

PARTOGRAPHIC COMPARISON OF SPONTANEOUS LABOUR AND LABOUR INDUCED WITH OXYTOCIN AND PROSTAGLANDINS (PGE₂)

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SUMMARY

A comparative partographic study has been conducted in Group I, consisting of 50 patients of spontaneous labour, Group II of 40 patients induced with Oxytocin and Group III consisting of 40 patients induced with oral PGE₂. The latent phase, Stage I and total duration of labour was shortened significantly with induction, though there was no significant difference in the active phase and the rate of cervical dilatation. However, the incidence of operative delivery was slightly increased with induction, which may be due to the fact that the patients included in the induction groups were high risk cases. The two inducing drugs i.e. Oxytocin and oral PGE₂ did not have any significant partographic difference. But oral PGE₂ had the advantage over Oxytocin that it was more acceptable to patients because with it the inconvenience of continuous intravenous infusion was avoided. Also prostaglandins were better than Oxytocin in certain selected groups of high risk cases e.g. Pregnancy Induced hypertension, cardiac disease and severe anaemia.

INTRODUCTION

Use of graphic labour record which shows uterine activity as well as cervicography is a great advancement in practical obstetrics. Freidman (1955) was the first

to develop a cervical dilatation time curve. The simplification of this by Philpott (1972) initially for use in Central Africa and later on by Studd (1973) showed that this method of documentation of labour enabled the staff to detect the earliest signs of deviation from normal pattern.

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In the present study it was proposed to compare partographically spontaneous labour with labours induced with oxytocin and oral PGE₂.

MATERIAL AND METHODS

The present study was carried out on 130 cases admitted in labour room in Government Women Hospital/Medical College, Amritsar. The cases were divided into 3 groups:

Group I: 50 control patients who went into spontaneous labour.

Group II: 40 study cases, in whom labour was induced by I/V oxytocin by escalation technique.

Group III: 40 study patients, in whom labour was induced with oral PGE₂ tablets. Labour was induced with 0.5 mg tablet

of oral PGE₂ and repeated one hourly. The dose was increased to 2 tablets per hour if adequate uterine activity was not achieved with one tablet. Maximum 3 tablets per hour were given. Once the uterine activity was established, the dosage was reduced to maintain the uterine contractions at desired level, and medication continued till the patient delivered.

The indications for induction included post datism, PROM, hypertensive disorders of pregnancy, intrauterine foetal death, antepartum haemorrhage, congenital malformation, Rh incompatibility, cardiac disease (Table I).

The partogram used for the study was based on the one described by Philpott (1979).

Table I
Showing indications for induction

Indications	Group II	Group III	Total
PROM	16	14	30
Postdatism	14	09	23
PET	04	06	10
IUD	02	06	8
APH	02	0	2
Congenital malformation	01	02	3
Rhesus incompatibility	01	02	3
Cardiac disease	0	01	1

Abbreviations:

PROM:	Premature Rupture of Membranes
PET:	Pre-eclamptic toxemia
IUD:	Intra uterine death
APH:	Ante partum haemorrhage

OBSERVATIONS AND RESULTS

Table II shows that mean duration of labour of latent phase was longer in primis as compared to mults of all the 3 groups. Also the mean latent phase was prolonged in spontaneous group as compared to both the induced groups.

The table shows that there was no significant difference in the duration of active phase among the 3 groups. But the duration of active phase was shorter in mults as compared to primis in all the 3 groups (Table II).

The total duration of labour was less

Table II
Showing Mean duration of latent phase, active phase and total duration of labour

Group	Parity	Mean duration (hours)		
		Latent Phase	Active Phase	Total duration
I	Primi	7.57	5.38	13.93
	Multi	4.00	3.68	8.36
II	Primi	3.99	5.55	10.35
	Multi	2.05	3.49	6.08
III	Primi	4.30	6.14	11.17
	Multi	2.47	3.57	6.60

Table III
Showing mode of delivery

Group	Parity	Mode of delivery		
		Normal	Forceps	Cacsarean
I	Primi	22(81.48%)	3(11.11%)	2(7.41%)
	Multi	23(100%)	-	-
II	Primi	10(58.82%)	4(23.53%)	3(17.65%)
	Multi	18(78.26%) [†]	2(8.70%)	3(13.04%)
III	Primi	15(62.5%)	6(25%)	3(12.5%)
	Multi	14(87.5%)	1(6.25%)	1(6.25%)

in both the induced groups as compared to spontaneous group but the total duration of labour was more in primi as compared to mults in all the 3 groups (Table II).

