

EFFECT OF EPIDOSIN ON NORMAL LABOUR

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Painless childbirth has been the cherished desire of every woman and the constant aim of Obstetricians. The result of stress and strains of modern life, an addition to the Obstetricians' dilemma, is a reduction in the capacity of the pelvic musculature to relax, causing subclinical and clinical dystocias. Sedatives and spasmolytics have long been tried, but despite claims regarding facilitation in relaxation of cervix, they have found to be of insignificant value.

A major breakthrough was achieved in the management of cervical dystocia with the introduction of Efodin by Steinmann in 1953. Its efficacy in hastening labour was further elucidated by Schildbach, (1954) and Kishore and Agarwal, (1962). Recently a new drug has been added to this group—Epidosin. It is suggested that it causes a reduction in the duration of labour by 18-30% (Beck, 1956), normalization of irregular uterine contractions and improvement in the process of cervical dilatation (Walters, 1957).

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Though, the efficacy of this drug has been claimed by these workers, only occasional reports are present to confirm this view.

The present work has been undertaken to evaluate the efficacy of Epidosin in reducing the duration of first stage of labour, its effect on the course of normal labour, and to study its side-effects, if any, on the mother and the child.

Material and Methods

The study was carried out in the Department of Obstetrics and Gynaecology, S.N. Medical College, Agra from January, 1973 to January, 1974. The patients were divided in the following groups:

1. *Control Group—A* (Normal labour cases)

— Primigravida

— Multigravida

Control Group—B (Normal labour cases receiving Injections of D/W as placebo).

2. *Study Group* — (Normal labour cases receiving Epidosin)

— Primigravida

— Multigravida

The patients coming to the labour room for confinement were examined carefully. The drug was administered intramuscularly after half an hour's interval, with a maximum of 3 injections, after the cervix was 4 cms. dilated. The dilatation of the cervix was measured by means of

a CERVIMETER and the duration of labour was noted. The outcome of delivery was also noted. The results were tabulated and evaluated comparatively with the results of the Control Groups A and B.

Observations

The present study comprises 114 cases of labour who were given injections of Epidosin. (Study Group). One hundred and fifty cases (Control Group A and B) of normal labour were also studied simultaneously to establish the norms for the purpose of comparison.

Age

The average ages in the control and study groups were 23.51 ± 5.3 and 24.92 ± 5.1 years respectively. The difference in the ages is not statistically significant.

Parity

The average parity was 3.15 in the control group and 2.8 in the study group. The difference is not statistically significant.

Period of Gestation

Since only full term cases were studied there was no statistical differences in the two groups, the average being 38.04 and 39.10 weeks in the control and study groups respectively.

Station of Head

Vertex was floating in 73 cases (48.6%) and fixed in 77 cases (51.4%) in the control group. It was floating in 74 cases (64.9%) and fixed in 40 cases (35.1%) in the study group. The minimal difference between the two groups according to the

station of the head was not significant statistically.

Uterine Contractions

The present study included a tokometric study of the uterine contractions. No change was observed in the intensity of uterine contractions after administration of the drug. The mean tone of uterus in primigravida was 12.7 and 13 in the control and study groups respectively. The corresponding figures in the multigravida were 14.9 and 13.87 in the two groups respectively.

Condition of the Cervix

The consistency and effacement of the cervix were almost similar in the two groups. The average consistency was 2.9 in the control group and 2.8 in the study group with a standard deviation of 0.9 and 0.7 respectively. The difference in the two groups was not significant ($p > 0.01$).

Mean effacement of the cervix was 0.35 with a standard deviation of 0.12 in the control and 0.46 with S.D. of 0.2 in the study group. Again it was not significant. ($p > 0.01$).

Effect on First Stage of Labour

As is evident from Table I the average duration of the first stage of labour in the control group—A (primigravida) was 10.60 hours, while in control group—A (Multigravida) the duration was 5.90 hours. The corresponding duration in control group B was 9.55 and 5.62 hours in primigravida and multigravida respectively. In the Study group the average duration of first stage were 5.62 and 2.95 hours in primigravida and multigravida, respectively.

TABLE I
Mean Duration of First Stage of Labour in Different Groups

Group	Parity	No. of cases	Mean duration (in hours)	Difference of Mean (in hours)
Control A	Primi	37	10.60	
Control B	Primi	28	9.55	1.05
Control A	Primi	37	10.60	
Study A	Primi	35	5.62	4.98
Control B	Primi	28	9.55	
Study A	Primi	35	5.62	3.93
Control A	Multi	63	5.90	
Control B	Multi	22	5.61	0.29
Control A	Multi	63	5.90	
Study A	Multi	79	2.95	2.75
Control B	Multi	22	5.61	
Study A	Multi	79	2.95	2.46

Duration According to Condition of Cervix

Epidosin caused shortening of the duration of the first stage of labour in cases with consistency comparable to Calkin's Figure 2 and 3. In Calkin's Figure 2 the duration was reduced by 10.60 hours in primigravida and 2.27 hours in multigravida while in Calkin's Figure 3 the duration was reduced by 3.75 hours and 2.72 hours in the primigravida and multigravida respectively. The differences are significant statistically ($p < 0.01$).

