

A study of effect of injection drotaverine hydrochloride in agumentation of labour

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Abstract

Background: The common cause of prolonged first stage of labour is cervical dystocia. Many a times inspite of good utrine contractions cervix fails to dilate or dilates very slowly. In modern obstetrics the passive concept of watchful expectancy has long been abandoned and replaced by intensive care. **Objectives:** To study the effect of injection drotaverine hydrochloride in augumentation of first stage of labour. **Material and Methods:** Study was conducted in Dr. Ulhas Patil Medical College and Hospital Jalgaon, Kh, Maharashtra. Total uncomplicated 140 full term patients were studied, 70 patients with injection drotaverine hydrochloride and 70 controls. In both the groups 35 primigravidas and 35 multigravidas each. **Results and Conclusion:** Injection Drotaverine Hydrochloride during active phase of labour increases rate of cervical dilatation and decreases duration significantly. **Keywords:** Augmentation, Partograph, Drotaverine Hydrochloride.

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INTRODUCTION

The birth of a child is one of the most rewarding and memorable experiences a person can have. Both the obstetrician and labouring women would like to accomplish the delivery in the shortest possible time, without compromising maternal and fetal safety. Labour is a multifactorial process. The last few hours of are characterized by uterine contractions that effect cervical dilation and cause the fetus to descend through the birth canal in an orderly manner.¹ Labour which is unduly prolonged is likely to give rise distress namely maternal, fetal or obstetrician's distress. Many a times inspite of good utrine contractions cervix fails to dilate or dilates very slowly.² The subject of cervical dilatation and

progress of labour has puzzled obstetricians for a longtime, with prolonged labour having implications for both mother and the foetus. There is increased incidence for maternal distress, cesarean section, instrumental delivery, post partumhaemorrhage and sepsis. The foetus is exposed to a higher risk of infection and asphyxia.

Active Management of labour

Active management with new pharmacological and surgical interventions are now common and they have made the ugly nightmare of prolonged labour a buried memory of the past. Friedman, Phillipot, O'Driscio *et al* (1973) and others who have worked extensively on Partogram have scientifically proved the adage "Never let the sunset twice on a woman in labour". These studies have given us the concept of active management of labour.^{2,3,4} Uterine activity and the rate of cervical dilatation are two basic factors that determine the duration of labour.³ Various drugs have been tried over the last few decades which accelerate labour either by increasing the uterine activity or by accelerating cervical dilatation. An ideal antispasmodic for acceleration of cervical dilatation should have prompt and long lasting action with minimal side effects on mother and fetus. Drotaverine is a spasmolytic drugs that acts by inhibiting phosphodiesterase enzyme, thus reduces the duration of labour by enhancing the rate of cervical dilatation.

Drotaverine is an isoquinoline derivative which binds to the surface of smooth muscles and changes their membrane potential and permeability. It inhibits phosphodiesterase IV enzyme which breaks cAMP and cGMP which play an important role in regulation of smooth muscle tone.³ It specifically on spastic sites and corrects the cAMP and calcium imbalance relieving smooth muscle spasm.⁴

MATERIAL AND METHODS

The study was performed in uncomplicated full term patients in active phase of labour. Study sample included 140 patients irrespective of race, religion, economic background and Body mass index. The study was conducted in the Department of Obstetrics and Gynecology of Dr. Ulhas Patil Medical College and Hospital Jalgaon, Kh, Maharashtra. The study would be conducted from March 2013 to March 2014. Total 140 patients were included. Pregnant women with uncomplicated full term pregnancy in active phase of labour with cervical dilatation 4-5 cm by randomization were segregated in two groups. Randomized controlled study. Two groups were made each group was comparable. total 70 patients in each group.

Group I: Injection Drotaverine hydrochloride (Drotin)

Group II: No drugs were given (control)

Informed written consent was taken. Total 3 doses of Drotaverine intravenous bolus were given at 1 hour of interval or till delivery, in the case group. Oxytocin low dose protocol) iv infusion will be started as standardized dose starting with 8 drops infusion for the induction of labour in each group. All the patients will be analyzed as per standardized proforma. Uncomplicated full term pregnancy having cervical dilatation of 4-5cm were included. Complicated pregnancies with cervical dilatation less than 4cm and more than 5 cm were not included in the study. cervical dilatation measured with standard per vaginal examination with all aseptic precautions (one finer means 1.2 cm). Along with dilatation of cervix some minor side effects of drotaverine were also observed. permission of ethical committee taken. Gestational age was calculated at the time of enrollment according to the Naegele rule and confirmed of regular uterine contractions (each lasting for 30 seconds or more) at a rate of at least 3 every 10 minutes, with or without rupture of membranes. Note: As two patients, one each group, underwent cesarean section in first stage of labour (before full dilation), hence the number is 34 in both the groups in this table.

RESULTS

Total uncomplicated 140 full term patients were studied, 70 patients with injection drotaverine hydrochloride and

70 controls. In both the groups 35 primigravida and 35 multigravida each.

Table 1: Showing Mean duration of first stage of labour active phase

Groups	No. of patients	Primigravida			
		Mean (Min)	S.D.	P value	Significance
Cases	34	202.35	43.13	0.001	Significant
Control	34	241.91	28.44		
Groups	No. of patients	Multigravida			
		Mean (Min)	S.D.	P value	Significance
Cases	35	183	27.01	0.001	Significant
Control	35	207.28	32.61		

Note: As two patients, one each group, underwent cesarean section in first stage of labour (before full dilation), hence the number is 34 in both the groups in this table. In the table, p value is 0.001; this concludes injection drotaverine hydrochloride decreases duration of first stage of labour in active phase in primigravida and multigravida significantly.

Table 2: Showing mean rate of cervical dilatation in various groups

Groups	No. of patients	Primigravida			
		Mean (cm/hr)	S.D.	P value	Significance
Cases	34	2.02	0.58	<0.001	Significant
Control	34	1.55	0.23		
Groups	No. of patients	Multigravida			
		Mean (cm/hr)	S.D.	P value	Significance
Cases	35	2.12	0.23	<0.001	Significant
Control	35	1.78	0.30		

Note: As two patients, one each group, underwent cesarean section in first stage of labour (before full dilation), hence the number is 34 in both the groups in this table. In the table, p value is less than 0.001, this concludes injection drotaverine hydrochloride increases the rate of cervical dilatation in primigravida and multigravida significantly.

DISCUSSION

The present study was a randomized prospective study carried out at Dr. Ulhas Patil Medical College and Hospital Jalgaon, Kh, Maharashtra, during period from March 2013- March 2014. The comparison has been interm of parameters like:

- Effect on duration of 1st stage of labour
- Effect on cervical dilatation

Suranyi (1972)⁵ concluded that drotaverine hydrochloride was useful in primiparas by shorting 1st stage of labour and was also free side effects to mother and foetus.

Farkas m, Vishi S (1988)⁶ Found that Drotaverine was primarily beneficial to primiparas by causing shortening of 1st stage of labour and had no significant side effects on foetus or mother. J.B. Sharma *et al* (2001)⁷ compared efficacy and safety of Drotaverine hydrochloride and valethamate bromide in shortening the duration of labour. They concluded that both are effective in acceleration of labour, however Drotaverine hydrochloride accelerates labour more rapidly and is associated with lesser side effects. Poornima R. Ranka, Varsha A Hishikar (2002)⁸ found that Drotaverine hydrochloride was both safe and effective in decreasing total duration of labour with no undesirable side effects on mother or foetus.

CONCLUSION

Injection Drotaverine hydrochloride is effective in reducing the duration of labour by hastening cervical dilation.

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