

ROLE OF ACTIVE MANAGEMENT IN LABOUR

by

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Introduction

The first labour is a unique experience in a woman's life and if prolonged it may produce a picture of great mental anguish and distress. The obstetrician endeavours to make labour safe, simple and as easy as possible. Various attempts at pain relief have not been uniformly successful and have resulted in an increase in the incidence of prolonged labour with increased operative delivery rate by 13% (Beazley *et al.*, 1967). (Thus the modern approach towards labour management is one of curtailing the total duration of suffering, with the obstetrician actively directing and accelerating the course of labour instead of watching expectantly).

Material and Methods

In the present study the progress of labour was augmented by artificial means such as rupture of membranes and syntocinon infusion, either alone or in combination and their effect has been evaluated on total duration of labour, delivery outcome and maternal and foetal morbidity and mortality. One hundred and thirty-seven uncomplicated primigravidae of comparable age, weight, height, social class and period of gestation were divided into the following groups:

Control Group of 35 patients (Group I).

Study group in whom the progress of labour was actively controlled (Group II). These were further divided in 3 sub-groups depending upon the type of interference.

II A: Course of labour activated by a deliberate amniotomy at the time of admission (31 patients).

II B: Course being activated by intravenous syntocinon infusion with 5 units/litre at a rate varying from 20-60 drops per minute (32 patients).

II C: Progress being stimulated by simultaneous use of amniotomy and syntocinon drip (39 patients).

In all cases labour was strictly supervised and all events were charted on a partogram.

Results

The effect of active management was compared graphico-statistically in different groups.

Table I shows a significant reduction in the total duration of labour following active management. After amniotomy the mean duration of labour was 5.93 hours as compared to a mean duration of 14.16 hours in the control group, approximately 60% decrease. After syntocinon infusion the mean duration was 6.34 hours i.e. 45% of the control and with a combination of two it was only 2.04 hours i.e. less than 25% of the control group. No patient in the study group had a labour of more

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Accepted for publication on 23-1-80.

TABLE I
Effect of Acute Management on Duration of Labour

Group	Mean duration (hrs.)	Range (hrs.)	Percentage of Delivered Patient in				
			0-4 hrs.	4-8 hrs.	8-12 hrs.	12-24 hrs.	24 hrs.
I	14.16	28.33-8.66	—	—	38.0	56.0	6.0
IIA	5.93	18.08-1.85	38.5	35.5	22.5	3.5	—
IIB	6.34	9.66-3.58	2.8	68.7	28.5	—	—
IIC	3.04	6.60-0.40	79.0	21.0	—	—	—

than 24 hours, while in the control group 6% were still undelivered at the end of 24 hours. Only 3.5% cases belonging to amniotomy group delivered after 12 hours the rest delivered within 12 hours, while in the control group no patient delivered before 8 hours and only 38.0% had delivered till 12 hours. Approximately 70% of patients belonging to each amniotomy or syntocinon group delivered within 8 hours, while after combined stimulation all cases delivered in less than 8 hours and 79% delivered in less than 4 hours.

Table II shows that not only did the patients have a quick delivery following labour activation but also a greater percentage had a spontaneous vaginal delivery. In the control group 34.32% of cases

TABLE II
Effect of Active Management on Mode of Delivery

Group	Spontaneous	Outlet Forceps	Caesarean
I	65.68%	31.46%	2.86%
IIA	90.32%	9.68%	—
IIB	96.88%	3.12%	—
IIC	100.00%	—	—

needed operative intervention in the form of forceps or caesarean section. Following amniotomy 90.32% cases delivered normally and 9.68% required assistance with forceps while after syntocinon infusion only 3.12% needed forceps. With a combined augmentation all the cases had a spontaneous vaginal delivery.

TABLE III
Intra-natal Complications in Various Groups

Complication	Group I		Group IIA		Group IIB		Group IIC	
	No.	% age	No.	% age	No.	% age	No.	% age
1. Dysfunctional uterine action	5	14.3	1	3.3	0	—	0	—
2. Maternal exhaustion	3	8.58	0	—	0	—	0	—
3. Transient Hypertension	3	8.58	1	3.3	8	25	1	2.5
4. Intra-natal pyrexia	2	5.72	0	—	0	—	0	—
5. Foetal distress	4	11.40	1	3.3	1	3.2	0	—
6. Prolonged second stage	7	20.00	1	3.3	1	3.2	0	—