Effect on Second Stage of Labour

It is clear from Table II that the average duration of second stage of labour

was almost equal in both primigravida and multigravida in the control and study groups. Although, the duration was shortened by 12 minutes and 6 minutes respectively, it is not significant.

Effect on Third Stage of Labour

As shown in Table III the third stage of labour was reduced by 1.05 minute and 1.0 minute in primigravida and multigravida respectively. There was no significant difference in the amount of blood loss in both the groups.

Effect on Mode of Delivery of Child

Spontaneous delivery occurred in 61.2% cases in the control group and in 72.7% of cases in the study group. Episiotomy

TABLE II
Analysis of Second Stage of Labour

Parity	Group	Mean duration (in minutes)	S.D.	Difference of Mean (in minutes)	p
Primi	Control	114	66	12	>0.01
	Study	102	47		
Multi	Control	72	61	6	>0.01
	Study	66	43		

TABLE III
Analysis of Third Stage of Labour

Parity	Group	Mean duration (in minutes)	S.D.	Difference of Mean (in minutes)	p
Primi	Control	6.05	3.03	1.05	>0.01
	Study	5.00	2.60		
Multi	Control	6.00	2.70	1.00	>0.01
	Study	5.00	3.02		

and forceps were applied, whenever indicated, in both the control and study groups to reduce the duration of second stage.

Foetal Outcome

In the present work the average APGAR scoring was 9.8/10. There was no evidence of foetal asphyxia during the intrapartum or the neonatal stage and the ultimate foetal salvage was 100%.

Maternal Complications

Maternal complications like uterine inertia, prolonged labour, postpartum haemorrhage, abnormal puerperium, parasympholytic activity and maternal morbidity were not noted during the present work.

Discussion

Epidosin reduces the hyperexcitability of parasympathetic nervous system by a combination of the properties of atropine and musculotropic action of papavarine (Walters, 1957; 1959; Meier, 1958). An increase in the tone of vagus leads to spasm of the cervix and inhibits dilatation of the cervix and thus causes prolongation of the first stage of labour (Whitehouse, 1944).

The present study comprises of 264 cases of normal labour, out of which 114 were given injections of Epidosin (8 mgms-24 mgms).

The average age in the control group and study groups were 23.51 and 24.92 years respectively. The average parity was 3.15 and 2.8 in the two groups respectively. These findings are similar to those of Beck (1956).

No change in the basal tone and in the intensity of uterine contractions were noted in the present series. No case with irregular contractions was noticed. Walters (1957) has said that apart from bringing about normalization of irregular contractions, Epidosin has no effect on the tone of the uterus. Similar findings have been observed by Schmidt, 1957 and Meier, 1958. However, these workers have assessed the uterine tone clinically, whereas in the present study a tokometric assessment was used.

As shown in Table I there is a significant shortening in the duration of first stage of labour.

Table IV shows the comparative percentage reduction in the duration of first stage of labour. The percentage of reduction in the present series is higher than in the earlier series due to certain unexplained factors.

Patients receiving placebo injections did not show significant reduction in the first stage of labour.

No significant shortening in the duration of labour was noticed in the second stage either in the present series or in

TABLE IV

Comparative Percentage Reduction in the Duration of the First Stage of Labour in Different Series

Serial No.	Worker	Percentage reduction in duration of first stage of labour
1.	Beck (1956)	18 — 30%
2.	Walters (1957)	
	Primi	21%
	Multi	17%
3.	Walters (1958)	2 — 4 hours (% not given)
4.	Present series	
	Primi	45%
	Multi	46%

the earlier series of Beck (1956); Walters (1957) and Schmidt (1957). The minimal difference in the duration has been attributed to the fact that the patient was not tired during the first stage of labour.

No change in duration and no complications were encountered during the present study in the third stage of labour. Similar findings have been observed by Walters (1957) and Meier (1958). Epidosin seems to have no toxic effect on the foetus as no case of foetal asphyxia

was encountered in the present study. Similar views have been expressed by the earlier workers (Beck, 1956; Meier, 1958; Schmidt, 1957 and Walters, 1957).

Conclusions

Epidosin was tried in 114 cases of normal labour. The duration of first stage of labour was significantly shortened by 45% in primigravida and 46% in multi-gravida. No untoward foetal or maternal complications were noticed during the course of the present work.

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