

ACTIVE MANAGEMENT OF LABOUR IN PRIMIGRAVIDA : A PROSPECTIVE STUDY

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SUMMARY

Active management of labour was carried out at Military Hospital Saugar and Military Hospital Patiala from May 1989 to August 1993. 200 normal primigravidas at term in established labour underwent active management. The outcome of labour was compared with equal number of properly matched primigravidas who were left to the conventional labour ward protocol of wait and watch policy. Inefficient uterine action was the most common abnormality which responded well to the management of labour by amniotomy with or without oxytocin infusion. Acceleration of labour helped in correction of malrotation of foetal head and elimination of suspicion of border line cephalo-pelvic disproportion. In the study group the labour was significantly shortened, the average duration was 6.5 hours in comparison to 13.4 hours in the controls. Majority of women i.e. 97% delivered within 12 hours in the study group as compared to 32.5% in the control group, and this difference is statistically highly significant ($P < 0.001$). The rate of normal delivery was more in the study group (90%) in comparison to that in the controls (74.5%). The rate of common complications was also less in the study group. The various complications encountered in the study and control group were : malposition (5% vs 14.5%), suspected cephalo-pelvic disproportion (2% vs 6%), foetal distress (6% vs 18%). Strikingly there was no hypotonic uterine dysfunction, maternal distress, and perinatal death in the study group, while there was 25.5% incidence hypotonic of uterine dysfunction, 8% of maternal distress and 2.5% of perinatal mortality among the controls. We did not find any difference in the occurrence of neonatal jaundice and infection between the two groups.

Thus active management of labour is simple, safe, effective. But this needs proper understanding of the labour process and careful partographic monitoring by trained labour ward staff.

INTRODUCTION

Primigravidas often encountered prolonged labour. At times this may lead to confusion and concern besides posing a special challenges to the attending obstetricians, because of its associated risk of increased perinatal & maternal morbidity & mortality.

Hellman and Prystomsky (1952) have conclusively proved that in primi, the perinatal loss mounts rapidly when the first stage of labour exceeds 20 hours and second stage 2 hours. D'Driscoll and Strong showing slow progress with an aim to deliver them within 12 hours. Now many institutions have adopted the policy of active management of labour with a view to reduce the maternal and perinatal mortality and morbidity (Dalal and Kalamkar, 1987).

The present study was carried out with an objective to assess the effectiveness and safety of the active management of labour in primigravidas and to compare the outcome with a matched control group to ascertain its superiority/benefits in a Army hospital set up.

MATERNAL AND METHODS

Between May 1989 and August 1993, a prospective study on active management of labour in primigravidas was carried out at Military Hospital Saugor and Military Hospital Patilala. 400 primigravidas at term pregnancy were equally divided into a study and control group.

Primigravidas admitted with labour pains were included in the study, in they satisfied the following criteria :-

- (1) Those obstetrically & medically normal.
- (2) Those statistically well matched for both groups.
- (3) Those in established labour with 3 cms of cervical dilatation.

The time of admission was recorded as zero hour. All patients had close clinical monitoring of vital parameters, foetal heart rate and uterine contractions. No sophisticated equipment was used. Cervical dilatation was noted on admission and at two hourly intervals thereafter. The progress of labour was recorded in a partogram. The normal limit for various phases were taken as per Friedman's curve (1967). The slow and dysfunctional labour was detected by using the criteria suggested by Studd Philpott (1972). The labour was actively managed by standard protocol of amniotomy and oxytocin infusion in the study group. The start with injection oxytocin, 2.5 IU was added to 500 ml of 5% dexrose solution and the drip was set at 15 drops per minute. The drip rate was escalated by 15 drops half hourly till good uterine contractions 3-4 contractions per 10 minutes lasting for 45 to 55 seconds were achieved. The oxytocin drip was closely supervised by well trained oxytocin & partogram oriented nursing staff. Sedation was only used in apprehensive cases.

The progress of labour was noted by repeating vaginal examination every two hourly.