Table III shows the incidence of various complications occurring during the course of labour. Dysfunctional uterine action occurred in 14.3% cases belonging to the control group, and in 3.3% cases following amniotomy, while it was not observed in patients receiving syntocinon infusion either alone or in combination. Similarly maternal exhaustion or intranatal pyrexia did not occur with a short activated labour. The incidence of foetal distress also decreased to only 3% as compared to 11.4% in the control group and prolonged second stage was observed 6 times less often after augmented labour as compared to uninterfered labour. A transient rise in blood pressure occurred more frequently in patients receiving syntocinon infusion as compared to other groups but this had no deleterious effect on the mother or baby. No case of uterine tetany, cord prolapse or intra-uterine death occurred and no baby suffered from asphyxia neonatorum. Third stage complications like retained placenta, obstetric shock, post partum haemorrhage etc. were also not observed in the present series.

The various puerperal complications in different groups were studied. Artificial rupture of membranes did not increase pyrexia rate significantly when compared to the control group. Genital tract sepsis with isolation of pathogens from high vaginal swab culture occurred in 8.6%

cases in the control group, while the incidence was comparatively less in the rest of the groups. Rather overall sepsis rate was related to total duration of labour and mode of delivery, being greater in operative deliveries following a long labour.

Discussion

The mean duration of primigravide labour of 14.16 hours in the control group was comparable with the duration reported by Busby (1948), Friedman (1955) and Jeffcoate (1961). After amniotomy total mean duration was 5.93 hours approximately a shortening of 60%. Koller and Abt (1950) and Guttmacher (1958) also reported a shorter labour following amniotomy. O'Driscoll *et al* (1973) by an intensive regime of active management delivered 99.3% primigravidae within 12 hours. In the present series also only 1 patient delivered after 12 hours in the study group.

Eastman (1958) observed that out of 20542 deliveries, 62% were normal and 38% were operative, while Shaefer (1960) noticed a 35% incidence of forceps in the control group as compared to only 7% after oxytocin infusion. A favourable response with oxytocin was also reported by Reid (1946) with 99.5% of his cases having spontaneous vaginal delivery. In

TABLE IV
Incidence of Various Puerperal Complications in Different Groups

Complication	Group I		Group IIA		Group IIB		Group IC	
	No.	%age	No.	%age	No.	%age	No.	%age
1. Transient pyrexia	5	14.32	5	16.15	2	6.25	1	2.53
2. Significant pyrexia	2	5.72	2	6.42	1	3.12	4	10.12
3. Genital tract sepsis	3	8.60	2	6.42	2	6.25	2	5.06
4. Secondary PPH	0	—	0	—	0	—	0	—
5. Gaping episiotomy	2	5.72	1	3.21	1	3.12	0	—

the present series, 96.08% had spontaneous vaginal delivery after active management as compared to only 65.68% in the control group.

Maternal morbidity also decreased following active management of labour. O'Driscoll *et al* (1973) reported no case of maternal exhaustion after following a policy of active management as was also observed in this series. Transient rise in blood pressure following syntocinon infusion was observed in 25% patients receiving syntocinon infusion as compared to 8.58% in the control group. Similar rise was also noted by Lipton *et al* in 1962. Artificial rupture of membranes is known to predispose to infection, with an ascending infection rate of as high as 10% observed by Muldoon (1968). In the present series febrile puerperium occurred in 6.42% cases having amniotomy and a similar incidence was also observed in cases having syntocinon infusion and this incidence was less when compared with the control group, thus no predisposition to infection was evident.

The effect of active management on foetal outcome was also favourable. Foetal distress occurred in only 3% cases each, following artificial rupture of membranes and syntocinon infusion, while in the control group the incidence was 11.40%. Alderman (1974) observed no difference in Apgar scoring of babies after active management. In the present series also no baby suffered from intra-uterine asphyxia.

Conclusion

A definite reduction in the total duration of labour by 60% in patients having artificial rupture of membranes alone, by 55% in patients having syntocinon infusion and by 75% in those having a combined augmentation was seen. There was

also a significant decrease in the operative delivery rate when labour was actively managed. Maternal morbidity and foetal hypoxia rates were less as compared to control. On the whole a great beneficial effect has been observed on the maternal and foetal well being during labour, resulting in deliveries of normal babies in a shorter period.

Acknowledgement

The authors are grateful to Dr. S. Chawla, M.S., D.M.R.D., F.A.M.S., Principal and Medical Superintendent of Lady Hardinge Medical College and Smt. Sucheta Kriplani Hospital, New Delhi, for giving permission to publish this paper.

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