



A COMPARATIVE STUDY ON THE EFFICACY AND SAFETY OF DROTAVERINE HYDROCHLORIDE AND VALETHAMATE BROMIDE ON CERVICAL DILATATION DURING LABOUR.

Obstetrics & Gynaecology

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ABSTRACT

This study is designed to evaluate the effect of Drotaverine , a superior smooth muscle relaxant on cervical dilatation and compare its efficacy with Epidosin . The study was conducted on 250 women which included both Primigravida and Multigravidae and who were at term in Early active phase of labor. Average rate of Cervical dilatation in Primigravida with injection Drotin was 3.14 cm/hr and with injection Epidosin was 2.40 cm/hr and in Multigravidae it was 4.20 cm/hr with injection Drotin and 2.80 cm/hr with injection Epidosin. Mean duration of Active phase of First stage of labor in Primigravida was 140.90 min with Drotin and 177.40 min with Epidosin and in Multigravidae it was 90.7 min with Drotin and 137.6 min with Epidosin. Drotaverine shortened the duration of active phase of first stage of labor as compared to Epidosin .

KEYWORDS

Labor, Cervical Dilatation , Drotaverine , Epidosin.

INTRODUCTION

Labor is a multifactorial process which involves myometrial contraction , cervical ripening and dilatation and expulsion of fetus and placenta . First stage of labor in Primigravida lasts about 12-16 hrs and in Multigravidae about 6-8 hrs.

Prolonged labor is a dreaded problem . Most common cause of prolonged first stage labor is Cervical Spasm leading to Cervical Dystocia. Spasmolytic drugs help to relieve Cervical spasm and facilitate cervical dilatation.

Drotaverine is an Isoquinolone derivative 3'4'6'7' Tetraethoxyl-1-benzal , 1'2'3'4 Tetrahydroisoquinolone. It binds to surface of smooth muscles and changes their membrane potential and permeability. It inhibits Phosphodiesterase-IV enzyme and increases the intracellular concentration of cAMP and cGMP and causes smooth muscle relaxation.

Epidosin (Valethamate bromide) is a mixture of diphenylpiperidino - propane ethylamide HCL .

It is an antispasmodic which helps in cervical dilatation due to its neurotropic or atropine like action and musculotropic like action.

Hence this study was carried out to compare the efficacy and safety of injection Drotaverine with injection Epidosin on duration of active phase of first stage of labor , rate of cervical dilatation and its maternal side effects.

OBJECTIVE

To compare the efficacy of Drotaverine and Epidosin in shortening the duration of active of first stage of labor and on the rate of cervical dilatation.

MATERIALS AND METHODS

The study was a prospective study conducted in the Dept. of Obs. and Gynae. from June 2018 to Feb 2020 in 250 women, both Primigravida and Multigravidae at 37-42 weeks with Vertex presentation in Active stage of labor .

Inclusion Criteria

- Primigravida
- Multigravidae upto 4 deliveries
- Age 18-30 years
- Period of gestation 37-42 weeks
- Single pregnancy with vertex presentation
- Good Uterine contractions. 2-3 contractions in 10 min for 30- 40 sec
- Pelvis adequate.

Exclusion Criteria

- Women with previous uterine scar .

- Malpresentation.
- Multiple pregnancy.
- Antepartum haemorrhage.
- Cephalopelvic disproportion.
- Pre Eclampsia.
- Other pregnancy complications .

The selected women were divided into two groups-

A) Drotaverine Gp

200 women given injection Drotin 40 mg im at 3-4 cm cervical dilatation and repeated after 2 hrs Maximum 3 doses given.

B) Epidosin Gp

50 women given injection Epidosin 8 mg im at 3-4 cm cervical dilatation and repeated after 2 hrs Maximum 3 doses given I

Table -1 Age , Parity And Gestational Age

	DROTIN-1	EPIDOSIN-2	pvalue
NUMBEROFWOMEN	200	50	
MEANAGE(YRS)	24.96±3.60	25.10±4.04	(>0.05) Insignificant
MEANPD.OF GESTATION	38.40	38.84±1.14	(>0.05) Insignificant
PRIMIGRAVIDA	72(36%)	20(40%)	(>0.05) Insignificant
MULTIGRAVIDAE	128(64%)	30(60%)	(>0.05) Insignificant

There was no significant difference in the gravidity,mean age and mean duration of gestation in two groups .

