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Management of Labour and Obstetric Outcome of Pregnant Women in Latent Phase versus Active Phase of Labour at the Time of Admission

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Abstract: ***Background: Women present to the labour ward in either latent phase or active phase of labour, which is the basis of decision of the line of management that is offered to the patient. The outcome of the fetus and maternal health is influenced by the intervention taken by the gynecologist. Aim: To study the patients in both active and latent phase of labour at the time of admission, who are left for spontaneous delivery and in whom induction of labour is done and correlate the same with mode of delivery and fetal outcome. Materials and methods: This was an observational, prospective study and was conducted in the Department of Obstetrics and Gynaecology of a Medical College and Tertiary Health Care Centre (Hospital). It was done from March to June 2019.Data was collected and then analysed by SPSS version 17. Results: Two hundred case notes of low risk pregnant women were collected of which 100 belonged to active phase and 100 to latent phase of labour. Key interventions including induction with prostaglandins and caesarean section were significantly higher in the latent phase group than the active phase group. [21% versus 3%, p < 0.05] and [47% versus 6%, p < 0.05] respectively. Spontaneous vertex delivery was higher among pregnant women admitted initially in active phase than in latent phase groups [88% versus 47% (p < 0.01)]. There were more women in the active phase group who sustained genital tract tear and postpartum haemorrhage than in the latent phase group [44% versus 36%, (p < 0.05)] and 28% versus 10% (p < 0.05) respectively. It was also observed that the mean rank of APGAR score was better in children of Active phase patients (112.63) as compared to latent phase group (87.50) (p < 0.001). NICU admissions were found in 25 children born to latent group patients whereas there were 3 NICU admissions in active phase group. Conclusion: Patients admitted in latent phase of labour are subjected to more intervention which affects the mode of delivery, maternal complications and fetal outcome. There is a need to device a protocol for management of patients admitted in latent phase of labour and to reduce the unnecessary interventions.***

Keywords: Active phase of labour, latent phase of labour, intervention, induction of labour., misoprostol, prostaglandins, oxytocin, artificial rupture of membranes

1. Introduction

The first stage of labour is defined as the time from the onset of labour to the complete dilatation of the cervix, and is subdivided in to active and latent phases. The latent phase is the time when the cervix starts to efface and dilate upto 3 cm. While the active phase begins, the rate of cervical dilatation accelerates, which occurs at 4 cm to 10 cm.[(1)]

There is the WHO Modified Partograph for guiding the course and management of active phase of labour, there exists no such protocol for managing the latent phase of labour.

Latent phase is a sensitive period that may influence the active phase of labour, the expulsive phase of labour and the requirement of intervention during and after the second stage of labour.[(2)]

Patients are usually admitted to the hospital in the first stage of labour. Patients coming with labour pain are usually admitted to the labour ward. However, they may be in latent phase and may take up hours before they progress to the active phase. They may be subjected to more interventions than the patients who are admitted during the active phase.

When a patient is admitted, a doctor should set reasonable expectations for labour to progress to avoid unnecessary interventions and anxiety.Routine medical interventions in labour is a worldwide concern.[(3)] Labour is considered by many as a physiological process and should not be interfered with, but only supported. There has been a study earlier which shows that management of early labour has an impact on maternal and neonatal outcomes, in which women who are admitted in the active phase of labour at 4 cms or more cervical dilatation experience less interventions and complications than those admitted in the latent phase of labour with 3 cms cervical dilatation or less.[(4)]

Delayed-admission in labor may help to avoid premature and unnecessary intervention in women with prolonged latent phase. Commonly, prolonged latent phase may be misdiagnosed as a protraction or retraction disorder. Prolonged latent phase is associated with a higher risk of subsequent labour abnormalities, such as post-partum hemorrhage, chorioamnionitis and neonatal admission to the intensive care unit and long hospital stay.[(5)]

Factors that may affect duration of the latent phase include unfavourable cervical condition, false labour, sedation and analgesia/anesthesia.[(6)]. Women presenting in the latent phase were taken for more caesarean deliveries and active phase arrests of labour than women presenting in the active labour. It is uncertain whether inherent labour abnormalities result in latent phase presentation and subsequent physician intervention or whether early presentation and subsequent physician intervention are the causes of labour abnormalities.

2. Methodology

This was an observational, prospective study and was conducted in the Department of Obstetrics and Gynecology of Dhiraj Hospital.

Sample Size: 200 patients

Duration: March to May 2019

Data was collected and then analysed by SPSS version 17.

