

## Study on Effect of PGE2 Gel for Induction of Labour

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### Original Research Article

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**Article History**

*Received: 22.04.2018*

*Accepted: 08.05.2018*

*Published: 30.05.2018*

**DOI:**

10.21276/sjams.2018.6.5.16



**Abstract:** The aim of this study to the effect of intra cervical PGE2 gel for induction of labour. 177AN patients induced with PGE2 gel over a period of one month, July 2017 at Government Rajaji Hospital, Madurai were studied. Among 177 patients, 142 cases (80%) delivered vaginally and 35 cases delivered by LSCS. Commonest indication for induction being premature ruptures of membrane and postdatism. 173 cases required single application of PGE2 gel. 75 cases (42%) delivered within 12 hours of induction. Only one case needed induction with 3 gel in our study. PGE2 gel is effective in inducing labour. Complications and side effects were minimal with intra cervical PGE2 gel. Caeserean rates following PGE2 gel induction is low (20%).

**Keywords:** Induction, labour, cerviprime gel.

### INTRODUCTION

Induction of labor implies stimulation of contraction before the spontaneous onset of labor. Commonest indications include PROM, postdated pregnancy, Gestational hypertension. Among pharmacological agents used for induction of labor prostaglandin E 2 gel had shortened induction delivery interval with oxytocin infusion than oxytocin alone. Among 177 pregnant women we studied the effect of intra cervical PGE2 gel for induction 80 percent delivered vaginally supporting the Cochrane review of 63 trials& 10441 women given vaginal prostaglandin reported higher Vaginal delivery within 24 hrs

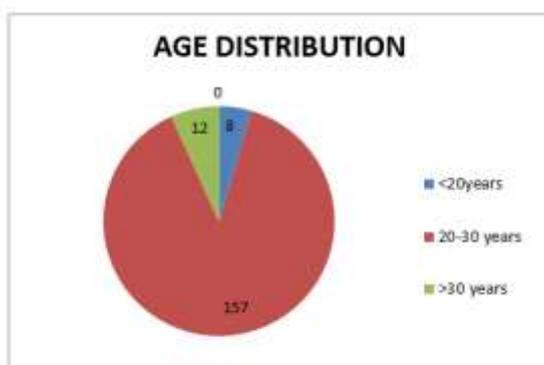
### METHODOLOGY

177 patients induced with PGE2 gel over a period of one month, July 2017 at Government Rajaji Hospital, Madurai were studied.

The following table shows age wise distribution of patients. Higher number of induction was done among the age group 20-30years.

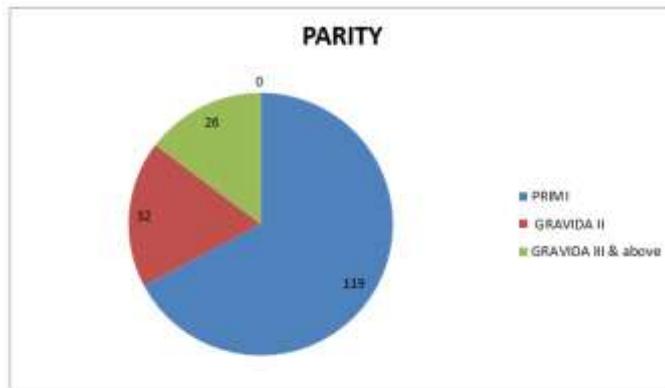
**Table-I: Age Distribution**

AGE	NUMBER	PERCENTAGE
<20	8	4.51%
20-30	157	88.7%
>30	12	6.77%



**Table-II:** The following table shows induction among the various parity Induction rates were higher among primi gravida

OBSTETRIC CODE	Number	Percentage
PRIMI	119	67.23%
GRAVIDA II	32	18%
GRAVIDA III & above	26	14.68%

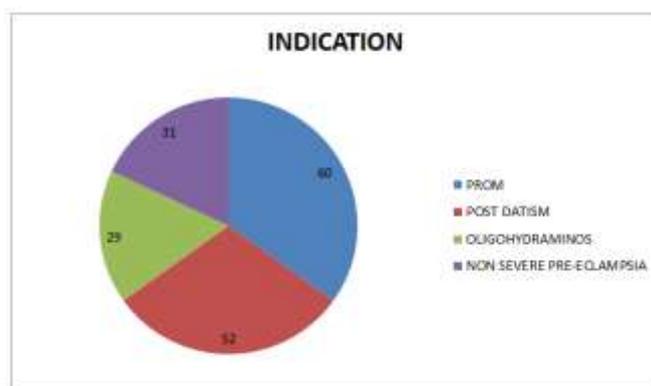


**Table iii- Indication of PGE2 induction**

The following table shows the indication of cerviprime gel induction. Most common indication

being premature rupture of membrane (34%) followed by post datism(29%).