A standard policy of conventional management of spontaneous labour was followed in the controls.

A appropriate intervention was insti-

tuted as and when any indication arose during labour in both the groups. Third stage was actively managed. Apgar score was recorded to assess foetal well being. The oxytocin drip even with higher concentration was continued for another one hour after delivery to prevent atonic PPH. The mother and neonates were carefully followed up till their discharge from the hospital.

The duration of labour, mode of delivery, maternal and foetal complications were recorded in a pretested proforma; this permitted a comparison between the two groups. The statistical significance between the two groups was analysed through z-test.

RESULTS

400 apparently normal primigravidas at term pregnancy in established early labour where vaginal deliveries were anticipated were allocated randomly to the study & the control group of 200 cases

each.

The two groups were well matched in respect to maternal age, maternal height, gestational period, suspected border line cephalopelvic disproportion, accipito-posterior position, estimated foetal weight and Bishop's score. (Table I)

Duration of labour is depicted in Table II. The mean duration of labour was only 6.5 hours in the study group as compared to 13.4 hours in the control group. Again the occurrence of delivery within 12 hours was 97% in the study group as compared to only 32.5% in the control group. Both the observations were statistically significant ($P < 0.05$).

The prevalence of hypotonic uterine dysfunction (prolonged labour) and maternal distress were 25.5% and 8% respectively in the control group as compared to none in the study group reflecting a statistically significant difference ($P < 0.05$). On the other hand, hypertonic uterine contractions was seen in 2.5%. In

Table I
Characteristics of Patients

Characteristics	Mean Value	
	Study Group	Control Group
(1) Maternal Age (Yaeer)	24.5	24.6
(2) Maternal Height (Cms)	152.5	150.5
(3) Gestational Period (Weeks)	38.5	38.0
(4) Suspected Border line cephalo pelvic disproportion (Percent)	6.8	6.0
(5) Malpositions (Percent)	14.8	14.5
(6) Estimated Foetal Weight (Kgs)	2.8	2.7
(7) Bishop's Score	6.5	6.8

Table II
Duration of Labour

Duration in Hours	Study Group		Control Group	
	Number	Percentage	Number	Percentage
0 - 4	1	0.5	-	-
5 - 8	175	87.5	17	8.5
9 - 12	18	9.0	48	24.0
13 - 16	6	3.0	33	33.0
17 - 20	-	-	57	28.5
21 - 24	-	-	12	6.0
Total	200	100.0	200	100.0

the study group & in none is the control group complications of labour such as foetal distress, persistent occipito posterior, retained placenta and post partum hemorrhage were almost double in the

control group but they were not statistically significant (Table III).

Ninety percent had normal delivery in the study group as compared to 74.5% cases in the control group. The rate of

Table III
Complications of Labour

Complications	Study Group		Control Group	
	Number	Percentage	Number	Percentage
Prolongation of labour				
(a) Hypotonic Uterine Functions	-	-	51	25.5
(b) Malpositions	10	5.0	29	14.5
(c) Suspected Border Line Cephalo-Pelvic Disproportion	4	2.0	12	6.0
Hypertonic Uterine Function	5	2.5	-	-
Maternal Distress	-	-	16	8.0
Foetal Distress	12	6.0	36	18.0
Retained Placenta	2	1.0	5	2.5
Postpartum Haemorrhage	7	3.5	11	5.5

Forceps/vacuum delivery was 7.5%, in the study group as compared to 17.5% in the control group. Moreover the incidence of caesarean section was only 2.5% in the study group in comparison to 8% in the control. The overall rate of surgical intervention in the control group was significantly higher than in the study group ($P < 0.05$) (Table IV).

Further, for malrotation of foetal head, Vacuum was used in 3% cases and Caesarean section in 2% cases in the study group and 8.5% and 6% respectively in the control group, three times higher incidence in the control group. Similarly, the rate of caesarean section due to suspected border line cephalo-pelvic disproportion was only 2% in the study group as against 6% in the control group. The incidence of forceps application for foetal distress was similar in the both groups but the rate of Vacuum extraction was almost three times in the control group. The details are (Table V).

