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Comparative Study between two Regimens of Dinoprostone Gel Induction

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Abstract

Objectives: To reduce the primary caesarean section rate by rescheduling the cerviprime dosing intervals thereby achieving successful vaginal delivery. *Methods:* A prospective observational case control study was carried out on 70 women undergoing induction of labour between March 2016 to May 2016. In the study group of 50 subjects labour was induced by intracervical dinoprostone where the repeat doses were rescheduled at 0 hr - 24 hrs – 36 hrs, which compared with the control group, which was assigned the conventional induction schedule of 0 hr-6 hrs-12 hrs. In both the groups' maximum of 3 doses as needed were used. The effectiveness was compared on the basis of rate of successful vaginal deliveries. *Results:* Successful vaginal delivery was 80% in study group and 40% in conventional control group. p value is 0.005. The difference was statistically significant. *Conclusion:* By prolonging the interval between the repeat dinoprostone gel inductions, improves the success of vaginal deliveries thereby bringing down the incidence of primary caesarean section.

Keywords: Induction of labour; vaginal delivery; Caesarean section.

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Introduction

In the last 5 years, there has been a significant increase in caesarean sections. Induction with poor bishop score led to failed inductions which was one of the reasons for increase in primary Caesarean rates. Though caesarean section has become much safer over the years, it cannot replace vaginal delivery in terms of low maternal and neonatal morbidity. Primary caesarean section has a major contribution in determining the future obstetric course in women.

Hence to improve the success of induction – a study was conducted by increasing the dosing intervals between the repeat dose of intracervical dinoprostone gel as 0 hr-24 hrs-12 hrs, compared with the conventional 0 hr-6 hrs-12 hrs which served as control. Successful vaginal delivery was taken as the primary outcome for success of induction.

Aims and Objectives

To compare the effective regimen for induction of labour by dinoprostone gel with respect to induction delivery interval

and rate of successful vaginal delivery thereby reducing the primary caesarean section rate.

Materials and methods

Source of data: 70 patients admitted to labour ward of O & G department of GRH, Madurai Medical College with an indication for induction of labour from March 2016 to May 2016. Govt. Rajaji Hospital is the biggest referral centre in South Tamilnadu handling referral cases of 750 per month. Of which 90% are high risk cases. The average deliveries are around 1100-1200/month of which 50% are delivered by caesarean section. With an idea of reducing primary section rate this study was conducted by rescheduling the dinoprostone gel doses.

Inclusion criteria

- Singleton fetus in cephalic presentation
- Over 37 week's gestation
- Reactive fetal heart pattern
- Unfavourable cervix bishop score < 4
- No contraindication to vaginal delivery

Exclusion criteria

- Previous caesarean or any uterine surgery
- Malpresentation
- Grand multiparity
- Abnormal fetal heart pattern
- Allergy to prostaglandins

Method of Induction

50 patients with indication for labour induction received 0.5 mg of intracervical dinoprostone gel and repeated an interval of 0 hr-24 hrs-36 hours in the study group. In the conventional control group to receive 3 doses of dinoprostone at 0-6-12 hrs, 50 patients was set in the beginning of study. But even as the study was in process the caesarean section rate reached more than 50% with 20 patients. So no further patients were enrolled in this group. After informed consent has been obtained, the patients selected for the study were evaluated initially by Bishop's score and admission test for fetal well being. Patients with bishop < 4 and a positive admission test were induced.

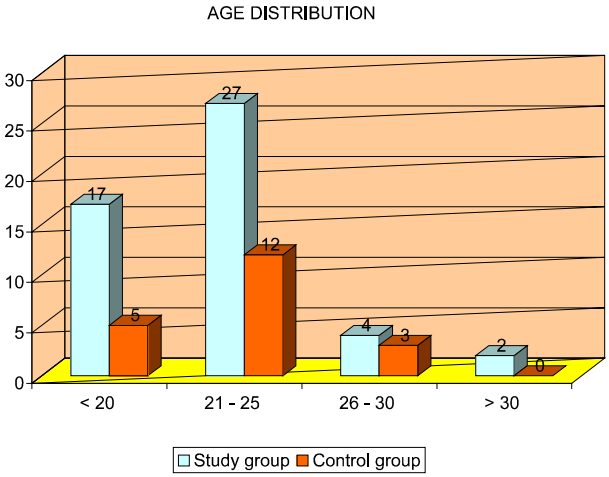
Maternal vital signs, fetal heart rate and progress of labour were monitored after gel insertion. A partogram was strictly maintained.

