

Comparative Study of Normal Progression of Labour Vs use of Injection Drotaverine Hydrochloride and Injection Valethamate Bromide on Cervical Dilatation and Progression of Labour

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Abstract:-

➤ Objective:

To compare the normal progression of labour vs use of injection Drotaverine Hydrochloride and injection Valethamate Bromide on cervical dilatation and progression of labour.

➤ Method:

This prospective randomised study was conducted in obstetrics and gynecology department at Navodaya Medical College Hospital and Research Centre , Raichur involved 100 pregnant women admitted to labour room for delivery during the study period of one year . Written informed consent was taken. After taking history, general and obstetrics examination was done and contracted pelvis was ruled out.

Group I included 50 pregnant women (n=50) who were allowed for spontaneous progression of labour.

Group II included 50 pregnant women(n=50) who received injection Drotaverine hydrochloride and injection valethamate bromide and effect on cervical dilatation and progression of labour was noted and compared.

➤ Results:

The mean rate of cervical dilatation was 1.2cm/hr in primigravida and 1.5cm/hr in multigravida in group I compared to group II with mean rate of cervical dilatation in primigravida is 2.8cm/hr and 3.5cm/hr in multigravida which is statistically significant (p <0.01)

In group I the mean duration of active phase of labour in primigravida was 197 mins and 178 minutes in multigravida compared to 98 minutes in primigravida and 81 minutes in multigravida in group II which is statistically significant (p value <0.01) . there

was no statistically significant difference found in two groups with respect to mode of delivery (p=0.835)

➤ Conclusion:

Comparison of cervical dilatation rates and progression of labour revealed a significant acceleration in the drug group, surpassing the control group.

Keywords:- Labour , Spontaneous Progression, Drotaverine Hydrochloride, Valethamate Bromide.

I. INTRODUCTION

Labour is a normal physiological process of expulsion of fetus and placenta . Progress of labour depends upon the strength and frequency of uterine contractions and effacement and dilatation of cervix.1Labour Dystocia is difficult labor and characterized by abnormally slow labor progress. Causes can be abnormalities of the powers-poor uterine contractility and maternal expulsive effort; of the passenger-the fetus; and of the passage-the pelvis and lower reproductive tract.2Valethamate bromide (epidosin) is a potent, rapidly acting, spasmolytic and musculotropic agent, which relieves the spasm of the smooth muscles of the cervix. Drotaverine, a benzyl isoquinoline derivative is a selective inhibitor of phosphodiesterase type 4 enzyme which is present in high concentration in myometrium near term, thus acts as a spasmolytic agent, facilitating cervical dilatation during labor3.

II. MATERIALS AND METHODS

All antenatal patients admitted to labour room for delivery in the department of Obstetrics and Gynaecology, Navodaya Medical College Hospital and Research Centre, Raichur during the study period.

- **Study site:** Navodaya Medical College Hospital and Research Centre, Raichur
- **Study design:** Prospective randomized trial
- **Study period:** 1 year
- **Sample size:** 100 samples

➤ *Inclusion Criteria:*

- Live singleton pregnancy at term
- Both primigravida and multigravida
- Cephalic presentation
- Spontaneous onset of labour

➤ *Exclusion Criteria:*

- Ruptured membranes
- Multiple gestation
- Non-cephalic presentation
- Cephalopelvic disproportion
- Previous history of cervical surgery
- Prior history of cesarean section

III. METHODOLOGY

A detailed history, thorough general examination was done followed by detailed obstetric examination to know the height of fundus, presentation and position, fetal heart sounds.

Vaginal examination was done to know the position, effacement and dilatation of cervix and station of presenting part, status of membranes, for assessment of pelvis and to rule out contracted pelvis.

