

ACTIVE MANAGEMENT OF LABOUR

by

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Introduction

A reduction in the total duration of labour without causing any adverse effect to the mother or foetus by active management is a new approach. On the other hand, if allowed to take its own course and watched expectantly, there is increased incidence of prolonged labour, operative delivery, and maternal and foetal morbidity and mortality.

Active management of labour is used as a routine in the Obstetric and Gynaecology department of Sahai Hospital, Jaipur and its effectiveness, advantages and results have been evaluated in 255 patients admitted over a period of 6 months (from 1st October 1980 to 31st March 1981) in labour with vertex presentation and gestation of 36 weeks or more. Women admitted for induction, multiple pregnancies, major degree of cephalopelvic disproportion, contracted pelvis, premature labour and presentations other than vertex have been excluded from this study.

Material and Methods

This study was conducted on 255 cases who were categorised in two groups:

Group I: (42 cases) consisted of patients who had not gone into spontaneous labour

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till the expected date of delivery and were called one week after (i.e. at 41 weeks) for induction and subsequent accelerations or where labour was induced between 36-40 weeks for pre-eclamptic toxæmia (P.E.T.) or hypertension.

Group II: (213 cases) consisted of patients who were already in labour at the time of admission with vertex presentation and gestation of 36 weeks or more. In these cases labour was accelerated.

On admission, pulse and blood pressure was recorded, height of the uterus, station of head, foetal heart sounds and frequency and intensity of uterine contractions were noted by abdominal examination. Vaginal examination was done to determine the Bishop's score and the pelvis was assessed. Enema was given to all patients.

Whether for induction or acceleration if on admission the cervical dilatation was 1.5 cms or more and head stations—3 or below, artificial rupture of membranes (ARM) was done and if within 2 hours of ARM there was no improvement in uterine contractions, Syntocinon drip was started. On the other hand, if cervical dilatation was <1.5 cms and head station—4 or above. Syntocinon drip was started first and followed later on by ARM, with fixation of head or increased cervical dilatation.

The dose of Syntocinon drip was given according to the titration method suggested by Turnbull and Anderson (1968), which is tabulated below:

Units of Oxytocin in 540 ml. of 5% dextrose	Oxytocin conc. in mU/min. at varying drip speed		
	Drops/minute		
	15	30	60
0.5	0.93	1.85	3.70
2.0	3.70	7.40	14.80
8.0	14.80	29.60	59.20
32.0	59.20	118.40	336.80

In cases of P.E.T. and hypertension the drip speed was kept fixed at 15 drops/min. but the concentration of Syntocinon was gradually increased to avoid water overload. Starting with 1 unit of Syntocinon in 540 cc. of 5% GDW, it was gradually increased at half hour intervals to 2, 4, 8, 16 and 32 units in 540 cc of 5% GDW till adequate uterine contractions were obtained.

Syntocinon drip was used in all the 42 patients of group I. 1 unit of Syntocinon in 540 cc of 5% GDW was given in 10, 2 units in 18, 4 units in 6, 8 units in 4, and 16 units in 4 patients. Syntocinon drip was required in 80 of the group 2 patients for adequate acceleration. 1.85 mU/min. of Syntocinon was given in 50, 3.7 mU/min. in 10, 7.4 mU/min. in 8, 14.8 mU/min. in 9, 29.6 mU/min. in 1 and 59.2 mU/min. in 2 patients.

Progress of labour in all the cases was determined by descent of head, cervical dilatation and effacement. Usually dilatation of about 1 cm. per hour in a primigravida and 1.5 to 2 cms. per hour in a multigravida is expected. If after 6 hours, progress of labour was not satisfactory, a careful reassessment of the patient was done and decision taken accordingly. Duration of labour in group one cases was measured as, the interval between establishment of regular uterine contractions and delivery. The total duration from start of induction, being the induc-

tion—delivery interval. Duration of labour in group two cases was measured as the admission—delivery interval, but where cervical dilatation was 4 cms. or more on admission, it was measured from the beginning of regular uterine contractions.

Observations and Results

Amongst 255 patients, 42 patients were in group 1 and 213 patients in group 11. Out of 42 patients in group 1, 30 patients were induced for postmaturity, 7 for pre-eclamptic toxæmia and 5 for hypertension.

In group I, 28 were primigravidas ($P_0 + o$) and 14 were second gravidas ($P_1 + o$). In group 2, 100 patients were primigravida ($P_0 + o$), 90 were II and III gravida ($P_1 + o$) and ($P_2 + o$) and 15 more than III gravida ($P_3 + o$ or more).

In group 1 Syntocinon infusion followed by ARM was required in 32 patients, whereas ARM followed by Syntocinon infusion was required in 10 patients. In group II, ARM was done in all the patients except 29, who were admitted with absent membranes. Syntocinon infusion was required in 80 patients out of which 57 patients were primigravida, 21 patients 2nd or 3rd gravida and 2 were more than three gravida.

