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RESEARCH ARTICLE

ROLE OF WHO LABOR CARE GUIDE IN DECREASING PRIMARY CAESAREAN SECTION RATE IN LOW RISK PREGNANT WOMAN

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Abstract

In recent times World Health Organization Labour Care Guide (LCG) aimed to improve the quality of care for women during labor and childbirth. The World Health Organization (WHO) has long recommended that a woman in labor should be monitored by a skilled healthcare provider using a partograph, a paper clinical tool for documenting observations and helping make clinical decisions. This is an observational study among 100 low risk pregnant women. The study concluded that WHO modified partograph serves well in terms of monitoring of labour progression, comparable to WHO labour care guide if we can incorporate second stage monitoring and supportive care.

Introduction:-

Half a million women lose their lives every year because of pregnancy related complications. Obstructed labour and ruptured uterus contributes up to 70% of maternal mortality. Early detection of abnormal progress and prevention of prolonged labour can significantly reduce it[1]

Obstetrical practices differ extensively across the world and also within individual health systems. This disparity exists even though we still have a background of alarmingly high maternal mortality rates throughout most of the developing world and a rising caesarean section rate in the developed world, but with little evidence that fetal outcome is better for it.[2,3,4]

India striving for a better outcome on the obstetric platform has many patients facing life threatening complications with obstetric blood loss in the immediate postpartum period being the most common but the most feared misfortunes namely obstructed labor and the rupture of the uterus contributes to over two third maternal losses in neglected labour.[5]

Early detection of abnormal progress and prevention of prolonged labour can significantly reduce it.Tools and techniques to monitor labour thus play an important role in saving women's lives. The partogram or partograph is an inexpensive tool to provide a continuous pictorial overview of labour and is essential to monitor and manage labour. It is a single sheet of paper where all information related to labour is obtained. It is a practical device in a busy labor room with many cases but limited personnel to screen the abnormal labour.With its use, there is no need to record labour-events repeatedly. It predicts deviation from normal proqress of labor and proper intervention can be done in time.It facilitates handover and responsibility and accountability of the person conducting labour.[6]

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In 1994, the World Health Organization (WHO) devised the composite partograph which includes graphical representation of latent phase of 8 hours followed by active phase with alert line and action line. As there is always a risk of inappropriate interventions if undue attention is paid to the latent phase, subsequently in the year 2000 the WHO produced the modified partograph where the latent phase was removed, to make it simpler and easier to use.

In February 2018, the WHO published a consolidated set of recommendations on intrapartum care for a positive childbirth experience. The recommendations include new definitions of the duration of the first and second stages of labour and provide guidance on the timing and use of labour interventions to improve the health and well-being of women and their babies. In order to implement these recommendations, in 2020 the WHO proposed the Labour Care Guide which replaces the modified WHO partograph. The Labour Care Guide is a labour monitoring tool which is now inconsistent with the latest evidence about labour duration, triggers for clinical interventions and the importance of respectful maternity care. Similarities between the WHO Modified partograph and the Labour Care Guide.

1. Graphical representation of the progress of labour in terms of women's cervical dilatation and descent of the fetal presenting part, against time
2. Formal regular recording of important clinical parameters describing the wellbeing of the woman and baby

Differences :

WHO Modified partograph	WHO Labour Care Guide
Active phase starts from 4 cm of cervical dilatation	Active phase starts from 5 cm of cervical dilatation
Fixed 1cm/hr 'alert' line and 'action' lines	Evidence based time limits at each cm of cervical dilatation
No second-stage section	Intensified monitoring in second stage
No recording of supportive care interventions	Explicit recording of labour companionship, pain relief, oral fluid intake and posture
Records strength, duration and frequency of uterine contractions	Records duration and frequency of uterine contractions
No explicit requirement to respond to deviations from expected observations of any labour parameter, other than cervical dilatation alert and action lines	Requires deviations to be highlighted and the corresponding response to be recorded by the provider

The aim of the study was to know the impact of WHO labor care guide in decreasing primary caesarean section rate in low risk pregnant women.

Primary objective:
To determine c- section rate in low risk pregnant women with WHO labor care guide

Secondary objective:
To compare maternal and perinatal outcome in low risk pregnant women following WHO labor care guidr and Modified partograph

Methodology:-

This is an observational study among 100 low risk pregnant women in a tertiary care hospital comparing WHO labor care guide with WHO modified partograph during the period of April 2023 to July 2023 in NRI Institute of Medical Sciences ,Vishakaptnam.

In this study pregnant women were divided into two groups with 50 pregnant women in each group.
Group I – WHO modified partograph used
Group II – WHO labour care guide used

Inclusion criteria:
1.Age 18 to 35 years
2.Primigravida and multigravida women admitting with spontaneous labour in active phase
3.With a live, singleton pregnancy with cephalic presentation having normal vital signs
4.Vaginal birth was anticipated

5.No uterine scar
6.Willing to participate in study

Exclusion criteria:
1.Patients with induced labour
2.In patients whom trial labour given outside the hospital
3. Pregnant women admitted in 2nd stage of labour
3.Women with any pregnancy related complications
4.Antenatal women with medical disorders like Diabetes mellitus/Hypertension/Anaemia/Heart diseases/Autoimmune diseases.
5.Women with Preterm labour, Premature rupture of membranes,Contracted pelvis,Big baby

Study was approved by institutional human ethics committee. Those patients who are willing to give consent were included in the study and Informed and written consent was obtained from all the study participants .