Patients were randomly allotted to 1 of following groups, regardless of age and parity

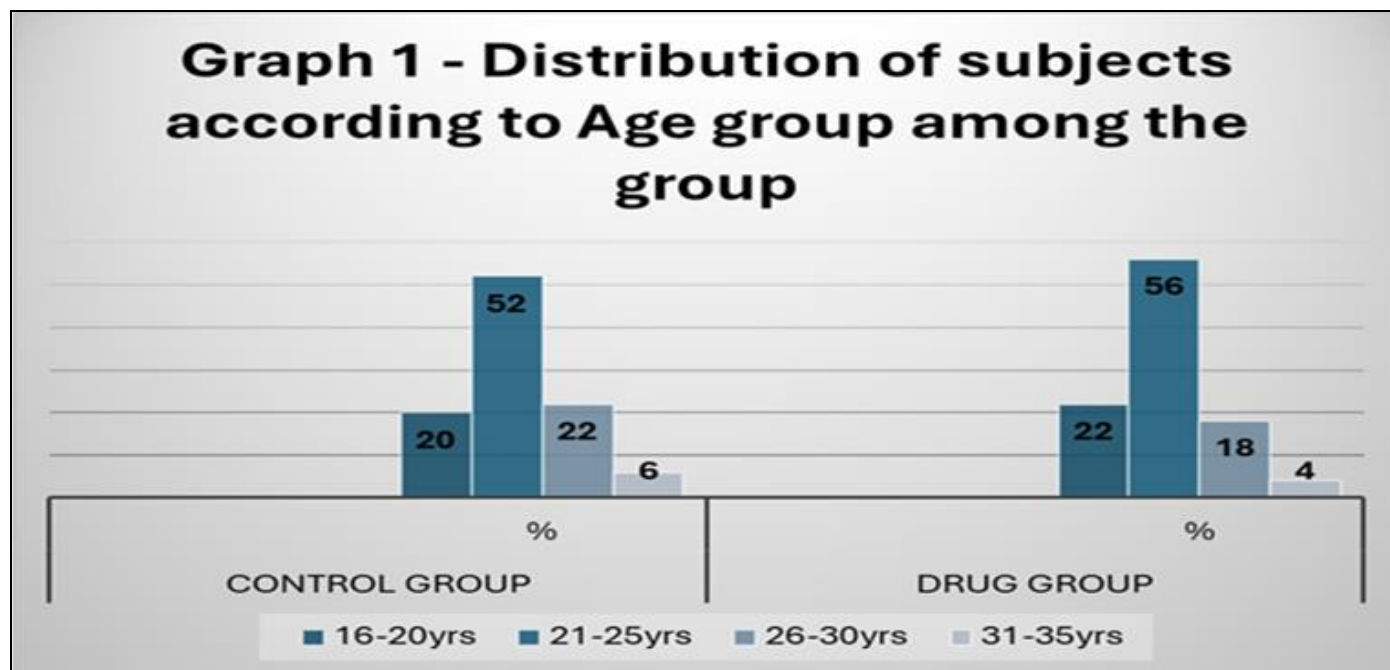
- Group I: Control group 50; (n=50) pregnant women who were allowed for spontaneous progression of labour.
- Group II: Study group 50 ; (n=50) pregnant women who received injection Drotaverine Hydrochloride and injection Valethamate Bromide

In study group after 4 cm of cervical dilatation both injection drotaverine hydrochloride 40 mg intramuscular and injection valethamate bromide 8mg intramuscular was administered and effacement and dilatation of cervix was noted.

The effect on cervical dilatation and progression of labour was noted.