Table -2 Duration Of Active Phase Of 1st Stage Of Labour And Rate Cervical Dilatation.

	DROTIN-1	EPIDOSIN-2	p-value
NUMBEROF WOMEN	200	50	
MEAN DURATIONOF ACTIVE PHASEOF1 ST STAGE (MINUTES)	114.36±56.45	156.78±58.88	(<0.001) significant
1 ST INJECTION TODelivery INTERVAL (MINUTES)	146.82±62.75	190.32±60.44	(<0.001) significant
RATEOF CERVICAL DILATATION (CM/HOUR)	3.96±2.20	2.64±1.76	(<0.01) significant

It was observed that mean duration of active phase of 1st stage of

labour in Group 1 was 114.36±56.45 minutes and in Group 2 was 156.78±58.88 minutes. Mean duration of 1st injection to delivery interval in Group 1 was 146.82±62.75 minutes and in Group 2 was 190.32±60.44 minutes.

Duration of Active phase of 1st stage and injection to delivery interval were significantly shorter in Group 1 ($p < 0.001$).

Rate of Cervical dilatation in Group 1 was 3.96±2.20 cm/hr and in Group 2 was 2.64±1.76 cm/hr. Cervical dilatation is faster in Group 1 ($p < 0.01$).

RESULTS

The results were the mean duration of active phase of first stage of labor was 114.36±56.45 in Drotin gp and 156.78±58.88 in Epidosin gp. Mean duration of 1st injection to delivery interval in Drotin gp was 146.82±62.75 and in Epidosin gp was 190.32±60.44.

Thus the duration of active phase of 1st stage and injection to delivery interval were significantly shorter in Drotin gp. And the rate of cervical dilatation were significantly faster in Drotin gp.

Table- 3 Duration Of Active Phase Of 1st Stage Of Labor And Rate Of Cervical Dilatation According To Gravidity.

GRAVIDITY	GROUP	NO OF WOMEN	MEAN DURATION OF ACTIVE PHASE OF 1ST STAGE	DIFFERENCE OF MEANS		MEAN RATE OF CERVICAL DILATATION (CM/HR)	DIFFERENCE OF MEANS	
				MIN.	%		MIN.	%
PRIMIGRAVIDA	DROTIN	72	140.90	36.50 min	20.57 %	3.14	0.74 min	23.56 %
	EPIDOSIN	20	177.40			2.40		
MULTIGRAVIDA	DROTIN	128	90.7	46.9 min	34.08 %	4.20	1.40 min	33.3 %
	EPIDOSIN	30	137.6			2.80		

Drotaverine shortened the duration of active phase of 1st stage of labor in Primigravida by 20.57% and in Multigravidae by 34.08% as compared to Epidosin.

And the rate of Cervical dilatation in Drotin gp was faster by 23.56% in Primigravida and by 33.3% in Multigravidae when compared to Epidosin gp.

Table-4 Side Effects In Drotaverine And Epidosin Group

SIDE EFFECTS	DROTIN GROUP	EPIDOSIN GROUP	pvalue
Headache	3%	3.8%	0.1
Dryness of mouth	-	10%	-
Tachycardia	3%	27%	0.001
Flushing of face	-	5%	-

Side effects of Epidosin like – Dryness of Mouth and flushing of face is not seen in Drotin gp. Tachycardia is seen in 3 % women in Drotin gp. and 27% in Epidosin gp. Thus Drotaverine is a safe, potent and effective drug to shorten the 1st stage of labor without any side effects and better than epidosin.

CONCLUSION

A study was conducted to compare the efficacy and safety of Drotaverine and Epidosin in shortening the duration of 1st stage of labor. Comparable analysis was done regarding

- Duration of active phase of 1st stage of labor
- Rate of cervical dilatation
- Side effects

And it was found in this study that Drotaverine is a safe, potent and

effective drug to shorten the duration of 1st stage of labor without any side effects and better than Epidosin.

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