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Role of Partogram in Assessment of Labour

Medical Science

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ABSTRACT

Objectives: To find the pattern of normal labour in uncomplicated pregnancy and recognize abnormal labour as soon as possible.

Method: A prospective study was conducted with 200 patients ,100 primigravidae and 100 multigravidae who were admitted with labour pains from june 2012 to march 2013.All events are plotted on partogram and analysed.

Results: In this study of 200 full term patients,In first stage of labour,protracted active phase was common abnormality in both groups.Arrest of descent was common in second stage of labour.48% of primi required intervention in comparison to 21% of multigravida. Out of 100 patients, 25% required LSCS in primi and 5% in multigravida.

Conclusion: Partogram is an easy and sensitive method.Study of different components of Partogram can tell the progress at a glance and act accordingly.It has shown to be effective in preventing prolonged labour, reducing operative intervention and improving the neonatal outcome.[1]

Introduction

Labour has been termed the most dangerous journey a human ever under takes. The reason being that although it is a natural process but complications can arise at any time during its course. Maternal mortality remains between 500.[2] and 1000 deaths for 100,000 live births in developing countries. A major cause of these deaths is prolonged obstructed labour primarily because of cephalopelvic disproportion. In those who survive, morbidity is significant due to complications like sepsis, postpartum hemorrhage, ruptured uterus and urinary fistula. Obstructed labour is also a major precedent of perinatal deaths, birth asphyxia and neonatal sepsis.

The partogram initially introduced by Philpott2 and endorsed by WHO is a simple and accurate instrument for early recognition during labour. This makes timely remedial intervention possible and alters the maternal and fetal outcome favorably. This study was undertaken to validate this claim in a tertiary care public hospital where junior doctors and midwives undergo training under supervision.

The partogram consists of a graphic representation of labour and is considered an excellent visual resource to analyze cervical dilatation and head descent in relation to time3,4.The partograph is a form on which labor observations are recorded to provide an overview of labor, aiming to alert midwives and obstetricians to deviations in labor progress as well as maternal and fetal wellbeing. When deviations in labor progress are recognized early and corrected, complications are prevented and normal labor and delivery can occur.

Materials and Methods

This study was performed on 100 cases of primigravida and 100 cases of multigravida in labor from June 2012 to march 2013.

Inclusion Criteria

1. Full term pregnant women who were in labor
2. Vertex presentation
3. Cervical dilatation 3cm or less on admission
4. Cases with complications associated with pregnancy were excluded.
5. Cases with hypersensitivity to oxytocin were not taken.
6. Cases which were predicted to deliver vaginally were only included.
7. At least 3 antenatal visits.

Partogram designed by WHO used for intrapartum monitoring of in our patients. Partogram is a graphical representation of the events of labour plotted against time in hours.

Table 1 Various age groups of primigravida and multigravida

Age in Years	Primigravida		Multigravida	
	No of Patients n=100	Percentage	No of Patients n=100	Percentage
<20	5	5%	6	6%
21-30	83	83%	83	83%
>30	12	12%	11	11%

This table shows majority of patients were between 20-30 years in both groups.

Table 2 Labour abnormalities in first stage

	Primi		Multi	
	No.of patients n =100	Percentage	No.of patients n =100	Percentage
Prolonged Latent Phase	5	5%	3	3%
Protracted Active Phase	25	25%	15	15%
Secondary arrest of dilatation	9	9%	2	2%
Precipitate Labour	3	3%	2	2%

This table shows that protracted active phase present as the most common abnormality of first stage in both groups and precipitate labour is least common.

Table 3 Labour abnormalities in second stage in present study in present study and its comparison with other studies.

	Friedman's study	Present study	
		Primi	multi
Failure of descent	3.6%	6%	1%
Protracted descent	4.7%	6%	3%
Arrest of descent	5%	9%	4%

This table shows all types of disorders of second stage are in equal ratio in both according to our study as well as other studies.

Table 4 Various interventions and mode of delivery

Mode of Delivery	Primi		Multi	
	No.of patients n =100	Percentage	No.of patients n =100	Percentage
Normal delivery	52	52%	79	79%
Normal delivery + stripping + ARM + Oxytocin drip	3	3%	3	3%
Normal delivery + ARM + Oxytocin drip	20	20%	13	13%
Caesarean section	25	25%	5	5%

In this study, we observed that 48% of primi required intervention in some or way in comparison to 21% in multigravidae.

Among 48% primi, 6.25% required stripping along with ARM and Oxytocin drip, 41% required ARM and Oxytocin drip,52% delivered by Caesarean section.