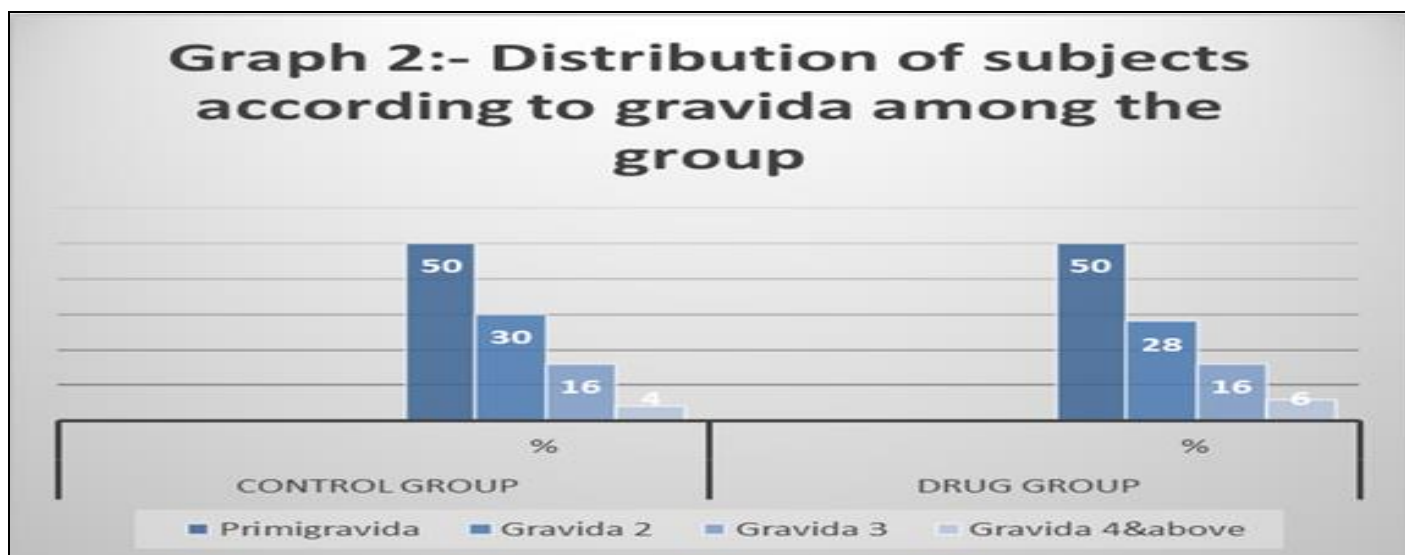
Mode of delivery, maternal side effects and fetal outcomes was noted and tabulated.

IV. RESULTS



Graph 1 Distribution of subjects according to age group among the groups

Most patients were in the age group of 21-25 years which contributed 52% in control group and 56% in drug group with p Value is 0.914 which is not statistically significant.



Graph 2:- Distribution of subjects according to gravida among the group –

Most of the patients in our study were primigravida nearly 50% in both groups with pvalue of 0.956 which is not statistically significant.

Table 1: Comparison of Rate of Cervical Dilatation among the Group

	Control Group		Drug Group		P value
	Mean	SD	Mean	SD	
Primigravidae	1.2	0.34	2.8	0.67	<0.01
Multigravidae	1.5	0.47	3.5	0.74	<0.01

Table 1 shows the mean rate of cervical dilatation was 1.2cm/hr in primigravida and 1.5cm/hr in multigravida in control group compared to drug group with mean rate of cervical dilatation in primigravida is 2.8cm/hr and 3.5cm/hr in multigravida which is statistically significant (P<0.01)

Table 2: Comparison of Duration of Active Phase of Labour (in min) among the group

	Control Group		Drug Group		P value
	Mean	SD	Mean	SD	
Primigravidae	197	34	98	16	<0.01
Multigravidae	178	28	81	13	<0.01

Table 2 shows that in control group mean duration of active phase of labour in primigravida was 197 minutes and 178 minutes in multigravida compared to 98 minutes in primigravida and 81 minutes in multigravida in drug group which is statistically significant (P<0.01)

Table 3: - Comparison of Duration of II Stage of Labour (in min) among the group

	Control Group		Drug Group		P value
	Mean	SD	Mean	SD	
Primigravidae	26.2	4.3	21.3	5.1	<0.01
Multigravidae	23.4	3.7	19.5	2.9	<0.01

Table 3 shows significant difference in shortening of II stage of labour in both primigravida and multigravida patients in drug group compared to control group with P value <0.01

Table 4: Comparison of Mode of Delivery in Primigravidae and multigravida among the group

Primigravida	Control group		Drug Group	
	N	%	N	%
NVD	32	64	38	76
LSCS	18	36	15	24

Mutligravida	Control Group		Drug Group	
	N	%	N	%
NVD	22	44	26	52
LSCS	28	56	24	48

Table 4 shows the P Value is 0.315 in primigravida and 0.835 in multigravida so there was no statically difference found between groups with respect to mode of delivery.