Artificial rupture of membrane done in a completely effaced cervix at more than 3 cm dilatation. Data collected were maternal age, parity, gestation age, bishop score at time of induction, induction delivery interval, type of delivery.

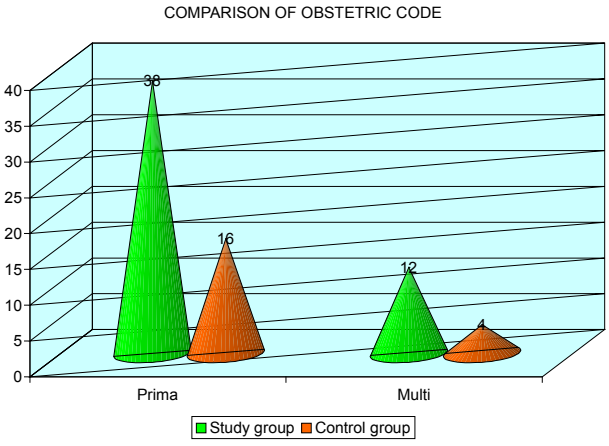
The results were subjected to statistical analysis by Student's t test, odds ratio, chi square test and p value < 0.05 was considered as significant.

Observation and Results

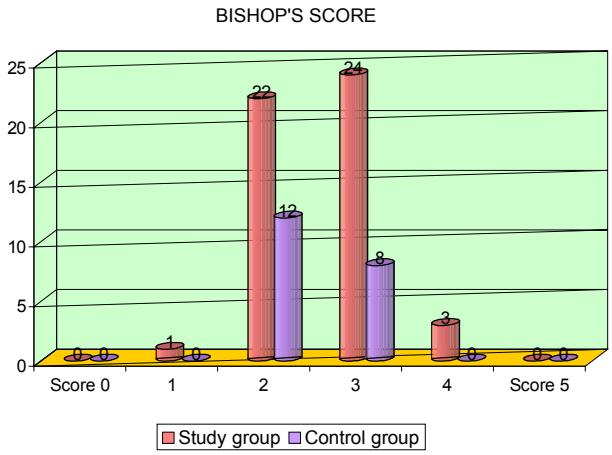
Total number of patients studied was 70. In the study group, 50 patients were induced with intracervical dinoprostone gel of 0.5 mg with 24/12 regimen and 20 patients were induced with intracervical dinoprostone gel 0.5 mg with 6 h/12 h regimen. The results observed were subjected to statistical analysis by students t test, odds ratio and chisquare.



