



**A COMPARATIVE STUDY OF INTRAVAGINAL MISOPROSTOL (PGE1)
AND INTRACERVICAL DINOPROSTONE (PGE2) FOR INDUCTION OF LABOUR IN
PROM AT OBSTETRICS AND GYNAECOLOGY DEPARTMENT OF DMCH,
LAHERIASARAI, BIHAR**

Gynaecology**Dr. Renu Jha***

M.B.B.S., M.D. (Obst. & Gynae.), Ph.D. Obst. & Gynae.), Associate Professor,
Department of Obstetrics & Gynaecology, Darbhanga Medical College & Hospital,
Laheriasarai, Bihar *Corresponding Author

Dr. Debarshi Jana

PhD, Young Scientist (DST), Department of Gynecology and Obstetrics, Institute of Post-
Graduate Medical Education and Research, A. J. C. Bose Road, Kolkata-700020, West
Bengal, India

ABSTRACT

A Comparative study of intravaginal misoprostol and intracervical Dinoprostone for induction of labour in Premature rupture of membranes at term. This is a prospective observational study. 100 pregnant women who were booked in this hospital were taken for study. Out of 100 patients, 50 patients received 25ug intravaginal misoprostol and 50 patients received intracervical dinoprostone gel for labour induction. The mean delivery interval was 11 hrs and 13 hrs in misoprostol and dinoprostone group and 12 hrs and 17 hrs among assisted vaginal delivery. 61% in misoprostol group and 56% in dinoprostone group required 2 doses for vaginal delivery. 75% of misoprostol group and 60% of dinoprostone group had normal delivery, 11% and 16.5% of respective group had assisted vaginal delivery, 15% and 22.5% had caesarean delivery respectively. Indication for caesarean delivery was failed induction and fetal distress.

KEYWORDS

Intravaginal Misoprostol Intracervical Dinoprostone Premature rupture of membranes Labour induction Normal delivery Caesarean delivery

INTRODUCTION

Premature rupture of membranes (PROM) is spontaneous rupture of membranes prior to onset of labour. It can occur at term i.e., after 37 completed weeks or preterm (PPROM). Incidence of PROM is 5-10% and 60% occur at term. Spontaneous labour follows term PROM at 24, 48 and 96 hrs in 70%, 85% and 95% of women respectively. Studies have shown an increased risk of maternal and perinatal morbidity and mortality when time interval from rupture of membranes until delivery was prolonged. This is the main reason for labour induction.

Karim introduced the use of prostaglandins (PG's) to induce labour. PGE2 and PGE2V have been commonly used for induction of labour, but they are expensive and have some limitations. Dinoprostone is being used intracervically which is an inconvenient method for induction. Recently an alternative prostaglandin PGE1 analogue misoprostol has been used for cervical ripening and to induce labour. Misoprostol, a synthetic PGE1 analogue, was commercialized in 1987 for anti-ulcer, antisecretory and cytoprotective effects. Misoprostol was also effective as cervical priming agent. It is now being tried orally, intravaginally and intracervically for induction of labour. The present study was undertaken to assess the efficacy and safety of intravaginal misoprostol as compared to intracervical dinoprostone for induction and progress of labour.

MATERIAL AND METHODS

This study is a comparative study done in the Department of Obstetrics and Gynaecology in Darbhanga Medical College & Hospital, Laheriasarai, Bihar over a period of 1 year. About 100 term gestation women who came with premature rupture of membranes (PROM) were taken into the study. Details of the each women, labour induction, number of doses, mean delivery interval, mode of delivery and indication for caesarean delivery were assessed at the end of each delivery.

RESULTS

In this study, out of 100 women with PROM, 50 women were given intravaginal misoprostol and 50 were given intracervical dinoprostone for labour induction. Mean age of patients belongs to 21-27 yrs (53%), Parity distribution about 61(61%) were primi and 29 (29%) were multiparous. The mean delivery interval was 11 hrs and 13 hrs in misoprostol and dinoprostone group and 12 hrs and 17 hrs among assisted vaginal delivery. 61% in misoprostol group and 56% in dinoprostone group required 2 doses for vaginal delivery. 75% of misoprostol group and 60% of dinoprostone group had normal delivery, 11% and 16.5% of respective group had assisted vaginal delivery, 15% and 22.5% had caesarean delivery respectively. Indication for caesarean delivery was failed induction and fetal distress.