Table 5: Comparison of Maternal and Fetal Outcomes among the Group

	Control Group		Drug Group	
	N	%	N	%
Dryness of mouth	5	10	33	66
Nasuea	16	32	28	56
Fetal distress	18	36	22	44
Apgar <7 at 1min	2	4	2	4
Apgar >7 at 5min	30	60	26	52
NICU Admission	5	10	8	16

Table 5 shows most common maternal side effect seen was dryness of mouth which was 66% in drug group compared to 10% in control group. Fetal distress cases were seen more in drug group nearly 44% as compared to 36% in control group. APGAR score was > 7 at 5 min in 60% of control group and 52% in drug group. Cases of NICU admissions were more in drug group 16% compared to control group.

V. DISCUSSION

In present study graph 1 shows most patients were in the age group of 21-25 years with no statistical significant difference in age group (p value – 0.914)

In a study by Hemant et al the majority of the patients belonged to the age group of 23-26 years there was no significant difference between the age distribution of the groups⁴.

In present study table 1 shows positive correlation between the mean rate of cervical dilatation among drug group both in primigravida and multigravida compared to control group (p value <0.01)

In a study by Chandana et al the mean rate of cervical dilatation in the Drotaverine Hydrochloride group was 1.7 cm/hour, while in-the Valethamate Bromide group it was 1.2 cm/hour, which was statistically significant⁵.

In present study table 2 shows statistically significant difference in mean duration of active phase of labour in drug group compared to control group(p value <0.01)

In a study by Chagnati et al the decrease in mean duration of Active phase is 96.81 minutes in Drotaverine group compared to control, and 24.58 minutes compared with Valethamate which is also statistically significant.⁶

In present study table 3 shows statistically significant difference in shortening of II stage of labour in both primigravida and multigravida patients in drug group compared to control group (P value <0.01).

Change de PR in their study found that mean duration of second stage of labor to be 24.1mins,21.8mins,20.7mins in Valethamate, Drotaverine, Control groups respectively which was significant.⁷

VI. CONCLUSION

Cervical dilation is an important factor in the progress of delivery during active labor. Some women may experience delayed or insufficient cervical dilation, resulting in prolonged labor, fetal distress.

Prolonged labor is associated with increased maternal and perinatal complications such as PPH, sepsis, increased instrumental deliveries ,fetal distress, birth asphyxia , NICU admissions. To minimise the duration of labour without compromising the maternal and fetal outcomes pharmacological agents such as Drotaverine hydrochloride

and valethamate bromide are employed to enhance cervical dilation and facilitate the delivery process. These drugs do not decrease the tone of uterine contractions ,helps in cervical dilatation, accelerate the labor significantly by shortening the duration of the first stage of labor .

THIS PAPER WAS AWARDED 1ST PRIZE IN PAPER PRESENTATION IN FOGSI - 34TH KARNATAKA STATE OBSTETRICS AND GYNECOLOGY ASSOCIATION HELD IN HASSAN.

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- [3]. European Journal of Molecular & Clinical Medicine (EJMCM) ISSN: 2515-8260 Volume 10, Issue 01, 2023 Journal of Cardiovascular Disease Research ISSN: 0975-3583, 0976-2833 VOL14, ISSUE05, 2023 609 Comparison of the Effectiveness of Drotaverine Hydrochloride and Valethamate Bromide in Promoting Cervical Dilatation during Active Labour: An Observational study Dr. Chandana Loke¹, Dr. Pavan Soleti², Dr. Dharavath Bhanu Prakash³, Dr. Pavani Chinnapaka^{4*}, Dr. C. Muralidhar
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