

Partogram: A Simple and Effective Tool In Monitoring the Progress of Labour

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Abstract: Objective: To determine the utility of partogram in monitoring the progress of labour and determining whether appropriate interventions based on it will improve the fetomaternal outcomes. Method: A case controlled, prospective and interventional study was carried out on 600 women at the obstetric unit of a tertiary care hospital in Ahmedabad from May 1st, 2017 to December 31st, 2017. The progress of labour was monitored in 300 women with and without partogram each. The duration of labour, mode of delivery and fetomaternal outcomes were noted. Results: Labour was shorter than 12 hours in 82%, between 12-24 hours in 17% and more than 24 hours in 1% of the primigravida in the control group. After introduction of partogram (case group), labour was less than 12 hours in 94% and between 12-24 hours in 6% of the primigravida. Among the multigravida, 97% delivered in less than 12 hours and 3% in less than 24 hours when partogram was used as against 90% who delivered in less than 12 hours and 10% who delivered in less than 24 hours without the use of partogram. The rate of vaginal delivery rose from 60% to 72% and caesarean section fell from 38% to 17% among the primigravida with the use of partogram. In the multigravida, with the use of partogram, the rate of vaginal delivery rose from 75% to 85% and caesarean section fell from 23% to 14.5%. The rate of instrumental delivery in both these groups also declined. There was also a reduction in maternal complications like PPH (5% to 3.3%) and obstructed labour (1.3% to 0%) with the use of partogram. Henceforth, the above study showed that by using partogram as a tool for assessment of the progress of labour, timely intervention was possible and as a result, the frequency of prolonged labour and fetomaternal complications were reduced.

Date of Submission: 20-04-2018

Date of acceptance: 07-05-2018

I Introduction

Labour is one of the most dangerous journey that a woman undertakes. Though it is a natural process, but complications can arise at any time during its course. The MMR in India is 174 per 1,00,000 live births (World Bank, 2015 report). Prolonged, obstructed labour is a major cause of these deaths. In those who survive, sequelae like sepsis, postpartum haemorrhage and urinary fistula occur. Obstructed labour also leads to adverse perinatal outcomes like death and birth asphyxia^{1,8}.

The partogram endorsed by the WHO is a simple and effective tool for the early recognition of the complications during labour¹. This helps in making timely interventions so that maternal and foetal outcomes are improved. This study was carried in the obstetric unit of a tertiary care hospital to validate the utility of partogram.

II Materials And Methods

This case controlled, prospective and interventional study was carried out at the obstetric unit of a tertiary care hospital in Ahmedabad from May 1st, 2017 to December 31st, 2017.

Study Design: Case controlled prospective, interventional study.

Study location: At a tertiary care teaching hospital in the Department of Obstetrics and Gynaecology, Ahmedabad, Gujarat, India

Study Duration: May1, 2017 to December 31, 2017

Sample Size: 600 patients

Subjects and inclusion criteria: A total of 600 women with singleton pregnancy with spontaneous labour at term were included in the study. Out of these, the progress of labour in 300 women was studied using a partogram (case group) while in the remaining 300 women, labour was not monitored using a partogram (control group). In both these groups, 100 women were primigravida and 200 women were multigravida. The parameters were duration of labour, mode of delivery and fetomaternal complications.

III. Result

The results were studied separately in primigravida and multigravida women. In the group monitored using partogram, 94% primigravida had duration of labour less than 12 hours, 6% had labour less than 24 hours while labour did not exceed 24 hours in any. In the control group, 82% of the primigravida had duration of labour less than 12 hours, 17% had duration of labour less than 24 hours and 1 patient had duration of labour more than 24 hours. In the multigravida, duration of labour in the case group was less than 12 hours in 97% and less than 24 hours in 3% while in the control group, the duration of labour was less than 12 hours in 90% and less than 24 hours in 10%.

In the primigravida, the rate of vaginal delivery rose from 60% to 72% and the rate of instrumental delivery and LSCS fell from 2% to 1% and 38% to 27% respectively with the use of partogram. In the multigravida, the rate of vaginal delivery rose from 75% to 85% while the rate of instrumental delivery fell from 2% to 0.5% and the rate of LSCS fell from 23% to 14.5% with the use of partogram.

There was also a decline in the rate of maternal complications like PPH (5% to 3.3%) and obstructed labour (1.3% to 0%) with intrapartum assessment of labour using partogram.

Table 1: Evaluation of impact of partogram on the process of labour and the fetomaternal outcomes

		Case (n=300)			Control (n=300)		
		Primigravida (n=100)	Multigravida (n=200)	Total (n=300)	Primigravida (n=100)	Multigravida (n=200)	Total (n=300)
Duration Of Labour	<12hr	094 (94%)	194 (97%)	288(96%)	082 (82%)	180 (90%)	262 (87.3%)
	12-24hr	006 (6%)	006 (3%)	012 (4%)	017 (17%)	020 (10%)	037 (12.3%)
	>24hr	000 (0%)	000 (0%)	000 (0%)	001 (1%)	000 (0%)	001 (0.3%)
Mode Of Delivery.	Vaginal	072 (72%)	170 (85%)	242 (80.6%)	060 (60%)	150 (75%)	210 (70%)
	Instrumental	001 (1%)	001 (0.5%)	002 (0.6%)	002 (2%)	004 (2%)	006 (2%)
	LSCS	027 (27%)	029 (14.5%)	056 (18.6%)	038 (38%)	046 (23%)	084 (28%)
Maternal Complications	PPH	004 (4%)	006 (3%)	010 (3.3%)	009 (9%)	006 (3%)	015 (5%)
	Obstructed labour	000 (0%)	000 (0%)	000 (0%)	002(2%)	002 (1%)	004 (1.3%)
Neonatal Outcome	APGAR>7 (At 1 min)	100 (100%)	192 (96%)	292 (97.3%)	098 (98%)	194 (92%)	282 (94%)

Favourable neonatal outcome (APGAR score >7 at 1 min after birth) was higher (97.3%) when labour was monitored using a partogram.

IV. Discussion

The partogram is a very simple and effective tool in the monitoring of labour and prevention of labour related complications especially in resource limited countries like India. Duration of labour rarely exceeded 24 hours even if partogram was not used because of indiscriminate augmentation due to lack of scientific monitoring. On monitoring labour with partogram, the oxytocin requirement decreased because progress of labour was adequate. Augmentation was done only when progress of labour lagged 2 hours beyond the alert line⁷. The caesarean section rate fell from 23% to 14.5% in multigravida and 38% to 27% in the primigravida. Due to intensive monitoring of cervical dilation and descent of fetal head, the rate of obstructed labour fell from 1.3% to 0% with the use of partogram³.

The frequency of vaginal examination was also reduced. It was done every 4 hours without augmentation and every 2 hours after augmentation. This helped in reducing neonatal sepsis and improving neonatal outcome.

V. Conclusion

The partogram is a simple and important tool for assessing the progress of labour. With the help of partogram, the quality and regularity of observations of mother and foetus increase and any abnormal progress is diagnosed early^{2,5}. This helps in making decisions for referral, interventions or termination of labour. Its use reduces the rate of caesarean section, operative vaginal delivery, augmentation of labour and fetomaternal complications.

It is therefore recommended that the implementation of partogram should be encouraged in all hospitals at all levels so that every woman in labour can be benefitted by this scientific approach of labour management^{4,6}.

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Dr. Arti Jayesh Patel. Partogram: A Simple and Effective Tool In Monitoring the Progress of Labour."IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 5, 2018, pp 34-36.