The risks and benefits involved in the study and voluntary nature of participation were explained to the participants before obtaining consent. Confidentiality of the study participants was maintained.

Methodology:-

All the pregnant women admitted in labour room of department of OBG, NRI Institute of Medical Sciences with spontaneous onset of labour, brief history taken and examination was done.

The detailed menstrual history regarding previous menstrual cycles either regular or irregular was noted. Gestational age was determined by means of last menstrual period (LMP) using Naegele's formula, obstetric ultrasonography (in cases where LMP was unknown or cycles were irregular) or both.

A thorough general physical examination was done with due importance to pallor, icterus, cyanosis and pedal edema. The respiratory and the cardiovascular systems examination were done.

Detailed obstetric examination was done and per speculum examination was done for those patients with a history of leak per vaginum. Pelvic examination was done to know the stage of labour by assessing cervical dilatation and effacement, presence of intact membranes, the presenting part and its station and rule out cephalopelvic disproportion. Informed consent from women fulfilling the inclusion and exclusion criteria was taken. All the women were randomly allocated into two study groups. Partograph and WHO Labor care guide was filled by the residents posted in labour room. Residents are given instructions regarding plotting of the partographs(Group1) and WHO Labor care guide(Group 2)

Analysis done for the study variables like Age, parity, mode of delivery,indication of LSCS,Duration of labor, NICU admission, incidence of PPH.Descriptive analysis was carried out by mean and standard deviation for quantitative variables, frequency and proportion for categorical variables. Statistical analysis was made with IBM SPSS 16.0 software and P value of <0.05 was considered significant. One way ANOVA test is used for Continuous variables and Pearson's Chi-squared test is used for Categorical variables.

Results:-

In current study in group 1 (modified partograph) 32(64%)pregnant belong to age group of 18 to 25 years followed by 16 (32%)women belong to age group of 25 to 30 years and 2 (4%) belong to age group of 30 to 35 years. In group II (WHO Labor care guide), 27(54%) belong to age group of 18 to 25 years followed by 19(38%) women belong to age group of 25 to 30 years and 4(8%) belong to age group of 30 to 35 years(Table 1)(p value=0.51,not significant)

In group I(modified partograph) 17(34%) of women were primi and 33(66%) women were multigravida whereas in group II (WHO Labor care guide) 19 (38%) of women were primi and 31(62%)women were multigravida (p value =0.65) and is not significant(Table 2).

In group I(modified partograph)39(78%) pregnant women had normal vaginal delivery, 11(22%)had LSCS and none of them underwent instrumental delivery whereas in group II(WHO Labor care guide) 42(84%) of pregnant women had normal vaginal delivery,7(14%) had LSCS and 1(2%)had instrumental delivery (p value=0.37) and is not statistically significant (Table 3).

In group I (modified partograph) among 11 pregnant womenwho underwent LSCS, 5(45.4%)were due to fetal distress and 3(27.2%)due to failure to progress and 3 (27.2%) due to cephalopelvic disproportion, in group II(WHO Labor care guide) among 7 women underwent LSCS , 1(14.2%) due to failure to progress in second stage of labor and 4(57.1%) due to fetal distress, and 2 (28.5%) were due to maternal exhaution (p-value=0.41) and is not statistically not significant(Table 4).

In group I (Modified partograph)100% of women who had vaginal delivery were delivered within 8 hours of duration of active labor(i.e., after 4 cm dilatation) In group II(WHO Labor care guide) 41 (97.6%)women delivered within <8 hours duration of active labor(i.e., after 5 cm dilatation) and one patient delivered after 9 hrs 30 min duration of active phase labor and is not statistically significant(p value=0.33)(Table 5).

In group I(Modified partograph) 1 women had atonic PPH whereas in group II(WHO Labor care guide) 2 women had atonic PPH and none of them had traumatic PPH, and is statiscally not significant in both groups(Table 7).

In group I(Modified partograph) among 14 neonates admitted in NICU 4(28.5%) were due to meconium-stained liquor, 5(35.7%) were due to respiratory distress and 3(21.4%) were due to delayed cry and 2(14.2%) were with low birth weight whereas in group II(WHO Labor care guide) among 9 neonates admitted in NICU,1(11.1%) was due to meconium stained liquor, 8(88.8%) were due to respiratory distress and no one with delayed cry and low birth weight(p value=0.08,not significant)(Table 6).

Discussion:-

There are no studies published so far in India or elsewhere comparing WHO Labour Care Guide and the WHO Modified Partograph.

