/delivered within 12 hours of induction; 86% of the patients delivered within 18 hours of induction, 96% of the patients delivered within 24 hours of induction.



DISCUSSION

Induction of labour is often the most appropriate procedure following the unfortunate occurrence of Intrauterine Foetal Death. However, induction of labour in the presence of a dead foetus differs from a term gestation with live foetus in a number of ways. Firstly, uterine sensitivity to oxytocic agents appear to be less. Secondly, the cervix is often unfavourable. Certain methods of induction like amniotomy are not suitable because of possible risk of sepsis. With the introduction of prostaglandins, the induction delivery interval is drastically reduced from other methods like Oxytocin infusion and extra-amniotic instillation of Ethacridine lactate. In this study, administration of relatively low dose of misoprostol 100 µg (12th hourly) intravaginally proved to be highly effective in induction of labour in intrauterine foetal deaths. Antonio Bugalho, Cassimobique, Fernand Machungo et al conducted a study of induction of labour with intravaginal Misoprostol in intrauterine foetal death, 72 patients with 18-40 weeks of gestational age.

	Bishop Score	Mean I.D. Interval
Antonio Bugalho et al	≤ 5	12.6
Present study	≤ 5	10.35
Antonio Bugalho et al	≥ 5	7.6 hours
Present Study	≥ 5	6.1 hours

SUMMARY AND CONCLUSION

In this study, 500 cases of Intrauterine Foetal Death (Confirmed by Ultrasound) between 18–40 weeks of gestational age without uterine scar were induced with relatively low dose of misoprostol 100 µgms intravaginally every 12 hours until effective uterine contractions and cervical dilatation were obtained for up to 48 hours. The mean time from induction to delivery was 6 hours and only 4% delivered between 24 to 48 hours. At the end of 48 hours, all patients had been delivered with the Bishop score <5. The mean induction delivery interval is 10.35 hours and with Bishop score >5; the mean induction delivery interval is 6.1 hours. No surgical procedure was required before and after delivery. The delivery/abortions were complete.

No blood transfusions were required, the blood loss is minimal, the most important thing is there were no complications like fever, gastrointestinal side effects, diarrhoea, sweating and hypercontractility. There was no need for analgesics. To conclude the intravaginal misoprostol with the dose of 100 µgms every 2 hours is very safe, inexpensive and effective method of induction of labour in IUD than any other methods like PGE2, Mifepristone and ethacridine lactate.

LIMITATIONS OF THE STUDY

This study is limited to women who did not have uterine scars. The dosing regimen is empiric. The present dosing regimen is extrapolated from the previously published study advocating its optimum nature.

REFERENCES

1. Antonio Bugalho, Casimo Bique, Machungo F, et al. Induction of labour with intravaginal misoprostol in intrauterine fetal death. Am J Obstet Gynaecol 1994;171(2):538-41.

2. Antonio Bugalho, Bique C, Machungo F, et al. Vaginal misoprostol as an alternative to oxytocin for induction of labour in women with late fetal death. Acta Obstetriciaet Gynaecologica Scandinavica 1995;74(3):194-8.
3. Antonio Bugalho, Bique C. Gynaecologic & obstetric investigation. Karger Medical and Scientific Publishers, Connecting the world of Biomedical Science 1995;39(4):252-6.
4. Blanchette HA, Nayak S, Erasmus S, et al. Comparison of the safety and efficacy of intravaginal misoprostol (prostaglandin E1) with those of dinoprostone (prostaglandin E2) for cervical ripening and induction of labour in a community hospital. Am J Obstet Gynaecol 1999;180(6Pt1):1551-9.
5. Easmin S, Nahaik, Jahan MK, et al. Intravaginal use of misoprostol for induction of labour in intrauterine death. Mymensing med J 2011;20(4):566-9.
6. Nvende L, Towobola OA, Mabina MH, et al. Comparison of vaginal and oral misoprostol for the induction of labour in women with intrauterine fetal death. East African Medical Journal 2004;81(4):179-82.