

THE ACTIVE MANAGEMENT OF LABOUR IN PRIMIGRAVIDA EFFICACY OF VARIOUS MODES

By

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Introduction

Active management of labour is a part and parcel of modern obstetrics. It is the skill of obstetrician how actively he or she manages labour and how early a woman gets rid of her agonies especially in primigravidae.

Prolonged labour presents a picture of mental anguish and physical morbidity which often leads to surgical intervention and may produce a permanent revulsion to child birth, expressed by the mother as voluntary infertility. Further prolonged labour leads to increased perinatal morbidity and mortality.

In modern obstetrics O'Driscall *et al* founded the concept of active management of labour in 1973.

The present study was carried out to find out the effect of amniotomy, oxytocin and epidosisin used alone or in combination on duration of labour and its outcome.

Material and Methods

309 primigravidae were subjected to active management of labour as compared to 75 control cases, admitted to labour ward of S.N. Hospital, Agra.

The patients studied had to fulfill certain criteria. Age of the patients ranged between 16-35 years with gestational age

between 36-42 weeks. All had vertex presentation. Patients with cephalo-pelvic disproportion, placenta praevia, malpresentation, long period of sterility or any medical complication were excluded from study. The diagnosis of labour was the most important aspect of decision before selecting a case. Those with cervical dilatation of 3.0 cms or more were taken for the study.

Partogram was maintained from time of admission to the time of delivery of baby. The progress of labour was determined by cervicograph, nature of uterine contractions and descent of head. Various modes for acceleration of labour were used either alone or in combination to observe their effect on duration of labour.

Amniotomy was performed at 6.0 cms of cervical dilatation with head engaged and good uterine contractions.

When uterine contractions were found to be inadequate—oxytocin I/V infusion was started in the doses of 2 units in 500 ml of 5% dextrose at the rate of 20 drops/min and the dose was increased by 5 drops at every half hour interval according to patient's response. Inj. epidosisin—was given in doses of 8 mg I/V at half hour interval to maximum of 5 doses starting at the time of 3.0-4.0 cm of cervical dilatation with minimum of 50% effacement of cervix. Study group was further divided into seven sub-groups according to mode of active management (Table I).

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TABLE I
Distribution of Cases According to Mode of Active Management

Group	Mode of active management	No. of cases	Percentage
Study group (A)		309	
I	Amniotomy alone	61	19.74
II	Oxytocin alone	42	13.59
III	Epidosin alone	12	3.88
IV	Amniotomy + Oxytocin	16	5.18
V	Amniotomy + Epidosin	124	40.13
VI	Oxytocin + Epidosin	6	1.94
VII	Oxytocin + Epidosin + Amniotomy	48	13.34
Control Group(B)		75	

Table II shows mean duration of labour in different groups according to mode of active management.

As evident from this table the duration of 1st stage of labour was reduced to 7.36 hours in cases where only ARM was done in comparison to 15.92 hours in the control group. It was reduced to 3.46 hours in cases where oxytocin and epidosin were used in combination.

In the 2nd stage of labour it was 59.01 mts where only ARM was done while 34.0 mts in cases where oxytocin & epidosin were used in combination as compared to 82.8 mts in the control group.

Active policy was also efficient in reducing duration of third stage of labour which was 4.8 mts in cases where oxytocin and epidosin were used in comparison to 11.40 mts in control cases.

Thus it shows that all modes of active management used alone or in combination were effective in shortening the total duration of labour and the difference was statistically highly significant ($p < 0.001$) in all groups.

Mode of Delivery

Table III shows the mode of delivery in different groups. As evident from

TABLE II
Mean Duration of Labour in Primigravida

Groups	First stage (Hrs)	Second stage (Mts)	Third stage (Mts)	Total (Mean + SD) (Hrs)	't'	'p'
Study Group (A)						
I—ARM	7.36	59.01	7.72	8.49 ± 2.04	10.36	<.001
II—OXY	6.13	51.53	7.15	6.97 ± 3.02	10.96	<.001
III—EPI	5.87	44.58	8.58	6.8 ± 2.9	9.72	<.001
IV—ARM+OXY	5.56	47.81	9.5	6.4 ± 0.31	13.21	<.001
V—ARM+EPI	5.50	44.21	7.82	6.52 ± 2.56	12.635	<.001
VI—OXY+EPI	3.46	34.0	4.8	4.81 ± 1.93	11.026	<.001
VII—ARM+OXY—EPI	5.37	36.26	7.09	6.35 ± 2.34	12.21	<.001
Control Group(B)	15.92	82.8	11.40	17.50 ± 7.05	—	—

Table III incidence of spontaneous vaginal delivery was higher in Group I, III, IV and V compared to control group. However in group VII, 7 cases (14.58%) landed in caesarean section, reason being these were the cases where uterine action were inefficient and oxytocin was given to accelerate the labour. In group VI, one case landed in C. section because of cord round the foetal neck.

