

Original Article

Implementation of Partograph and Its Effect on Outcome of Spontaneous Labour at Term

S Sharmin¹, M Rashid², SC Hazra³, L Khondker⁴**Abstract :**

A cross sectional study was carried out in the department of Obstetrics and Gynae of Dhaka Medical College Hospital (DMCH). Two hundred thirty two cases who fulfilled the inclusion criteria were studied. This study aimed to assess the outcome of implementation of WHO modified partograph in labour management with special interest to evaluate the fetomaternal outcome. Among the 232 cases, engaged fetal head had more vaginal delivery, 78.8% than unengaged head. The rate of caesarean section was 26.9% in women with unengaged head vs 11.5% in women with engaged head in this study. This study showed that there was no LUCS when cases remained within alert line and outside the action line in partograph all were delivered by caesarean section. The rate of spontaneous delivery was more 58.6% who did not require any augmentation. On the other hand 80 percent cases of LUCS needed augmentation. In this study, 84.1 percent babies cried spontaneously, 12.9 percent cried after resuscitation and only 3 percent needed admission to neonatal care unit. The frequency of neonatal resuscitation was higher for the group who crossed the alert line (27.8%) or action line (23.1%), than the group which remained within alert line (8.6%) in partograph. Thus with proper monitoring and maintenance of partograph in labour prolonged labour or obstructed labour and their sequelae can be avoided, operative interventions will be reduced and thus fetomaternal outcome will be improved.

Key words: effect of partograph during labour, outcome of spontaneous labour at term.

Introduction:

Approximately half a million women lose their lives because of complication of pregnancy every year and huge numbers are left with painful injuries as a result of obstructed or prolonged labour during childbirth.¹ It is estimated that for each death of a mother, there are 15 who escaped near death by chance. Early detection of abnormality and abnormal progress of labour and timely intervention and prevention of

prolonged labour would significantly reduce the risk of obstructed labour and other complications associated with it such as sepsis, post partum hemorrhage rupture uterus, genital fistula and death. Prolonged and obstructed labour also lead to anoxia, infection, death and disability for the new born.² The World Health Organization recommends the use of partograph in labour with a view of improving labour management and reducing maternal and fetal morbidity and mortality.³ It is a simple, reliable tool for graphically recording the progress of labour and monitoring the health of the mother and fetus.⁴ Partograph has been in use in different developed and developing countries of the world since 1970. It serves as an early warning system and assists in early decision making on intervention of labour.⁵ Prolonged labour, augmented labour, caesarian section rate and intrapartum fetal deaths are reduced with the use of partograph. Thus the use of this inexpensive and effective tool in labour can make enormous change in fetomaternal morbidity and mortality.⁶ The present study was designed to evaluate the impact of WHO modified partograph on labour management. The study also designed to determine the occurrence of prolonged and obstructed labour and to find out the cause of prolonged labour.

Materials and Methods:

This cross sectional descriptive type of study was carried out in maternity unit IV of Dhaka Medical College Hospital from January 2005 to June 2006. During this study period 905 obstetric cases were admitted under maternity unit IV and 232 women who fulfilled the inclusion criteria (both primi and multiparous women with term, singleton pregnancy in vertex presentation and no fetal distress on admission) were included in this study. Detailed history regarding age, parity, duration of pregnancy and labour pain was taken from every patient. Examination was done including general physical examination, abdominal examination for fundal height, lie, presentation, engagement, amount of liquor, palpable uterine contraction and fetal heart rate. Pelvic examination was done for pelvic assessment and Bishop score. All the data were entered in a predesigned pro forma. The course of labour in all the patient was recorded on WHO modified partograph. Every patient was studied in details with course of labour, intervention required, mode of delivery and fetal outcome. Collected data were compiled and appropriate statistical analysis done using SPSS.