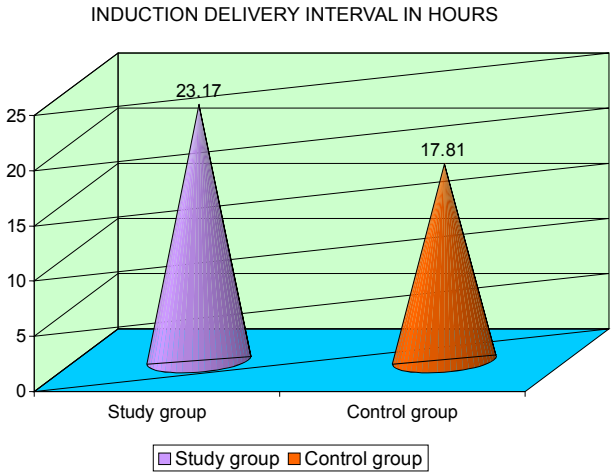
Graph 1: Age Distribution



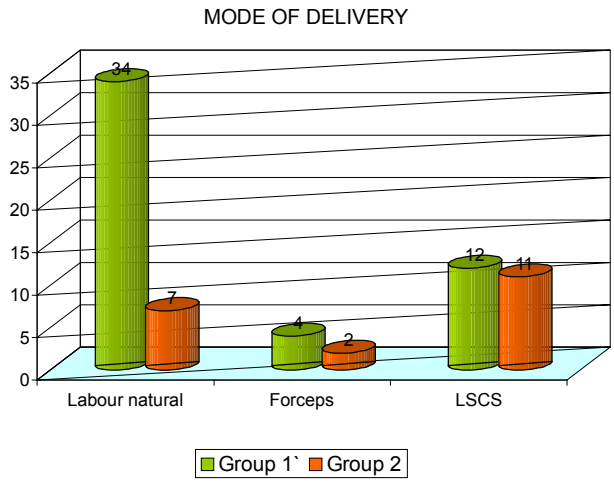
Graph 2: Comparison of Obstetric code



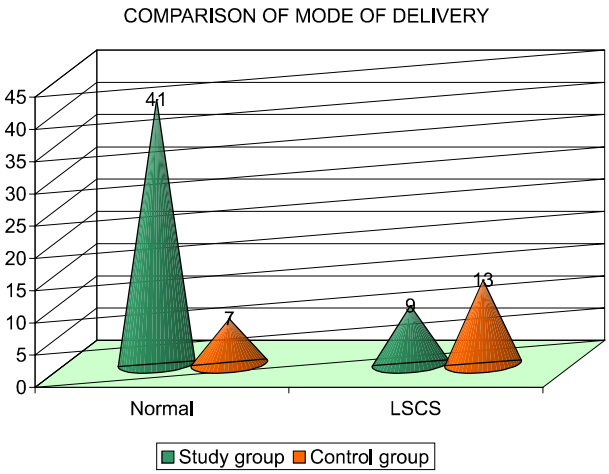
Graph 3: Bishop's Score



Graph 4: Induction Delivery Interval in Hours



Graph 5: Mode of Delivery



Graph 6: Comparison of Mode of Delivery

The mean induction delivery interval in long interval regimen was 23.17 hours and mean induction delivery in short interval regimen was 17.81 hours. There was significant difference between the two groups (p=0.046). Though the induction delivery interval was prolonged in the study group. 80% had successful vaginal delivery where as in the control group though the induction delivery interval was shortened, caesaresan section rates were 60%

Table 1:

Indication for LSCS	Study Group	Control group
Failed induction with fetal distress	7	4
PROM failed induction	1	1
Postdated with failed induction	1	3
Unengaged head with fetal distress	1	2
Oligohydramnios with failed induction	0	2

The rate of vaginal delivery was 80% in Study group, 40% in Control group. In present study induction delivery interval seems to be significantly less in Control group. Because of increased caesarean section. Failed inductions were those cases which did not fulfill the criteria for definition of induction of labour. Thus all caesarean delivery was considered failed induction irrespective of the causes of the same. Caesarean delivery rate in the present study was 20% in study group and 60% in control group. The various indications for caesarean section in study group were fetal distress 7 cases, premature ruptured for membranes failed induction 1 case, post dated failed induction 1 case and in Control group were fetal distress 4 cases, PROM failed induction 1 case, post dated with failed induction 3 cases, oligohydramnios with failed induction 2 cases.

Conclusion

Because the goal of labour induction is vaginal delivery, adequate time to enter into the labour should be allowed, provided the mother and baby are stable.

Thus by this study we conclude that by rescheduling the interval between the repeat doses of dinoprostone gel at 0 hr-24 hrs-36 hrs, the success of induction resulting in vaginal delivery was increased. Though the hospital stay was a little bit prolonged – this being a government hospital – it did not have financial burden on the patient and the patients were adequately counseled. There was no clinical evidence of sepsis. Our main aim was to reduce the number of primary caesarean sections by increasing the vaginal delivery rates.

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