

## USE OF ENDOCERVICAL PGE<sub>2</sub> (DINOPROSTONE) GEL FOR INDUCTION OF LABOUR

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### SUMMARY

prostaglandins are now extensively used for ripening of cervix and induction of labour. PGE<sub>2</sub>-dinoprostone gel (cerviprime) not only helps in cervical ripening but also sensitises the uterine musculature to physiological PGE<sub>2</sub> for generation and maintainance of uterine contractions.

A study of 100 cases of induction of labour was done at L.T.M.G. Hospital, Sion, Mumbai-400 022. PGE<sub>2</sub> gel 0.5 mg (cerviprime) was applied endocervically in patients with poor Bishop score. Induction delivery interval was markedly shortened. 88 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 advantage of lower dose, easy application, minimal discomfort to the patient, short

medication delivery interval and few side effects. PGE<sub>2</sub> medicated cervical ripening can be explained by changes in GAG (Glycosaminoglycans) content which will disperse and destabilise the collagen fibrils and increase tissue compliance.

### MATERIAL AND METHODS

A prospective study of 100 patients requiring induction of labour using endocervical PGE<sub>2</sub> gel was carried out at L.T.M.G. Hospital, Sion, Mumbai. Patient with varied indication and varied period

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of gestation (POG) were taken into the study. The inclusion criteria were the need for induction, of labour in patients with Bishop score less than 3 and POG more than 30 weeks. Cases with previous uterine surgery, malpresentation, suspected foetal compromise, medical disorders and maternal age more than 35 years were excluded from the study.

Each patient was admitted to the labour room and after complete examination and evaluation of the Bishop score, PGE<sub>2</sub> gel (0.5 mg.) in prefilled sterile ready to use syringe (cerviprime) was administered

endocervically. Repeat instillation of cerviprime was done in patients without any improvement in Bishop score after 6 hours. In patients with improvement in Bishop score, but ineffective uterine contractions, oxytocin augmentation with artificial aminotomy was undertaken. Uterine activity and progress of labour was monitored along with maternal and foetal condition.

#### OBSERVATIONS AND RESULTS

Majority of these patients were between 20-30 years of age. There were 59 primigravidae and 41 multigravidae (Table I).

**Table I**  
**AGE & PARITY**

Age in years	Primis	Multis
< 20	9	7
20 - 24	28	20
25 - 30	18	12
> 30	4	2
Total	59	41

**Table II**  
**INDICATIONS FOR INDUCTION**

Indications	Primis	Multis	Total
PIH	30	21	51
Postdatism	17	7	24
IUGR	5	3	8
IUFD	4	4	8
Congenital anomalies	3	2	5
BOH	-	4	4

Indications for induction of labour are most common indication both in primis and multitis. summarised in Table II. PIH was and multitis.

**Table III**  
**RESULTS IN PRIMIS**

Indication	No. of cases	Repeat instillation	Oxytocin augmentation	I.D. Inter*-val	LSCS
PIH	30	6	13	11-12 hrs.	5
Postdatism	17	3	6	7-9 hrs.	2
IUGR	5	1	2	8-10 hrs.	2
IUFD	4	-	3	10-12 hrs.	-
Congenital anomalies	3	1	2	10-12 hrs.	-
BOH	-	-	-	-	-
<b>Total</b>	<b>59</b>	<b>11</b>	<b>26</b>	<b>11.4 hrs.</b> <b>(Average)</b>	<b>9</b>

\* Instillation Delivery Interval.

**Table IV**  
**RESULTS IN MULTIS**

Indication	No. of cases	Repeat instillation	Oxytocin augmentation	I.D. inter*-val	LSCS
PIH	21	1	5	8-10 hrs.	1
Postdatism	7	1	2	6-8 hrs.	-
IUGR	3	2	1	5-8 hrs.	1
IUFD	4	1	2	5-8 hrs.	-
Congenital anomalies	2	-	2	8-11 hrs.	-
BOH	4	-	1	7-10 hrs.	1
<b>Total</b>	<b>41</b>	<b>5</b>	<b>13</b>	<b>7.6 hrs.</b> <b>(Average)</b>	<b>3</b>

\* Instillation Delivery Interval.



**Table V**  
**PERIOD OF GESTATION AND INSTILLATION DELIVERY INTERVAL**

POG in weeks	No. of patients	Average I.D. interval
30 - 33	17	15.6 hrs.
34 - 36	39	10.4 hrs.
37 - 40	20	8.2 hrs.
> 40	24	9.6 hrs.

Results of inductions in primis and mults are shown in Tables III and IV. Average induction delivery interval was 11.4 hours in primis and 7.6 hours in mults. In total 39 patients, oxytocin augmentation was required. 88 patients delivered vaginally, while 12 patients required a caesarean section. Out of the 88 patients delivered vaginally, in 8 patients, forceps was applied, while vacuum application was done in 3 patients. Indications for caesarean section were foetal distress (5) and failure to progress (7). It includes one patient of failed induction where there was hardly any change in the Bishop score after repeat instillation of cerviprime. Induction delivery interval was lowest in the patients with 37-40 weeks period of gestation and was more in patients with less than 33 weeks period of gestation (Table V).

The foetal outcome was good in most of the patients. There were 2 neonatal deaths both due to prematurity, while APGAR less than 5 at 1 minute was found in 7 babies.

#### DISCUSSION

PGE<sub>2</sub> has a dual action of ripening of

cervix and promoting uterine contractile activity (Forman, 1982). PGE<sub>2</sub> gel was more effective as compared to only oxytocin for induction of labour in patients with poor Bishop score (Wilson, 1978).

The present study had demonstrated that endocervical application of PGE<sub>2</sub> gel brings about favourable changes in cervix and initiates labour smoothly thus decreasing the induction delivery interval. This is particularly helpful in patients with poor Bishop score, as only oxytocin does not work in these patients. A comparative study in such patients showed high caesarean section rate (37.7%) and longer induction delivery interval (10.4 hours) in patients where only oxytocin was used for induction, as compared to 8.7% LSCS rate and 7.4 hours induction delivery interval in patients where PGE<sub>2</sub> gel was used before (Sasikala A., 1994). Similar results are also reported by Calder et al (1977) and Bhide et al (1993).

The results of induction with PGE<sub>2</sub> were equally favourable in primigravidae as well as multigravidae. Foetal outcome was good in all cases, except 2 neonatal deaths. The induction delivery

interval is more in patients with POG less than 33 weeks, as oxytocin receptors and uterine sensitivity is less at that time.

To conclude, intracervical application of PGE2 dinoprostone gel is an effective means of achieving cervical ripening and inducing labour.

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