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Original Research Article

A study on the role of partograph in monitoring labour in high risk pregnancies

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ABSTRACT

Background: The progress of labour can be graphically represented using the WHO partogragh, which helps in early detection and prevention of complication of labour, thus resulting in a better feto-maternal outcome especially in high risk cases.
Methods: The study was undertaken at Hitech Medical College and Hospital, Bhubaneswar from March 2017 to February 2019 on 200 high risk patients. The progress of labour was plotted and assessed on Modified WHO partograph.
Results: Majority of the cases were referred cases. Augmentation of labour was carried out in 56 cases. The mean duration of labour in the first stage was 5.4 hours and 4.1 hours in primi and multigravidas, whereas that of the second stage of labour are 37.5 minutes and 26.3 minutes respectively. 51 cases had prolonged labour and 15 cases had arrest of labour in the second stage. Maximum number of cases underwent LSCS due to abnormal labour progression. 8.7% of the cases had PPH and 2.3% had puerperal sepsis. Neonatal asphyxia was seen in 13.6% cases and 2.8% had early neonatal death.
Conclusion: The results conclude that the WHO modified partograph is an inexpensive useful tool in monitoring the progress of labour and reducing foeto maternal morbidity in high risk groups.

Keywords: Action line, Alert line, High risk, Labour partograph

INTRODUCTION

Abnormality in the progress of labour and its related complications are an important cause of maternal and perinatal morbidity. Timely diagnosis of prolonged labour and its effective management can avert a lot of complexities and difficulties during the process and ensure a good feto-maternal outcome.[1]

The concept of partogram was devised by Friedman in 1954 and was based on an observation of cervical dilatation and the station of the presenting part of the fetus against time in hours from the onset of labour and was a S shaped curve.[2] Philpot developed the first formal partograph introducing the action and the alert line.[3] The partograph that is used today is approved by WHO and is a simple graphical method of monitoring the intrapartum period.[4,5] It is used as the part of safe motherhood program.[6]

Apart from the complications of prolonged labour like fetal asphyxia, PPH, sepsis etc., high risk pregnancies have their own risks and dangers and need very close monitoring of labour to ensure a safe vaginal delivery or even to prepare the patient for a timely LSCS before it's too late. The present study aims to determine the benefits

of partographic monitoring of labour in high risk cases, detection of abnormal progress, timely intervention and preventing unnecessary caesarean section.

METHODS

A study was carried out on 200 women at term with high risk pregnancies admitted to labour room in Hitech Medical College and Hospital, Bhubaneswar. Patients with mal presentations, multiple pregnancies, pregnancies with previous caesarean section and those with chronic medical disorders like heart disease, hypothyroidism, seizure disorders were excluded from this study.

Partographic charting was done when the patients entered the active phase of labour to assess the progress. Monitoring of uterine contractions and strict fetal surveillance were done along with the assessment of the progress of labour periodically. Oxytocin augmentation was done wherever necessary and the cases were followed up till the termination of pregnancy whether vaginally or by caesarean section.

Complications that arose during the monitoring of labour were strictly recorded and managed accordingly. Data was collected over a period of two years from March 2017 to February 2019. The result was analysed and expressed in proportions and percentages. Informed consent was taken from all the patients after explaining the aims and objectives of the study.

RESULTS

Table 1 shows the basic demographic characteristics. There were 126 emergency cases whereas only 74 were booked cases, as because this hospital is the referral health centre for all the primary and community health centres as well as other small health facilities in this area. All other characteristics like maternal age, socioeconomic status and parity were tabulated systematically and their percentage was calculated.

Table 1 : Basic demographic characteristics.

Booking status	n	%
Booked cases	74	37%
Emergency cases	126	63%
Maternal age		
<19	6	3.2%
19-30	150	75.2%
>30	44	22%
SES		
Lower class	109	54.5%
Middle class	79	39.5%
Upper class	12	6%
Parity		
Primi	87	43.5%
Multi	113	56.5%

Table 2 : Intervention and progress of labour.