Results:

Most of the primiparous 55.8% belonged to age group 16-20 years and most of the multiparous 39.4 % belonged to age group 26-30 years . Engaged fetal head had more vaginal delivery, 78.8% than unengaged head. The rate of caesarean section was 26.9% in women with unengaged head vs 11.5% in women with engaged head in this study. Here in this study, majority of cases falling within alert line. This study showed that there was no LUCS when cases remained within

-
1. Dr. Sabina Sharmin, (Obst. & Gynae)
MO, Infectious Disease Hospital, Mohakhali, Dhaka.
 2. Dr. Maliha Rashid, Head of the Dept. Obs. & Gynae,
Dhaka Medical College, Dhaka.
 3. Dr. Samaresh Chandra Hazra, Specialist in Dermatology
and Venereology, BSMMU, Dhaka.
 4. Dr. Lubna Khondker, Dept of Dermatology and
Venereology BSMMU, Dhaka.

Corresponding Author:

Dr. Sabina Sharmin

E-mail: sabinasharmeen@yahoo.com

alert line and outside the action line all were delivered by caesarean section. The rate of spontaneous delivery was more 58.6% who did not require any augmentation. On the other hand 80 percent cases of LUCS needed augmentation. In this study, 84.1 percent babies cried spontaneously, 12.9 percent cried after resuscitation and only 3 percent needed admission to neonatal care unit. There was no stillbirth. The frequency of neonatal resuscitation was higher for the group who crossed the alert line (27.8%) or action line (23.1%), than the group which remained within alert line (8.6%).

Table-I: Age distribution of the patients (n=232)

Age(year)	Primiparous (n=138)	Multiparous (n=94)
16-20	77 (55.8%)	5 (5.3%)
21-25	47 (34.1%)	35 (37.2%)
26-30	13 (9.4%)	37 (39.4%)
> 30	1 (0.7%)	17 (18.1%)

Table-II : Outcome of labour in relation to engagement of fetal head

Engagement of fetal head	Spontaneous vaginal delivery	Assisted vaginal delivery	LUCS
Engaged (n=113)	89 (78.8%)	11 (9.7%)	13 (11.5%)
Not engaged (n=119)	80 (67.2%)	7 (5.9%)	32 (26.9%)

Table-III: Distribution of cases in relation to alert and action line

Progression of laborer	Primiparous (n=138)	Multiparous (n=94)
Within alert line	78(56.5%)	62 (66.7%)
Outside alert line	50 (36.2%)	29 (30.9%)
Outside action	10 (7.2%)	3 (3.2%)

Table-IV: Mode of delivery in relation of alert and action line

Progress of labour	Spontaneous vaginal	Assisted vaginal delivery	LUCS
Within alert line (n=140)	129 (92.1%)	11 (7.9%)	0
Outside alert line (n=79)	40 (50.6%)	7 (8.9%)	32 (40.5%)
Outside action line (n=13)	0	0	13 (100%)

Table-V: Outcome of labour in relation to augmentation of labour

Augmentation	Spontaneous vaginal delivery (n=169)	Assisted vaginal delivery (n=18)	LUCS (n=45)
yes	70 (40.4%)	16 (88.9%)	36 (80%)
No	99 (58.9%)	2 (11.1%)	9 (20%)

Table-VI: Neonatal response after delivery

Neonatal response	No of babies	Percentage
Spontaneous cry	195	84.1
Cried after resuscitation	30	12.9
Needed admission to neonatal care unit	7	3

Table-VII: outcome in relation to alert and action lines (APGAR score in 5 minutes)

Progress of labour	6	6
Within alert line (n-140)	12 (8.6%)	128 (91.4%)
Outside alert line (n=79)	22 (27.8%)	57 (72.2%)
Outside action line (n=13)	3 (23.1%)	10 (76.9%)

Discussion:

This cross Sectional study was conducted on 232 term primi and multiparous women constitute the majority of patients (n=138) and most of them belonged to age group 16-20 years. According to Bangladesh demographic and health survey,⁷ media age group of first pregnancy in Bangladesh is 18.3 years.

