

INDUCTION OF LABOUR IN ECLAMPSIA

by

S. JAIN

S. CHANDRA

and

M. KHURANA

SUMMARY

Our experience fails to confirm the popular belief that labour is unusually short in eclampsia and findings indicate that combined method of medico-surgical induction yields comparable delivery rate in eclampsia and control group. However, it is recommended that regardless of the favourability of cervix and gestation, induction of labour is invariably successful and thus preferable.

Material and Methods

The study comprised of consecutive 55 cases of antepartum eclampsia with singleton pregnancy between 1-11-82 to 8-6-84 at Lady Hardinge Medical College, who required induction of labour. On admission history was taken from relative and period of gestation was calculated from L.M.P. by Nagele's rule or data of lunar months and finally confirmed by clinical examination of neonate at birth. All were scored according to Bishop (1964) on the basis of vaginal findings at admission, once the patient was sedated at zero time. Lytic cocktail (1961) and Calmpose therapy (1968) was administered as sedation. Only patient with intact membranes and no sign of labour at the time when Bishop score was determined were included in the study. In induction group, with Bishop score of 4

or above and no contraindication for vaginal delivery, forewater amniotomy was done. Within 1½ an hour oxytocin infusion was started at dose rate of 2 mU/mt and titrated against the contractile response of uterus, upto maximum of 64 mu/mt. The infusion was continued for minimum of 12 hours. Progress of cervical dilatation was determined by 4 hourly vaginal examination and recorded against time in cervicograph. Progress was defined with an increase in Bishop score, or spontaneous rupture of membranes. Induction was considered a failure, if there was no progress in cervical status in 12 hours and no delivery within 24 hours from the initiation of induction.

Forty nulliparous cases with term pregnancy who had induction of labour for other than severe PET or eclampsia constituted the control group. The Chi square method, student's 'T' test and proportion test were used for statistical evaluation.

From: Dept. of Obst. & Gynec., Lady Hardinge Medical College and Associated Smt. S. K. Hospital, New Delhi-110 001.

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Results

Table I compares the profile of control and eclampsia cases. As might be expected, eclampsia patients were somewhat younger than their normal sisters, nulliparae averaging 21.53 years ($P < .001$) and multiparae 26.18 years. There was a significant increase in prematurity rates among eclampsia patients, 61.75% nullipara and 50% multiparae respectively delivered prior to 37 completed weeks of pregnancy. However, initial Bishop score was quite uniformly distributed ($P > .05$).

Results of delivery and failure rates are summarised in Table II. Eclampsia group showed a higher vaginal delivery rate, 92.72% versus 80% in the control group. However, the results were not statistically significant. There were 4 (7.2%) caesarean sections in control group.

Table III shows mean induction delivery interval (IDI) and different phases of cervicograph. The date excludes cases delivered by caesarean section. The duration of different phase of active phase of cervicograph could not be tabulated separately due to rapid rate of cervical dilatation. In eclampsia group all phases of labour were shorter in multiparae as compared to nulliparae. However, the difference was not statistically significant except in active phase ($P < .05$) and second stage ($P < .01$) of labour. Comparing with the control group, it was interesting to find no statistical difference in IDI and duration of latent and active phase in eclampsia group.

Table IV shows good correlation of initial Bishop score with IDI, while Table V shows the response of induction in preterm and term cases in eclampsia group. Data is

TABLE I
Profile of Cases

	Control	Eclampsia Group	
	Nulliparae	Nulliparae	Multiparae
Total	40	39	21
Age	24.27 ± 3.84	21.53 ± 2.60	26.18 ± 4.77
Period of gestation	39.28 ± 1.89	33.74 ± 4.41	35.10 ± 3.79
<37 weeks	Nil	21	11
Bishop score at zero hour	4.8 ± 1.96	4.74 ± 1.95	4.94 ± 1.58

TABLE II
Mode of Delivery

	Control	Eclampsia group	
	Nulliparae (N-40)	Nulliparae (N-34)	Multiparae (N-21)
Vaginal delivery*	32	31	20
Caesarean section*	6	3	1
Failure of induction*	8	1	1
	A	B	0

* A vs B vs C = Not significant.