Induction	Primi	Multi
SOL 132 (66%)	30	102
IOL 68 (34%)	42	26
Augmentation		
ARM	39	16
Oxytocin	56	23
Mean duration of labour		
First stage	5.4 hours	4.1 hours
Second stage	37.5 minutes	26.3 minutes

Table 2 shows intervention and progress of labour and a comparison between primigravida and multigravida. In 102 multiparous women, onset of labour was spontaneous and only in 26 cases induction of labour was done. Whereas, 30 cases of primigravidas had spontaneous onset of labour and 42 cases were induced. Augmentation of labour was done by oxytocin in 56 cases of primigravidas and in 23 multiparous women. ARM was also used to augment labour more so in primiparas (39 cases).

Table 3 : Causes of intervention and outcome.

Abnormality of labour	VD	Instrumental	LSCS
Prolonged labour/ Nonprogress 51 (25.5%)	22	2	27
Arrest of labour in second stage 15 (7.5%)	4	4	7
Fetal distress/MSL 19 (9.5%)	5	5	9

Table 3 shows the causes of intervention of labour and the mode of delivery in each case. 51 cases in which intervention was required belonged to a large group of patients in which the labour was prolonged or the progress was not satisfactory. In only 15 cases, arrest of labour occurred in second stage and in 19 cases there was fetal distress.

Table 4 shows the relationship between mode of delivery and the action or alert line. 118 (59%) cases before the alert line delivered vaginally and only 11 (9.3%) of cases went for LSCS. Just the opposite result was observed when the partograph crossed the action line, where maximum cases (80%) were delivered by LSCS.

Operative vaginal delivery was considered in each group and 19.9% of cases were delivered through operative vaginal delivery where the partograph fell between the alert and the action lines.

Adverse maternal outcome was recorded in Table 5. 73 cases suffered from PPH, 51 cases had wound infection and puerperal infection occurred in 19 cases.

Table 4 : Mode of delivery in relation to alert and action line.

	VD	Operative	LSCS
Before alert line 118 (59%)	99(83.8%)	8(6.7%)	11(9.3%)
In between the alert and the action line 67 (33.9%)	32(47.7%)	13(19.4%)	22(32.8 %)
After the action line 15 (7.5%)	2(13.3%)	1(6.6%)	12(80%)

Table 5 : Maternal outcome.

Outcomes	
PPH	73(8.7%)
Wound infection	51(6.2%)
Peurperal sepsis	19(2.3%)

Likewise, perinatal outcome was recorded in Table 6. Neonatal asphyxia was seen in maximum number of cases, 9.3% of the babies were admitted to NICU and 2.8% of babies died in the early neonatal period due to complications.

Table 6 : Fetal outcome.

Outcomes	
Neonatal Asphyxia	27(13.6%)
NICU admission	18(9.3%)
Neonatal death	5(2.8%)

DISCUSSION

In this present study a total number of 200 women were analysed in their active phase of labour by using modified WHO partograph. Active management of labour by a graphical depiction of a labour curve is done in all cases and maternal and neonatal outcome were studied. As the study was conducted in high risk pregnancies, partographic monitoring was essential to evade further complications related to prolonged or abnormal labour and to consider early intervention in case of need.[7] Javed et al, studied 500 primigravidas and 500 multigravidas with low risk pregnancies to determine the effect of partogram on the rate of intervention, operative deliveries and maternal morbidity.

The study found partogram an useful tool in reducing incidence of prolonged labour, maternal morbidity and rate of caesarean section fell from 4.4% to 3.6% in multigravidas and from 12.8% to 6.4% in primigravidas.[8] In our study the patients belonged to high risk group and many were referred from nearby hospitals to this tertiary care centre. Of them 66% of cases had spontaneous onset of labour, whereas in 34% of cases, labour was induced under strict vigil. Study found significant reduction in the incidence of operative vaginal delivery and caesarean section rate and better neonatal outcome by augmenting labour with oxytocin and using partogram.[9] Authors also had a similar experience. The mean duration of first stage of labour was evaluated and was found to be 5.4 hours in primigravidas and 4.1 hours in multigravidas. The second stage duration was 37.5% minutes and 26.3% minutes in primi and multigravidas respectively. The observation was very similar to a study conducted by Bhatt et al.[10] In another study by Kunal Shinde et al, it was also found that multigravidae progressed faster than primigravidae.[11]