Influence of engagement of fetal head in labour on mode of delivery was found to be a positive one in present study. Engaged fetal had more vaginal delivery than unengaged head. The rate of caesarean section was 26.9% in women with unengaged head va 11.5% in women with engaged head in this study. This results was consistent with the results of many studies.⁸⁻⁹

Here is this study, majority of cases falling within alert line. In Rahman.⁹ study 34 percent cases crossed the alert line and 7 percent case fall outside action line. In dujardin's.¹⁰ series 29.8 percent cases crossed the alert line. This study showed that there was no LUCS (lower uterine caesarean section) when cases remained within alert line and outside the action line all were delivered by caesarean section. IN Philpott's.⁵ percent cases crossing action line required interference. Protima.²³ showed in her study that 88 percent cases outside action line needed LUCS Rahman.⁹ showed that 23.3 percent cases outside alert line and 100 percent cases outside action line needed LUCS. Thees differences in observation in different studies may be due to inadequate maternal and fetal monitoring system crossing alert and action line which was considered end point of observation.

Non progressive labour is one of the common complication in labour and is primarily treated by augmentation. The rate

of spontaneous delivery was more who did not require any augmentation. On the other hand 80 percent cases of LUCS needed augmentation. This is consistent with the study by Rahman.⁹ who showed in her study that 90 percent cases of LUCS needed augmentation. In this study, 84.1 babies cried spontaneously, 12.9 percent cried after resuscitation and only 3 percent needed admission to neonatal care unit. There was no stillbirth. in a study by Nargis.⁸ 71.65 percent cried spontaneously, 21 percent cried after resuscitation and 7.09 percent needed admission to neonatal care unit and in a series by Rahman.⁹ these were 76.¹⁰ and 14 percent, respectively. The study showed that there was a significantly lower incidence of admission to neonatal care unit and in a series by Rahman.⁹ these were 79.¹⁰ and 14 percent, respectively. The study showed that there was a significantly lower incidence of admission to neonatal care unit due to poor APGAR score at birth. This may be due to strict monitoring, timely intervention and improved neonatal resuscitation setting in this institution.

The frequency of neonatal resuscitation was higher for the group who crossed the alert line (27.8%) or action line (23.1%) than the group which remained within alert line (8.6%). In dujardin's¹⁰ series, neonatal resuscitation among women who crossed the alert line was 4 times more likely, which comply with the present study.

Conclusion:

The study has shown that using the partograph can be highly effective in reducing complications from prolonged labour for the mother and for the newborn. Prolonged labour, augmented labour, caesarian section, operative interventions, neonatal morbidity and intrapartum fetal deaths were reduced with the use of partograph. Easy and early recognition of poor progress of labour with the use of partograph and the prevention of prolonged labour significantly reduce the risk of PPH and sepsis and eliminate obstructed labour, uterine rupture and thereby reduce the maternal mortality. In addition, it reduced the workload of record keeping traditional way.

References:

1. WHO. Safe motherhood. Mother-baby package: a road map for implementation in countries. Geneva: World Health Organization, 1993: 28
2. WHO. Reduction of maternal mortality. WHO/UNFPA/UNICEF? World Bank statement.
3. WHO. Obstructed labour module. WHO/FRH/MSM/96.6 Geneva: World Health Organization, 1996: 12.
4. Riedman EA. The graphic analysis of labour. Am J obstet Gynecol 1994;64: 1568-77.
5. Philpott HR. Graphic record in labour. Br Med J 1972; 16-35.
6. Parveen Z. Outcome of labour in relation to cervical dilatation at admission [dissertation]. Dhaka: Bangladesh College of Physicians and Surgeons, 2003
7. NIPORT. Bangladesh demographic and health survey, 1993-94. National Institute of Population Research and Training and Health Survey, Macro International Ltd. p. 104.
8. Nargis N. Partographic assessment of labour in DMCH [dissertation]. Dhaka: Bangladesh College of Physicians and Surgeons, 2003
9. Rahman M. Use of the partogram in obstetric care [dissertation]. Dhaka: Bangladesh College of Physicians and Surgeons, 2004.
10. Dujardin B, Boutsen M, De Schamplere. Oxytocics in developing countries. Int J Gynaecol Obstet 1995; 50:243-51.
11. Siddiquee N, Raliman S, Ara I. Labour outcome of primigravidae in military hospital a study of 450 cases.