Table I shows the effect of active management of labour on total number of

TABLE I
Effect of Active Management on Duration of Labour

	Mean duration (hours)	Range (hours)	Patients delivered at various intervals (in hours)				
			0-4	4-8	8-12	12-16	16
P ₀ +0	6.01	2.00 to 18.12	31 (24.22%)	58 (45.31%)	27 (21.10%)	10 (7.81%)	2 (1.56%)
P ₁ +0 & P ₂ +0	3.84	1.01 to 16.00	79 (70.54%)	29 (25.89%)	4 (3.57%)	—	—
& P ₃ +0 more	3.47	1.00 to 7.45	11 (73.33%)	4 (26.67%)	—	—	—

patients in both the groups together. The mean duration as well as the range is remarkably less. The duration of labour has not been found to be related to the strength of Syntocinon drip used, because higher strengths were required only in those where without Syntocinon or with lower strengths proper uterine contractions were not established. The induction-delivery interval in group I cases ranged between 4 hours 40 mts. to 25 hours. Out of 42 cases, only 6 cases had induction-delivery interval more than 16 hours.

It is evident from Table II that with

active management maximum number of patients have spontaneous vaginal delivery.

Indications of LSCS were foetal distress (3 cases), failed trial and mild CPD (3 cases), inco-ordinate uterine action (2 cases), failed forceps and big baby (1 case).

Indication for ventouse were deep transverse arrest with cervical rim (3 cases). Kielland's forceps were applied for deep transverse arrest (3 cases). Indications for low forceps were P.E.T. (10 cases), hypertension (5 cases), pro-

TABLE II
Mode of Delivery

Mode of delivery	Grade I	Grade II	Total	Per cent
Normal delivery with or without episiotomy	22	180	202	79.21
Low forceps delivery with episiotomy	12	26	38	14.9
Kiellands forceps delivery with episiotomy	2	1	3	1.17
Ventouse extraction	2	1	3	1.17
L.S.C.S.	4	5	9	3.53

longed second stage and maternal exhaustion (10 cases), prolonged second stage and face to pubes delivery (2 cases) and foetal distress in second stage (3 cases).

Complications of labour and puerperium are shown in Table III. Out of 2 cases of retained placenta, one was adherent and there was hour glass constriction in another. The PPH occurred in 1 case where lumbar epidural block was given for moderate P.E.T. Incidence of all other complications is significantly lower than routinely observed in cases with unaccelerated labour. No case of sepsis was observed, inspite of the fact that antibiotics were not routinely used in cases of spontaneous vaginal delivery with or without episiotomy. The Apgar score in 96% of babies was 8-10.

Discussion

Routine use of active management of labour although requires more personal attention and constant supervision is safe, simple and effective and of course acceptable to the patients. The rate of Syntocinon drip can easily be regulated and controlled. In our study the mean duration of labour in primi was 6 hours, second and third gravida 3.8 hours and more than third gravida 3.4 hours. O'Driscoll and Stronge (1973) delivered 99.3% of primi by active management within 12 hours. They used even 100 units or Syntocinon with no adverse effect. In our study, 90.6% primis delivered in 12 hours, only 9.4 per cent primis delivered in more than 12 hours but before 16 hours.

Mishra (1979) showed that 90% of patients delivered within 4-7 hours with active

TABLE III
Complications

(A) Complications of labour	Grade I	Grade II	Total	Per cent
Inco-ordinate uterine action	1	1	2	0.78
Prolonged second stage (45 minutes)	2	8	10	3.92
Maternal exhaustion	3	5	8	3.13
Foetal distress	2	4	6	2.35
Deep transverse arrest	4	2	6	2.35
Unfavourable progress due to CPD	2	1	3	1.17
<i>(B) Puerperal complications</i>				
Retained placenta	—	2	2	0.78
P.P.H.	1	—	1	0.39
Transient pyrexia	1	2	3	1.17

management, while 10% delivered in the same period where active management was not used. Kar and Gogoi (1981) with active management found that 62.1% primis and 86.7% mults delivered in less than 8 hours. In our study, 69.52% primis and 96.5% multi delivered in less than 8 hours.

Table VI shows the mode of delivery by different authors following active management of labour. 79.21% of cases in our study had normal delivery with only 3.53% caesarean sections, 16% forceps deliveries and 1.17% ventouse extractions.

It is therefore evident that with active management the total duration of labour is shortened (average duration being 6 hours in primis in our study), with increasing number of normal deliveries and reduced incidence of forceps or ventouse and caesarean sections. Various intranatal and puerperal complications are also reduced.

Apgar score and perinatal mortality are not affected.

Conclusion

It can be concluded therefore that routine use of active management of labour especially in a private hospital minimises the load on maternity wards with most of the deliveries taking place in day time and under personal observation and supervision. It reduces the night load and bed occupancy too. It shortens the total duration of labour without increasing the maternal and perinatal mortality and morbidity. In our country where maternity centres and hospitals, cater very large areas, routine use of active management of labour should be advocated but simultaneous necessity of constant supervision should be stressed.

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Author	Normal	Forceps	Ventouse	Caesarean
Kar and Gogoi (1981)	62.1%			
Mishra (1979)				
O'Driscoll et al (1973)				
Turnbull and Anderson (1968)				
Present Study	79.21%	16%	3.53%	1.17%