EFFECT OF EPIDOSIN ON CERVICAL DILATATION DURING LABOUR

By

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SUMMARY

This study was conducted on one hundred and sixty patients in active labour, eighty each of control group and epidosin group respectively, in the Department of Obstetrics and Gynaecology, Medical College and Hospital, Rohtak. The mean rate of cervical dilatation in cm/hour was calculated in both the groups separately for primigravidae and multigravidae. The difference was statistically highly significant for both primigravidae and multigravidae. The rate of cervical dilatation was enhanced in the epidosin group. However, no harmful effect was observed on the mother and foetus.

Introduction

During non-pregnant state cervix is firm and softens during late pregnancy and impending labour. Inspite of good uterine contractions, the cervical dilatation may be hampered because of inhibitory impulses in the form of spasm, leading on to prolonged labour. Various drugs have been tried to reduce the tone of cervical cells, to favour early dilatation of cervix e.g. antispasmodics, belladona alkaloids etc. A major break through was achieved in 1953 by Steinmann in the form of introduction of Efosin. It's use in hastening labour was further supported by Schildbach (1954), Kishore and Agarwal (1962), Srivastava *et al* (1979) and Guha and Lahiri (1984). Epidosin is one of the drugs of this group. Epidosin causes 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).

The present work has been undertaken to study the efficacy of this drug in increasing the rate of cervical dilatation and it's effect on the mother and foetus.

Material and Methods

One hundred sixty patients, in labour, were randomly selected for this study, from the Department of Obstetrics and Gynaecology, Medical College and Hospital, Rohtak. Of these, eighty patients served as controls (Group I) and eighty patients were administered epidosin (Group II).

The criteria for selecting the patients for this study included:

(i) Exclusion of any mechanical cause of non-dilatation of cervix or any other obstetrical complication.

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(ii) No history of leaking per vaginum or artificial rupture of membranes i.e. intact membranes.
(iii) Patient has already gone in active phase of labour.

In group I patients, the initial dilatation of cervix, at the time of registration of patient for this study, and time interval between the time of registration of patient and delivery of baby was noted. In Group II patients, injection epidosin was administered in dose of one ampoule intramuscularly at intervals of twenty minutes each upto a maximum of 4 injections after the patient had gone in active phase of labour. The dilatation of cervix prior to administration of the drug and time elapsed between administration of drug and delivery of baby was recorded in each case. Any maternal or foetal complications, mode of delivery and APGAR scoring of baby at one and five minutes were recorded.

Observations

Table I, depicts the distribution of cases according to the parity in both groups. The average parity in cases of multigravidae was 2.8 in group I and 2.6 in group II.

TABLE I
Distribution according to parity

Parity	Group I n=80	Group II n=80
Primigravida	38	32
Multigravida	42	48

The average age of patients in group I was 24.5 yrs ± 4.2 S.D. and 22.8 yrs ± 4.5 S.D. in group II. Table II shows the distribution of cases according to the period of gestation. The mean gestation being 38.9 week ± 1.2 SD and 38.8 weeks ± 1.2 SD in group I and II respectively.

TABLE II
Distribution according to period of gestation

Gestation in weeks	Group I n = 80	Group II n = 80
<37	4	6
37	8	6
38	12	16
39	28	24
40	24	24
41	4	4
>41	—	—
Mean±S.D.	38.9 ± 1.2 SD	38.8 ± 1.2 SD

The difference in the two groups (I and II) as regards age, parity and period of gestation was not statistically significant ($P > 0.05$).

Table III, shows the mean rate of cervical dilatation per hour in both the groups, for primigravidae and multigravidae separately. The difference in the mean rate of cervical dilatation per hour was statistically significant both in primigravidae and multigravidae ($P < 0.001$).

Table IV, shows the mode of delivery of baby in both the groups. Spontaneous vaginal delivery occurred in 28 cases in

TABLE III
Mean rate of cervical dilatation per hour

Parity	Group I (cm/hr)	Group II (cm/hr)	P value
Primigravidae	1.11 ± 0.28	2.20 ± 0.74	<0.001
Multigravidae	1.65 + 0.43	2.47 ± 0.75	<0.001

Group I and 20 cases in Group II. Episiotomy and vacuum were applied whenever indicated to avoid perineal tears or to cut short 2nd stage.

TABLE IV
Mode of delivery

Mode of delivery	Group I n=80	Group II n=80
FTND	28	20
FIND with episiotomy	48	50
Vacuum extraction	2	10
LSCS	0	0

The average APGAR scoring was 8.5/10 at one minute and 9/10 at 5 minutes. There was no evidence of birth asphyxia in any case.

The side effects of the drug were noted in only 50% of cases of group II. As is evident from Table V, forty patients had tachycardia, one patient had fever and ten patients had flushing of face.

TABLE V
Side Effects of Epidosin

	Group I n=80	Group II n=80
Tachycardia	0	40
Flushing of face	0	10
Fever	0	1
Dryness of mouth	0	0
Foetal distress	0	0

Discussion

Epidosin has neurotropic (atropine like) and musculotropic (Papaverine like) actions (Welters, 1957; Meier, 1958). An increase in tone of vagus may lead to spasm of cervix and prolonged first stage of labour (Whitehouse, 1914). Epidosin acts by counteracting increased tone of vagus by it's parasympatholytic action and results in rapid dilatation of cervix.

The present study shows a statistically significant ($P < 0.001$) increase in rate of cervical dilatation following administration of epidosin as compared to controls, both in primigravidae and multigravidae. Thus the total duration of first stage of labour is significantly reduced. However, no significant shortening of duration was noticed in second and third stages of labour. There was no increase in complication rate in the third stage in both the groups. These results are in confirmity with those published by previous workers (Beck, 1956; Walters, 1957; Meier, 1958).

Epidosin has no toxic effects on the foetus as is evident from the normal APGAR scoring. Similar results have been reported by Beck (1956), Meier (1958) and Sirivastava *et al* (1979). Maternal complications observed in this study in form of tachycardia, flushing of face and fever have been reported by other workers (Bhan *et al*, 1979 and Guha and Lahiri, 1979).

As regards, the mode of delivery, vacuum extraction was done in 10 cases of Group II as compared to only two cases in group I. The indication of vacuum extraction was inadequate bearing down in five cases of group II and two cases of group I. However, in remaining five cases of group II vacuum extraction was done to cut short second stage of labour as a result of foetal tachycardia consequent to epidosin induced maternal tachycardia, as the APGAR scoring at 1' and 5' was normal in all the five cases, without any other evidence of foetal distress.

To conclude, epidosin helps in cervical dilatation and reduces the duration of first stage of labour considerably without any harmful effects on the mother and foetus. The use of epidosin should be advocated to reduce the duration of active phase of labour and to save the mother of the agony of prolonged labour pains.

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