Outcome of Labour

Table IV shows effect of active management on complications associated with labour. Incidence of fetal distress was seen in 4.9% in group A compared to 10.7% in control group and maternal

distress was seen in 0.65% of study group compared to 4% in control group. No case of uterine inertia, prolonged labour and retained placenta was seen in study group as compared to 6.6%, 16% and 1.23% cases of control group, incidence of PPH was reduced to 0.32% from 2.6% in control group.

Neonatal Outcome

To determine the effect of acceleration of labour on the neonate—APGAR scoring was done at one and five minute intervals after birth.

Table V shows that the incidence of neonates with APGAR score 10 at 1 minute was 91.38% in study group and

TABLE III
Mode of Delivery in Primigravida

Groups	Mode of Delivery					
	NVD		Forceps		LSCS	
	No.	%	No.	%	No.	%
Group I	43	73.77	16	26.22	—	—
Group II	28	66.66	11	26.00	3	7.14
Group III	10	83.32	2	16.66	—	—
Group IV	15	93.73	1	6.23	—	—
Group V	98	79.03	20	16.13	6	4.84
Group VI	4	66.67	1	16.67	1	16.67
Group VII	35	72.92	6	12.3	7	14.58
Control Group	55	73.33	16	21.33	4	5.33

TABLE IV
Complications of Labour

Sl. No.	Complications	Study Group		Control Group	
		No.	%	No.	%
1.	Fetal Distress	15	4.9	8	10.7
2.	Maternal Distress	2	0.65	3	4.0
3.	Uterine inertia	—	—	5	6.6
4.	Unfavourable progress	1	0.32	2	2.6
5.	Deep Tr. Arrest	1	0.32	3	4.0
6.	Prolonged labour	—	—	12	16.0
7.	Retained Placenta	—	—	1	1.23
8.	P.P.H.	1	0.32	2	2.6

83% in control group which was increased to 98.88% at 5 mts in study group and 89% in control group.

TABLE V
Apgar Scoring at 1 & 5 Minute Interval

APGAR Scoring	Study Group (A)		Control Group (B)	
	1 Mts (%)	5 Mts (%)	1 Mts (%)	5 Mts (%)
	0/10	—	—	1.5
1/10-5/10	1.25	—	5.5	0.5
6/10-9/10	7.38	1.63	10.0	4.0
10/10	91.38	98.38	83.0	89.0

There was a significant reduction in neonates with low APGAR score in study group than in control group.

No intrapatal death occurred in study group as compared to 1.5% in control group—it is because of the fact that there was careful monitoring of each patient during labour and timely intervention was done in case any complication occurred.

Discussion

In the present study various methods for active management of the labour are being tried. Each method being chosen depending upon the clinical presentation of the patient. Debjani and Gogoi (1981) used only ARM and Oxytocin to stimulate labour while in 1984 Desai and Deshpande concluded that amniotomy definitely shortened labour and epidosis accelerated if further. Oxytocin shortened the labour, however, close supervision was necessary. Tripathy and Raut (1987) used amniotomy at 2.0 cm cervical dilatation, oxytocin drip, epidosis, pethidine and sparteine to shorten the labour while Dalal *et al* (1987) used oxytocin drip and amniotomy alone at 4 cm cervical dilatation and delivered most of the primigravida within 12 hours.

They also reported highly significant reduction in the incidence of operative interference.

In the present study various modes of active management of labour definitely shortened the duration of labour as compared to control and incidence of operative delivery was also reduced without any maternal or foetal complication. Best results are seen when oxytocin infusion alongwith epidosis is used. Oxytocin improves the intensity of uterine contraction while epidosis reduces hyperexcitability of parasympathetic nervous system and lowers the tone of smooth muscle system (Steinman, 1953 and Schildbach, 1954).

Conclusion

It can be concluded that active management of labour by using various modes for acceleration of labour depending upon individual case definitely shortens the duration of labour. A great advantage is that decision for intervention can be taken early before any harm occurs to mother or fetus. It promises normal delivery to an increasing number with consequent reduction in operative delivery, complication of labour and number of neonates with low APGAR score at birth.

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