Among 21% of Multigravidae, 14% required Stripping, ARM and Oxytocin drip, 61%

ARM and Oxytocin drip and23% delivered by Caesarean section.

Table 5 Various indications of caesarean section

Indication of Lscs	Primi		Multi	
	No .of patients n =100	Percentage	No.of patients n =100	Percentage
First stage abnormalities Prolonged latent phase Arrest of dilatation	 2 8	 2% 8%	 0 2	 0% 2%
Second stage Abnormalities Failure of descent Arrest of descent	 6 9	 6% 9%	 1 4	 1% 4%
Others Fetal distress MSL Cord Prolapse	 1 1 0	 1% 1% 0%	 0 0 1	 0% 0% 1%

This table showed majority of LSCS in primi are due to arrest of decent and dilatation and in multigravidae due to arrest of descent in second stage. Other causes were fetal distress, MSL, cord prolapse etc.

Table 6 Showing various modes of Delivery according to zone of partograph present at the time of admission

Zone in partograph at the time of full dilatation	Normal delivery		Normal delivery with induction		Caesarean Section	
	No.of patients n =100	Percentage	No.of patients n =100	Percentage	No.of patients n =100	Percentage
Primigravidae						
Zone A(to the left of alert line)	52	52%	15	15%	16	16%
Zone B(between alert and action line	0	0%	8	8%	3	3%
Zone C (to the right of action line)	0	0%	0	0%	0	0%
Multigravidae						
Zone A(left to the alert line)	79	79%	13	13%	5	5%
Zone B (between alert and action line	0	0%	3	3%	0	0%
Zone C (right to action line)	0	0%	0	0%	0	0%

This study showed 16% primi in zone A delivered by caesarean section as compared to 5% multigravidae.75% primi delivered vaginally, 30.6% required intervention and in multigravidae 95% delivered vaginaly,16.8% required intervention.

Discussion

Partogram is sensitive tool for study of progress of labour and early detection of abnormalities. It serves as an early warning system and assist in early decision on transfer, augmentation and intervention.

In present study, majority of patients were between 20-30 years age .Half of primi patients were admitted at 1 finger cervical dilatation and lower station of fetal head and multigravida patients had 2-3 cm dilatation and higher station on admission.

According to WHO multicenter trial in Southeast Asia, introduction of the partogram with an agreed labour management protocol significantly reduced both prolonged labour (from 6.4 to 3.4%) and the proportion of labours requiring augmentation (from 20.7 to 9.1%). Emergency caesarean sections fell from 9.9% to 8.7%.In present study augmentation required in 20% patients out of 200 patients and caesarean section occurred in 15% patients out of 200.

According to Itapecerica da Serra - 2004 to 2005 study out of total deliveries in zone 1 97% normal vaginal deliveries occurred and 3% LSCS whears in our study 89% normal deliveries with and without induction and 11% LSCS. Out of total deliveries in zone 2, 91% was normal vaginal deliveries and 9% was caesarean section whears in our study 79% normal deliveries and 21% lscs .Percentage of LSCS had increased in second stage of labour.

In two African studies, perinatal mortalities and rates of caesarean section had decreased significantly after introducing partogram. Study at Zimbabwe, perinatal mortality decreased from 5.8% to 0.6% and in study at Malawi decreased from 5.3% to 3.8%.Rate of caesarean section decreased from 9.9% to 2.6% in Zimbabwe study and from 12.3% to 9.5% in Malawi study.[3,6,7]

According to STUDY OF COURSE OF LABOUR BY USING MODIFIED WHO PARTOGRAPH (Kunaal K Shinde, Vidyadhar B Bangal, Rashmi K Singh) Protracted active phase and secondary arrest of labor were the commonest active phase abnormalities observed and in our study protracted active phase in first stage and arrest of descent in second stage were common abnormalities.

According to Friedman's study, in second stage of labour failure of descent occurred in 3.6% patients and in our study 6% in primi and 1% in multigravida. Protracted descent occurred in 4.7% in Friedman study whears 6% in primi and 3% multigravidae in our study. Arrest of descent occurred in 5% in Friedman study and 9% in primi and 4% in multigravida in present study.

Majority of the caesarean section in primi occurred because of arrest in dilatation in first stage and in multigravida because of arrest of descent in second stage.

Conclusion

The study concluded that partogram was a very useful tool. Its use reduced caesarean sections, operative vaginal delivery, rate of augmented labours, complications of labour, maternal mortality and morbidity.

It is recommended that implementations of partogram should be encouraged in all hospitals at all levels, and nurses and midwives should be trained to use it for better results.

It is suggested that every women in labour must be benefitted by this scientific approach of labour management i.e. with the use of Modified WHO partograph.

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