In the present study, maximum number of cases before the alert line underwent normal vaginal delivery(84.2%) which is similar to a study by Javed et al,[8] but studies by Friedman E. and Shinde et al showed a higher incidence of 92.3% and 96.2% respectively.[2,11] Cases crossing the action line had operative vaginal delivery in 6.6% of the cases, but maximum patients (80%) underwent LSCS. As this study was conducted in only high risk cases, liberal decision for caesarean section was taken in some cases. Only 2 cases who crossed the action line had normal vaginal delivery under strict vigilance.

Maternal outcome is an important aspect of this study which was conducted only in high risk cases. 8.7% of cases had PPH and 6.2% had wound infection. Iffat J, et al found that by using partograph, frequency of all these complications are reduced to a great deal.[12] Neonatal asphyxia occurred in 13.6% of cases irrespective of the pattern of labour which is similar to the findings of Shah N, et al.[13] NICU admission rate was 9.3% and neonatal death was 2.8%. This indicates strict fetal monitoring is to be done along with partograph study in all cases.

CONCLUSION

To conclude, the modified WHO partograph is a highly effective and highly essential tool in monitoring and assessing the progress of labour. It prevents prolonged and obstructed labour and helps in appropriate decision making for operative vaginal delivery or lower segment caesarean section. As in high risk cases more vigilance and caution is required, partographic monitoring makes the task a lot easier for health care providers and its effectiveness is obvious in deciding a suitable mode of termination in these cases and at the same time preventing complications to a great extent.

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REFERENCES

1. Dangal G. Preventing prolonged labour by partogram. Int J Gynecol Obstset. 2006;7(1).
2. Friedman EA. The graghic analysis of labour. Am J Obstet Gynecol. 1954;68:1568-75.

3. Philpott RH, Castle WM. Cervicographs in the management if labour in primigravidae. I. The alert line for detecting abnormal labour. J Obstet Gynecol. 1972;79(7):592-8.
4. Rani J, Sharma D, Shegal A. Role of partogram in high risk pregnancies : an experience at a tertiary care centre. Arch Gynecol Obstet. 2015;291:73-8.
5. World Health Organization. Partograph in management of labour. World Health Organization Maternal Health and Safe Motherhood Programme. Lancet. 1994;343:1399-404.
6. Who Partograph cuts complication of labour and childbirth. Safe Mother. 1994;(15):10.
7. Penumadu KM, Hariharan C. Role of partograph in the management of spontaneous labour in Primigravida and multigravida. Int J Reprod Contracept Obstet Gynecol. 2014;3(4):1044.
8. Javed I, Bhutta S, Shoaib T. Role of partogram in preventing prolonged labour. J Pak Med Assoc. 2007 ;57(8):408-11.
9. Rodriguez W. Walss-Rodriguez RJ, Gudino-Ruiz F, Tapia-Rodriguez S. Trail of labour. A comparative study between Friedman's Partogram and the conventional descriptive program. Gynecol Obstet de Mexico. 1987;55:318-322.
10. Bhatt MJ, Kadikar GK, Kanani M, Shah S. Comparison of normal and abnormal labour by using modified WHO partograph. Int J Reprod Contrcept Obstet Gynecol. 2018;7(4):1440-5.
11. Shinde KK, Bangal VB, Singh RK. Study of course of labour by modified WHO partograph. Int J Biomedical Adv Res. 2012:03:391-6.
12. Iffat J, Shereen B, Tabassum S. Role of partogram in preventing prolonged labour. J Pakistan Med Assoc. 2007:57(8):408-11.
13. Shah N, Maitra N, Pagi SL. Evaluating role of parity in progress of labour and its outcome using modified WHO partograph. Int J Reprod Contracept Obstet Gynecol. 2016;5(3):860-3.

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