TABLE III
Induction Delivery Interval (IDI) and Different Phases of Labour (Hour)

	Control	Eclampsia group	
	Nulliparae (N-32)	Nulliparae (N-31)	Multiparae (N-20)
1. IDI	7.90 ± 3.20	9.16 ± 5.35	7.65 ± 4.60
2. Latent phase	3.99 ± 1.99	3.70 ± 2.13	3.28 ± 2.05
3. Active phase	2.59 ± 1.59	3.19 ± 2.16	2.18 ± 1.15
4. Second stage	0.49 ± 0.41 A	0.42 ± 0.25 B	0.28 ± 0.10 C
1, 2	A vs B,	B vs C,	A vs C = NS
3.	A vs B NS V vs C	B vs C = P < .05	
4.	A vs B NS	B vs C P < .01 A vs C	

again interesting as IDI and duration of latent and active phase were comparable in term and preterm induced labour. The difference was not statistically significant in a given parity group, as well as on comparing the nulliparae with multiparous patient. There were 2 (3.92%) cases of postpartum haemorrhage in eclampsia group compared to 1 (2.5%) in control.

TABLE IV
Duration of Labour (hr) and Bishop Score

Bishop Score	Nullipara	Multipara
0-3	11.16	13.33
4	9.59	9.5
5	9.15	7.52
6	7.34	6
7-8	7.09	3.38

Discussion

Labour usually begins spontaneously shortly after the onset of fits in antepartum eclampsia. If it fails to occur, induction of labour, even if with unripe cervix, is performed as a rule. There is widely held clinical impression that duration of labour is unusually short in eclampsia

and majority of induction cases quickly respond and deliver even though fetal head is high and cervix appears unfavourable (Chesley 1971). This is in total not confirmed in the present study. The success of induction and delivery rate was not significantly higher in eclampsia than in control group ($P > .05$, Table II). Due to unknown reasons and contrary to the expectations the average IDI was 1.26 hours more in nulliparous eclampsia patient as compared to control. However, statistically the nulliparae in two groups were comparable as regards IDI and duration of latent, active phase and second stage of labour. In view of these findings, it is reasonable to assume that extraneous factors known to inhibit labour such as moderate sedation might be playing some role.

Preterm uterus is known to be refractory to oxytocin (Curris, 1980), but this is not true in preterm eclampsia cases, who responded equally well to induction as their term counterparts (Table V) even though fetal head was high and cervix appeared unfavourable. Pritchard (1975) noted similar experience in his series of 71 cases of eclampsia. This is partly due to

TABLE V
Response of Induced Labour in Preterm and Term Eclampsia Cases

	Nulliparae		Multiparae	
	Term (N-11)	Preterm (N-20)	Term (N-9)	Preterm (N-11)
IDI (hrs)	10.7 ± 5.48	8.70 ± 8.10	7.90 ± 5.38	7.41 ± 3.85
Latent phase (hr)	4.18 ± 1.99	4.1 ± 2.15	3.12 ± 2.07	3.5 ± 1.8
Active phase (hr)	3.62 ± 2.23	3.22 ± 1.55	2.42 ± 1.55	2.7 ± 1.36
IIInd stage (hr)	0.43 ± 0.20	0.35 ± 0.22	0.35 ± 0.16	0.43 ± 0.24
Bishop score	4.7 ± 2.41	4.65 ± 2.12	0.87 ± 0.92	4.9 ± 1.97
	A	B	C	D

A vs B, C vs D, A vs C, B vs D = All non-significant.

the fact that uterus of patient with eclampsia is irritable (Caldeyro Barcia, 1958) and its sensitivity to oxytocin is increased (Talledo and Zuspan, 1968). This study confirmed the inverse relation between initial Bishop score with IDI and oxytocin requirement viz., shorter labour and low dose of oxytocin requirement in patient with higher Bishop score.

Blood loss at and after delivery is commonly more in women with eclampsia (Pritchard and Mac Donald 1974). A somewhat higher but statistically significant incidence of P.P.H. was found in this study.

In conclusion, our experience fails to confirm that labour is unusually short in eclampsia and findings indicate that combined method of medicosurgical induction yields comparable delivery rate in eclampsia and control group. However, it is emphasized that regardless of the favourability of cervix and gestation, induction of

labour is invariably successful and thus preferable.

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