DISCUSSION

To attain a safe delivery in carefully recruited cases of PROM by

opting for active management of labour with labour induction either by intravaginal misoprostol 25 ug every 4-6 hrs or intracervical dinoprostone 0.5 mg every 6 hrs interval. The patients were standardized and compared regarding labour induction, number of doses, mean delivery interval, mode of delivery and indication for caesarean delivery were assessed at the end of each delivery. In this study mean age of patients belongs to 21-27 yrs (53%). The difference in age group was not significant ($p > 0.799$). In this study parity distribution about 61(61%) were primi and 29(29%) were multiparous. Period of gestation between 37-39 weeks were 47(47%) and 40-42 weeks were 53(53%).

In this study, mean delivery interval was 11 hrs and 13 hrs in misoprostol and dinoprostone group and 12 hrs and 17 hrs among assisted vaginal delivery. In the study done by Kulshreshtha et al induction delivery interval was shorter in misoprostol group 10.93 hrs as compared to 12.54 $\pm$ 7 hrs in dinoprostone. In the study by Nanda et al mean delivery interval was 5 hrs shorter in misoprostol group 13.3 vs 18.53 hrs with p value 0.011. In this study, 61% in misoprostol group and 56% in dinoprostone group required 2 doses for vaginal delivery. Total number of doses required for vaginal delivery did not differ much between two groups. It correlates with the study done by Manjunath et al which says no difference in number of doses between the groups. In this study, Mode of delivery – 75% of misoprostol group and 60% of dinoprostone group had normal delivery, 11% and 16.5% of respective group had assisted vaginal delivery, 15% and 22.5% had caesarean delivery respectively. These results are similar to previous studies done by Nagpal et al. the study done by Girija et al also reported the same, no difference was noted in normal delivery, instrumental delivery and caesarean delivery. In this study, indication for caesarean delivery was failed induction and fetal distress. These results are similar to study done by Manjunath et al.

CONCLUSION

PROM should be diagnosed at the earliest. Patients' history alone has a sensitivity of 90% for diagnosis of PROM. (Gold et al 1989) PROM can result either from inherited weakness of collagen or an acquired degradation of collagen. Studies have shown an increased risk of maternal and perinatal morbidity and mortality when time interval from rupture of membranes until delivery was prolonged. The induction delivery interval in intravaginal misoprostol group was significantly lower in assisted vaginal delivery. But not much difference was found in women who delivered normally. Analysis of data obtained in our study shows that misoprostol and dinoprostone appear to have similar efficacy in PROM. The additional benefits of misoprostol are its stability at room temperature and its low cost when compared to dinoprostone. Although misoprostol is not approved by FDA for labour induction, WHO committee has included it in list of essential drugs and recommends its use for labour induction. So

misoprostol appears equally safe and effective in labour induction compared to dinoprostone.

REFERENCES

- [1]. Jairam VK, Sudha S. A study of premature rupture of membranes C Management and Outcome. *Journal of Obst and Gynec of India*. 2001;51(2):58-60.
- [2]. Duff P. Premature rupture of the membranes at term. *N Engl J Med*. 1996;334(16):1053-1054.
- [3]. Ladfors L, Mattsson LA, Eriksson M, Fall O. A randomised trial of two expectant managements of prelabour rupture of the membranes at 34 to 42 weeks. *Br J Obstet Gynaecol*. 1996;103(8):755-762.
- [4]. Karim SMM. Effect of oral administration of PGE2, PGF2 alfa on human uterus. *J ObstGynae* 1971; 78; 289.
- [5]. Calder AA, Embrey MP, Hiller K. Extra-amniotic PGE2 for induction at term. *Brit J Obst&Gynae* 1974; 8: 39-46.
- [6]. Fletcher HM, Mitchell S, Simeon FJ. Intravaginal misoprostol as a cervical ripening agent. *Brit J Obst&Gynae* 1993; 100: 641-644.