

USE OF DINOPROSTONE FOR INDUCTION OF LABOUR

MEHTA ● SEEMA ● GEHILOT ● MRIDUL

SUMMARY

Prostaglandins are now extensively used for induction of labour. Dinoprostone (PGE₂) not only helps in cervical ripening but also sensitises the uterine musculature to physiological PGE₂ for generation and maintaining uterine contractility.

A study of 88 cases for induction of labour was done. Dinoprostone gel 0.5 mg (cerviprime) was applied endocervically in 88 cases with poor Bishop scores. Induction delivery interval was markedly shortened. No major or minor adverse effects were observed. All patients delivered vaginally with good foetal outcome.

INTRODUCTION

Cervical ripening is prerequisite for successful labour-spontaneous or induced. The role of prostaglandins in cervical ripening and labour induction is well known. The gynaecological route of administration i.e. intravaginal and endocervical, offers an average of lower dose, easy application, minimal discomfort to patient, short medication delivery interval and few side effects. PGE₂

mediated cervical ripening can be explained by changes in GAG (glycosaminoglycans) content which will disperse and destabilise the collagen fibrils and increase in tissue compliance.

MATERIAL AND METHOD

88 cases with obstetric indication for induction of labour were enrolled for the study. All cases were admitted in gestational maturity, with cervical Bishop score of 3 or less and gravida upto 4.

Cases with previous uterine surgery, presentation other than vertex, suspected

foetal compromise, history of vaginal bleeding, history of chronic medical illness and maternal age above 30 years were excluded from the study.

Each patient was admitted to labour room and after complete examination and evaluation of Bishop score, Dinoprostone 0.5 mg in prefilled sterile, ready to use syringe (cerviprime) was administered endocervically. Twice application at 3-4 hours interval was done in cases with PROM because of the chances of drug getting washed away with the draining liquor. Small amount of gel was also applied locally on the cervix. Uterine

activity, foetal status, cervical dilatation and effacement were carefully monitored to detect hypertonus myometrial contractions or foetal distress.

OBSERVATIONS

Table I shows the case distribution according to age and parity. There were 49 primis, 23 second gravidas and 16 were third/fourth gravidas.

Indications for induction in primis and multis along with the results of induction are shown in tables II and III respectively.

It was observed that the Bishop score

Table I
Distribution of cases according to age and Parity

Age / Parity	17 - 20 Years	21 - 24 Years	25 - 30 Years	Total
Primi	26	16	7	49
Second	5	8	10	23
Multi	-	2	14	16

Table II
Indications for induction with PGE₂ in Primis and its results

Indication	Number of cases	Bishop cervical score	Augmentation	Induction delivery interval	Mode of delivery	Foetal APGAR score at 5 min
Post maturity	10	0 - 2	—	14-16 hrs.	Normal	10
PROM	32	1 - 2	—	6-10 hrs.	Normal	10
PIH	3	2	ARM	6-8 hrs.	Normal	9
Anencephaly	3	2	ARM	6-7 hrs.	Normal	0
IUD	1	2	—	9 hrs.	Normal	0

Table III

Indications for induction with PGE₂ in Multis and its results

Indication	Number of cases	Bishop cervical score	Augmentation	Induction delivery interval	Mode of delivery	Foetal APGAR score
Post maturity	4	1 - 2	—	10-14 hrs.	Normal	10
PROM	30	2 - 3	—	4-6 hrs.	Normal	10
PIH	1	3	ARM	6 hrs.	Forceps delivery	8
IUD	2	3	ARM	7 hrs.	Normal	0
Accidental haemorrhage	2	1 - 2	ARM	5-6 hrs.	Normal	5-6

was less than 3 when the endocervical application of gel was done. Twice application of gel was done in cases with PROM. Augmentation of labour was done by amniotomy in cases with PIH, congenital anomaly, IUD and cases with accidental haemorrhage. Oxytocin drip was not required in any case. Induction delivery interval was markedly shortened in all cases. This interval was further reduced in cases where amniotomy was performed and in cases of premature rupture of membrane where application was done twice.

All cases delivered vaginally, cesarean section was not required in any case. In one case of PIH, forceps were applied because of foetal distress.

Foetal outcome in almost all cases was favourable. In cases with PIH, foetal APGAR was 8-9 and in accidental haemorrhage APGAR was 5-6 at 5 minutes interval.

DISCUSSION

PGE₂ has a dual action of ripening the uterine cervix and promoting uterine contractile activity (Forman 1982). PGE₂ gel was more effective as compared to oxytocin for ripening of cervix and induction of labour (Wilson 1978).

The present study has demonstrated that endocervical application of PGE₂ brings about favourable changes in cervix and initiates labour smoothly as was also observed by Ekman et al in 1983.

There were minimal to no side effects and induction was achieved with minimal discomfort to the patient. Uterine hypertonus was not observed in any case probably because of the use of very low dose of PGE₂. There was no case of failed induction and caesarean section was not required in any case. The frequency of cesarean section can thus be reduced by the use of PGE₂ as is also shown by Bhide et al. 1993, Calder et al 1977,

Baveja et al 1988. The results of induction with PGE₂ were equally favourable both in primis as well as in multigravidas. Foetal outcome was favourable in all cases.

To conclude, intracervical application of PGE₂ is the most effective means of achieving cervical ripening and inducing labour.

REFERNECES

1. Baveja R., Bhattacharjee S.K., Coyaji K.J., Das S.K., Engineer A.D., Gogoi M.P., Hazara

M.N., Kodkany B.S., Kochhar M., Krishna U., Misra P., Pallaniappan B., Srinivasan C., Kambo I., Gupta S., Kumar S., Saxena N.C. and Saxena B.N. : *J. of Obstet. & Gynec. of Ind.* : 38;289;1988.

2. Bhide A., Daftary S.N. : *J. of Obstet. & Gynec. of Ind.* : 43;729;1993.
3. Calder A.A., Embrey M.P., Tait T. : *Brit. J. Obstet. Gynec.* : 84;264;1977.
4. Ekman G., Forman A., Marnal K.E., Ulmsten U. : *Am. J. Obstet. Gynec.* : 147;657;1983.
5. Forman A., Ulmsten U., Banyai J. : *Am. J. Obstet. Gynec.* : 143;756;1982.
6. Wilson P.D. : *Brit. J. Obstet. Gynec.* : 85;941;1978.