INDICATION	NUMBER	PERCENTAGE
PROM	60	34%
POST DATISM	52	29%
OLIGOHYDRAMINOS	29	16%
NON SEVERE PRE-ECLAMPSIA	31	18%
FGR	1	0.5%
IMMINENT ECLAMPSIA	4	2.5%



**Table-IV: Bishop Score**

BISHOP SCORE	NUMBER	%
1	1	0.56%
2	71	40.11%
3	102	57.62%
4	3	1.69%

Induction was done in patients with unfavourable cervix. In the present study, 102 patients had a bishop of 3 during induction (Table-IV).

Only one patient (0.56%) required 3 gels for induction. In 173 patients, decision was made with single gel (97.74%) (Table-V).

**Table-V: Number of gel**

NUMBER OF GEL REQUIRED		%
1	173	97.74%
2	3	1.69%
3	1	0.56%

**Table-VI: Induction and delivery interval**

Time		%
<6 hours	30	16.94%
6-12 hours	75	42.37%
>12 hours	72	40.67%

75 cases (42.37%) delivered between 6-12 hours. 72 cases (40.67%) delivered after 12 hours  
 Number of vaginal deliveries – 142  
 Number of cesarean – 35

**Table-VII: Mode of Delivery**

Labour Natural	123	69.49%
Vaccum assisted	8	4.51%
Outlet forceps	11	6.21%
	142	80.2%

Among 177 cases 142 cases (80.2%) delivered vaginally.

**Table-VIII: Indication of lscs**

Fetal distress	22	12.42%
Failed induction	10	5.64%
Long period of infertility	3	1.69%
	35	

Indication for LSCS among 35 cases is  
 Fetal distress-22 cases (12.42%)  
 Failed induction-10 cases (5.64%)  
 Long period of infertility- 3 cases (1.69%)

**RESULTS**

88.7% belong to the age group 20-30yrs. Primi contribute about 119(67.23%) of cases. In this study induction was done for 60 cases of PROM (34%), 52 cases of postdatism (29%). 102 cases had a bishop score of 3. 173 cases (97.74%) required only one cerviprime gel application. In our study 75(42.37%) cases delivered within 6-12hours of cerviprime gel application. 142 cases had vaginal delivery, 35 cases underwent LSCS with fetal distress being the indication in 22 cases. There was no perinatal mortality or morbidity

**DISCUSSION**

PGE 2 (dinoprostone) is one of the most commonly used preparations for induction of labour. Preparations: a) Vaginal gel- Cerviprime, Prepidil b) removable tampon- Cervidil c) vaginal pessary- ProstinE2

**Mechanism of action**

Increase in elastase, glycosaminoglycan, dermatan sulfate, and hyaluronic acid levels in the cervix. Increases the activity of collagenase in the cervix. Increase in intracellular calcium levels-contraction of myometrial muscle -all the above leads to cervical ripening.

PGE2 gel is available in a 2.5 ml syringe for an intracervical application of 0.5 mg of dinoprostone. With the woman suoine, the tip of a pre-filled syringe is placed intracervically, and the gel is deposited just below the internal cervical os. Dose is repeated after 24hrs, with a maximum of three doses. Continuous uterine activity and FHR monitoring by CTG should be done after induction. Oxytocin should not be initiated until 6-12 hrs after the last dose because of the potential for uterine hyper stimulation. Vaginal insert containing 10mg of dinoprostone in a timed- release formulation. The vaginal insert administers the

medication at 0.3mg/hr and may be left in place for upto 12 hrs.

Advantage is insert can be removed with the onset of active labor, rupture of membranes, or with the development of uterine hyper stimulation but it had disadvantages such as uterine hyper stimulation, fetal distress, ceaserean section.

In Study by Mayameanon out of 105 cases induced with gel 39 received one dose, 40 received 2 doses and 26 received 3 doses in 24 hrs at 6 hrs interval and 3<sup>rd</sup> dose of PGE2 gel unnecessarily prolonged the duration of labour leading to increased emergency caesarean section and increased NICU admissions[1]. In patients who respond to single sustained release dinoprostone inserted intracervical placement decreases time to delivery without increasing c- section, infection, morbidity or other complications of labor Perry *et al.*[2]. Study by Smitapare concluded that intracervical double dose of PGE2 gel is significantly effective for preinduction as cervical ripening and 94% of patients went into labour spontaneously without requiring stimulation with oxytocin [3]. Onset of labour occurred in 63.8% of the women treated with gel; overall caesarean section rate was 27.2% was higher among those with an entirely low bishop score[4]. Among 52 patients studied by Mary George 32% delivered within 12hrs and 34% were in active phase of labour, 15% of patients cervical ripening has occurred [5]. Faizaroza studies showed that the indications were postdated pregnancy 50%, PIH 18%, DM 18%, and RH isoimmunisation 6% among 50 cases; the success rate in terms of vaginal delivery was 82% ,LSCS rate was 18%[6].

## CONCLUSION

Commonest indication for induction with cerviprime gel is PROM (34%) and postdatism (29%). 97.74% required single gel for induction. 40% delivered within 12hrs. 80.2% delivered vaginally. No perinatal mortality occurred in our study. So with careful monitoring PGE2 gel is effective in induction of labour.

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