Table III shows that the incidence of caesarean section as well as forceps delivery was significantly more in both the induced groups as compared to the spontaneous group. The incidence of caesarean section as well as forceps delivery was more in primi as compared to mults in all the three groups.

DISCUSSION

In the present study, it was seen that the mean latent phase for Group I patients was 7.57 hours for primi and 4.00 hours for mults. In Group II, it was 3.99 hours for primi and 2.05 hours for mults. In Group III, the respective times were 4.30 hours and 2.47 hours. Schulman (1964) also found the latent phase to be less in the mults (mean 4.41 hours) as compared to primi (mean 7.26 hours). Jayshree et al (1985) had similar observations in the primi and mults of both spontaneous and induced groups.

Bremme et al (1980) had lower figures in the induced patients for latent phase when compared to our study. This could be because of early low amniotomy carried out by them in addition to induction by oxytocin or oral PGE₂.

The mean duration of active phase in Group I was 5.38 hours for primi and 3.68 hours for mults. In Group II, the duration of active phase was 5.55 hours for primi and 3.49 hours for mults, whereas in Group III, the respective figures were 6.14 hours and 3.57 hours. Bremme et al (1980) had an active phase of 4.8

hours for primi and 2.3 hours for mults for oxytocin group and the respective figures for PGE₂ induced group were 5.6 hours and 2.8 hours. Jayshree et al (1985) also had an active phase of 4.51 hours in primi and 3.96 hours in mults in the spontaneous group and 5.43 hours and 4.06 hours respectively for primi and mults of induced group. The figures in both these studies compare well with the present study.

The total duration of labour in this study was 13.93 hours for Primis and 8.36 hours for mults of Group I whereas the corresponding figures for Group II were 10.35 hours and 6.08 hours and that for Group III and 11.17 and 6.60 hours. This compares well with the study of Bremme et al (1980) who had the total duration of labour 9.1 hours for primi and 4.3 hours for mults of patients induced with PGE₂.

Lange (1981) had total duration of 5.44 hours for PGE₂ induced group and 4.14 hours for oxytocin induced group. Their shorter duration could be due to the fact that in their series, induction was done on patients with ruptured membrane.

The mean rate of cervical dilatation in Group I was 1.3 cm/hour for primi and 1.9 cm/hour for mults. The rate was 1.2 cm/hour in primi and 2.0 cm/hour for mults of Group II and 1.1 cm/hour for primi and 1.9 cm/hour for mults of Group III.

This compares well with the study of Jayshree et al (1985) who reported the rate of cervical dilatation 1.55 cm/hour for primi and 1.75 cm/hour for multi of spontaneous group and 1.28 cm/hour for primi and 1.78 cm/hour for multi in the induced group..

However, the rate of cervical dilatation is much less in the present study than given

by Friedman (1955). This was perhaps due to different nature of graph used by him.

In the present study, in Group I, 6% patients (all primi) had forceps delivery and 4% of patients (all primi) required caesarean section. The corresponding figures for Group II were 15% and that for Group III were 17.5% and 10%.

Jayshree et al (1985) in their study had 14% forceps deliveries and 5% caesarean sections in the spontaneous group and 36.37% forceps deliveries and 19.23% caesarean sections in the induced group.

In spontaneous group the forceps delivery and caesarean section rate are almost comparable to Jayshree et al (1985). But in induced group, the forceps delivery rate and caesarean section rate in the present study is definitely less because of better selection of patients and stringent supervision.

Thus this study clearly shows that latent phase and total duration of labour is shortened significantly with induction though there is no significant difference in the active phase and the rate of cervical dilatation. However, operative delivery rate is slightly

increased in induction groups probably due to the fact that the patients included in the induction groups were high risk cases. Oxytocin and oral PGE₂ do not have any significant partographic difference but oral PGE₂ is more acceptable to patient because the inconvenience of continuous intravenous infusion is avoided. Also, prostaglandins are better than oxytocin for certain selected groups of high risk cases e.g. Toxaemias of pregnancy, cardiac disease and severe anaemia.

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