Inclusion Criteria:

- Full term singleton pregnancy, cephalic presentation.
- Patients with no medical problems and/or obstetrical complications.

Exclusion Criteria:

Associated medical conditions like diabetes mellitus, epilepsy, anemia, hypertension, preterm labour, previous caesarean section, multiple pregnancies, malpresentation and infections.

3. Results

The 200 women in the study were divided into 2 groups of 100 each. Group A consisted of women who presented to the labour room in latent phase of labour, while group B consisted of women who presented to the labour room in active phase of labour.

The Obstetric and Socio-Demographic characteristic of parturients is given in table no. 1

Table 1: Obstetric and socio-demographic characteristic of parturients

Characteristics	*Latent Phase*	*Active Phase*
Age		
<20	14	11
20-30	80	85
>30	6	4
Level of Education		
Primary	30	17
Secondary	70	83
Gravidity		
Primigravida	68	40
Multigravida	32	60
Parity		
0	68	50
2-4	31	47
>5	1	3

Two hundred case notes of low risk pregnant women were collected of which 100 belonged to active phase and 100 to latent phase of labour. Key interventions including induction with prostaglandins and caesarean section were significantly higher in the latent phase group than the active phase group. [21% versus 3%, $p < 0.05$] and [47% versus 6%, $p < 0.05$] respectively. Spontaneous vertex delivery was higher among pregnant women admitted initially in active phase than in latent phase groups [88% versus 47% ($p < 0.01$)].

Characteristics	Latent Phase (n=100)	Active Phase (n=100)
Oxytocin Use	11	27
Prostaglandins	21	3
CS		
Yes	37	6
No	63	94
Fetal Distress	28	5
CPD	4	2
Non Progress	6	1
Mode of Delivery		
Spontaneous VD	56	88
Assisted VD	7	6
CS	37	6

Characteristics	Latent Phase	Active Phase
Maternal Complications		
Perineal Tears		
Yes	44	36
No	56	64
PPH		
Yes	22	10
No	78	90
APGAR Scores		
<=7	32	10
>7	68	90
Neonatal ICU Admission		
Yes	22	3
No	78	97

There were more women in the LATENT phase group who sustained genital tract tear and postpartum haemorrhage than in the ACTIVE phase group [44% versus 36%, ($p < 0.05$)] and 28% versus 10% ($p < 0.05$) respectively. It was also observed that the mean rank of APGAR score was better in children of Active phase patients (112.63) as compared to latent phase group (87.50) ($p < 0.001$). NICU admissions were found in 25 children born to latent group patients whereas there were 3 NICU admissions in active phase group

4. Discussion

The need to limit clinical or surgical intercessions among pregnant ladies in labor is a challenge in the vast majority of clinical settings. This has prompted ceaseless discussion among researchers between regular labor and the techno-clinical model of labor.

The current study indicates that the intervention in the latent phase of laboris increased by 47% and it is 21% in case of induction with the prostaglandins whereas in active phase of labor, the intervention for the caesarean section and induction with prostaglandin is 6% and 3% respectively.Most women in both active and latent phase were of age 20-30 years and had secondary education or higher.

This has been well documented that the intervention is increased in case of latent phase of labor. However, there is no protocol for the patients admitted in the latent phase. [7]J. Maghoma et al had found Prolonged latent phase is associated with increased risks for obstetric intervention and poor fetal outcome. The optimal management of prolonged latent phase is still unknown and requires further study by means of randomised controlled trials.[8] ClotridaChuma et al had found that the intervention in latent phase is more compared to the active phase. As the intervention is needed more in latent phase but as per the the current study there are more cases of genital tear and postpartum haemorrhage in the active phase.

Like the investigations done by Bailit JL, et al and Albassam

AN et al [11,12], there was no factual huge contrast in fetal results as far as APGAR score and confirmation in Neonatal Intensive Care Unit between newborns delivered by ladies in latent contrasted with those newborns delivered by ladies in active period of work. Since there was no distinction in fetal results between the both groups one may contend that a subset of latent phase group received unnecessary interventions.

So new intervention in latent phase for the patients should be made available. The latent phase candidates were mainly primigravida (68%) as compared to active phase which were mainly multigravida (60%).

5. Conclusion

As per the results we conclude that the patients admitted in the active phase of labour needs less intervention than the patients in the latent phase of labour. As the mode of intervention is more in the latent phase of labour therefore it will effect affects the mode of delivery, maternal complications and fetal outcome. There is a need to device a protocol for management of patients admitted in latent phase of labour and to reduce the unnecessary interventions.

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