The frequency of birth asphyxia was 6% in the study group as compared to 18% in the control group. There were 1% still births and 1.5% neonatal deaths

in the control group and none in the study group. There was no significant difference in the prevalence of neonatal jaundice infection between two groups (Table VI & Table VII).

DISCUSSION

Labour is a dynamic phenomenon. Active management of labour not only shortens the duration of labour, lowers surgical intervention and improves maternal and perinatal outcome but also relieves anxiety, apprehension and exhaustion in the doctors, patients their relatives and nurses exponentially.

The policy of active management is thus confined only to the primigravida where the need is great and the risk is small. The policy is not applied in patients with malpresentations, cephalo-pelvic disproportion and significant obstetric abnormality.

In the present series, 97% of primigravida delivered within 12 hours & the mean duration of labour was only 6.5 hours. The same conclusion has been drawn by Philpott and Castle (1972). Tripathy and Raut (1987), Varawalla and Jusawalla

Table IV
Mode of Delivery

Mode of Delivery	Study Group		Control Group	
	Number	Percentage	Number	Percentage
(1) Normal	180	90.0	149	74.5
(2) Forceps/Vacuum	15	7.5	35	17.5
(3) Caesarean	5	2.5	16	8.0
Total	200	100.0	200	100.0

Table V
Indications for Operative Interventions

Indications	Study Group				Control Group			
	Forceps %	Vacuum %	LSCS %	Total %	Forceps %	Vacuum %	LSCS %	Total %
Prolongation of labour								
(a) Hypotonic Uterine Function	-	-	-	-	5.0	12.5	8.0	25.5
(b) Malpositions	-	3.0	2.0	5.0	-	8.5	6.0	14.5
(c) Suspected Border Line CPD	-	-	2.0	2.0	-	-	6.0	6.0
Hypertonic Uterine Function	-	-	1.5	1.5	-	-	-	-
Foetal Distress	2.0	3.0	1.0	6.0	2.5	9.5	6.0	18.0
Maternal Distress	-	-	-	-	1.5	2.0	4.5	8.0

Table VI
Apgar Score

Apgar Score at 5 Minutes	Study Group		Control Group	
	Number	Percentage	Number	Percentage
0 -3 (Severe Depression)	2	1.0	7	3.5
4 - 6 (Mild Depression)	10.0	5.0	29	14.5
9 - 10 (No Depression)	188	94.0	164	82.0
Total	200	100.0	200	100.0

(1989), and Gupta et al (1990).

The results of this study indicate that there is a sharp decline in the rate of caesarean section & instrumental (Forceps & Vacuum deliveries in the actively managed group). This is broadly in agreement with findings of Turner

et al (1988) Varawalla and Jussawalla (1989) and Gupta et al (1990).

In the present study, there was no significant difference in the occurrence of perinatal complications between the two groups. Also, there was no increased incidence of neonatal infection in the

Table VII
Perinatal Outcome

Perinatal Complications	Study Group		Control Group	
	Number	Percentage	Number	Percentage
(1) Still Birth	-	-	2	1.0
(2) Birth Asphyxia	12	6.0	36	18.0
(3) Neonatal Jaundice	11	5.5	8	4.0
(4) Neonatal Infection	4	2.0	6	3.0
(5) Neonatal Death	-	-	3	1.5

control groups in contrast to previous studies by other authors. This probably was due to the clean & aseptic environment in the Army Hospitals. Even, Varawalla et al (1989) & Gupta et al (1990) have recorded considerably lesser number of perinatal complications in their study groups.

In summary, although the active management of labour is a simple, safe, effective & most gratifying obstetric procedure, it may even cause problem if improperly supervised. This no doubt needs proper understanding of labour process and careful partographic monitoring by well trained labour ward staff who can also offer personalised care to patients in the critical hours of labour.

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