A study was conducted by Joshua et al[7] aim to evaluate the usability, acceptability and feasibility of Labour Care Guide among maternity care practitioners in clinical settings. The study concluded that the highest practitioner satisfaction was reported for the supportive care monitoring section which encourages the consistent practice of respectful maternity care during labour and childbirth. Practitioners across all sites also emphasized that using the LCG guided them to provide supportive, person-centered labour care whether or not they had been familiar with WHO guidance on supportive care and strengthen the relationships between health practitioners and women.

Important limitation of the modified partograph is that it do not include 2nd stage labour monitoring. Increased uterine activity compounded by maternal expulsive efforts make the 2nd stage of labour a particularly critical time and reduced vigilance at this time may lead to poor outcomes. This deficit has been addressed in the Labour Care Guide with closer attention to progress and the well being of both women and baby being required during 2nd stage.

However, a study was conducted by Dr. Soumya et al[8], evaluate pattern of labour progress in Indian origin female. The mean age of the study population was 24.43 years with a range of 18 to 35 years. Maximum number of females were nulliparous that is 79.1%. Mean duration of active phase was 3.66 hours. Mean duration of 2nd stage of labour was 18.4 minutes. Mean rate of cervical dilatation in active phase of labour was 1.42cm/ hour. In our study mean age of the study population was 24.24 years with a range of 18 to 35 years, and maximum number of females were multigravida that is 64 % and mean duration of labor of labor including active phase and second stage of labor was 4.07 hours and there was no significant maternal complications and fetal complications in both groups (p value= 0.08, not significant)

In our study, all the women who underwent normal vaginal delivery were delivered within 8 hours after active phase ,only one patient had more than 8 hours in women who was included in WHO labor care guide.Although the duration of labor is individualized in WHO labor care guide, Indian parturient women usually progress fast i.e., within 8 hours of entering into active phase of labor.

Limitation:
Single centered study and less sample size

Table 1:- Distribution according to the age.

AGE	Modified partograph n=50	WHO LCG n=50
18-25 Yrs	32 (64%)	27 (54%)
25-30 yrs	16 (32%)	19 (38%)
30-35 yrs	2 (4%)	4 (8%)
TOTAL	50(100%)	50 (100%)

Chi-square test =1.35, p- value =0.51,Not significant

Table II:- Distribution according to parity.

Parity	Modified Partograph n=50	WHO Labor guide n=50
Primi	17 (34%)	19 (38%)
G2	26 (52%)	25(50%)
G3	6 (12%)	3 (6%)
G4	1 (2%)	2 (4%)
G5	0	1 (2%)
Total	50 (100%)	50 (100%)

Chi-square test = 2.46, p-value= 0.65,Not significant

Table III:- Distribution according to mode of delivery.

Mode of delivery	Modified partograph n= 50	WHO LCG n=50
NVD	39(78%)	42(84%)
LSCS	11(22%)	7(14%)
Instrumental delivery	0	1 (2%)
TOTAL	50	50

Chi-square test= 2, p-value =0.37, Not significant

Table IV:- Distribution according to the indication of LSCS.

	Modified Partograph n=11	WHO Labor guide n=7
Fetal distress Meconium stained liqour/ Abnormal CTG	**5** (45.4%) 5 0	**4** (57.1%) 3 1
Failure to progress	3 (27.2%)	1 (14.2%)
Maternal Exhaution	0	2(28.5%)
CPD	3 (27.2%)	0

TOTAL	11 (100%)	7 (100%)

Chi-square test=5.06, P-value= 0.41,Not significant

Table V:- Distribution according to the duration of labour in normal vaginal delivery.

	Modified Partograph n=39	**WHO Labor guide n=42**
<8 hrs	39(100%)	41(97.6%)
8 - 12 hrs	0	1(2.38%)
12-16 hrs	0	0
> 16 hrs	0	0
Not known	0	0
TOTAL	39 (100%)	42(100%)

Chi-square test=0.94, P-value = 0.33, Not significant

Table VI:- Indication of NICU admission.

	Modified Partograph n=14	**WHO Labor Guide n=9**
Meconium stained liquor	4 (28.5%)	1 (11.1%)
Respiratory distress	5 (35.7%)	8(88.8%)
Delayed cry	3 (21.4%)	0
Low birth weight	2 (14.2%)	0
Total	14(100%)	9 (100%)

Chi-square test= 6.72, P-value = 0.08,Not significant

Table VII:- Distribution according to the incidence of PPH.

	Modified Partograph n=50	**WHO Labor guide n=50**
Atonic PPH	1 (100%)	2 (100%)
Traumatic PPH	0	0
Others	0	0
Total	1 (100%)	2 (100%)

No statistical test is applicable to this dataresults are 100% in both the categories

Conclusion:-

According to our study in Indian parturient women, WHO modified partograph serves well in terms of monitoring of labour progression, comparable to WHO labour care guide if we can incorporate second stage monitoring and supportive care.Especially in rural setup healthcare workers need to be trained to follow WHO labor care guide which is major limitation. Further research with multi centered studies and large sample size is needed to come to a conclusion whether WHO Labour Care Guide is more helpful than the modified partograph in Indian parturient women.

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