

ORIGINAL ARTICLE

Comparison of hyoscine butyl bromide and drotaverine in pregnancy

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ABSTRACT:

Background: Both the obstetrician and the laboring woman would like to accomplish the delivery in the shortest possible time without compromising the maternal and fetal safety. The present study compared hyoscine butylbromide and drotaverine. **Materials & Methods:** The present study was conducted on 86 pregnant females. They were divided into 2 groups. The women in group I were injected drotaverine 40mg and in group II were injected one ampoule of hyoscine butylbromide (hyoscine butylbr) - 20 mg. Average dilatation, average dilatation at injection, average Bishop's score was measured. **Results:** Average gestation age in group I patients was 280.2 days and I group II was 282.3 days, average dilatation < 5cm was 3.5 in group I and 3.4 in group II, average dilatation >5cm was 5.7 in group I and 6.1 in group II, average dilatation at injection (cm) was 4.16 in group I and 4.17 in group II, average Bishop's score < 10 was 8.12 in group I and 8.14 in group II, average Bishop's score >10 was 10.3 in group I and 10.1 in group II. The difference was non-significant (P> 0.05). **Conclusion:** Authors found both agents equally effective as an antispasmodic in first stage of labour.

Key words: Anesthesia, hyoscine butylbromide, labour.

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INTRODUCTION

Both the obstetrician and the laboring woman would like to accomplish the delivery in the shortest possible time without compromising the maternal and fetal safety.¹ Hence, along with early amniotomy and early administration of oxytocin, to accelerate labor many advise the use of antispasmodic agents like drotaverine, hyoscine butylbromide, dicyclomine valethamide bromide etc. to hasten the first stage of labor.² While valethamide and drotaverine have been the subject of a number of studies a study comparing hyoscine butylbromide has not been done, to the best of our knowledge.³

The first stage begins when spaced uterine contractions of sufficient frequency, intensity, and duration are attained to bring about cervical thinning or effacement. This labor stage ends when the cervix is fully dilated – about 10 cm – to allow passage of the term-sized fetus. The first stage of labor, therefore, is the stage of cervical effacement and dilatation.⁴

DH is an isoquinoline derivative and its chemical name is tetraethoxy-1 benzyl 1, 2, 3, 4 tetrahydro isoquinoline hydrochloride. It is a unique smooth muscle relaxant and acts by inhibiting phosphodiesterase-IV enzyme that results in increased cAMP. VB is an anticholinergic smooth muscle relaxant. It is an ester with chemical name ethanaminium N, N - diethyl N-methyl 2(3

methyl-1-oxo-2 phenyl pentyl) bromide. It acts by competitively inhibiting the muscarinic receptors of smooth muscle cells followed by inhibition of phospholipase C and decreases intracellular calcium.⁵ The present study compared hyoscine butylbromide and drotaverine.

MATERIALS & METHODS

The present study was conducted in the department of Gynaecology & Anesthesiology. It comprised of 86 pregnant females. They were informed regarding the study and written consent was obtained. Ethical clearance was taken prior to the study.

General information such as name, age etc. was recorded. They were divided into 2 groups. The women in group I were injected drotaverine 40mg (one ampoule) intravenously at 3-5cm dilatation, if admitted in latent labor or at first examination if already more than 5 cm dilatation. The women in group II were injected one ampoule of hyoscine butylbromide (hyoscine butylbr) - 20 mg. Continuous fetal heart rate (FHR) was measured. Average dilatation, average dilatation at injection, average Bishop's score was measured. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

| Total- 86 | | |
|-----------|-----------------------|-----------------------------------|
| Groups | Group I (drotaverine) | Group II (hyoscine butyl bromide) |
| Number | 43 | 43 |

Table I, graph I shows that group I patients were injected drotaverine 40mg (one ampoule) intravenously and in group II were injected with hyoscine butylbromide (hyoscine butyl br) - 20 mg.

Graph I Distribution of patients

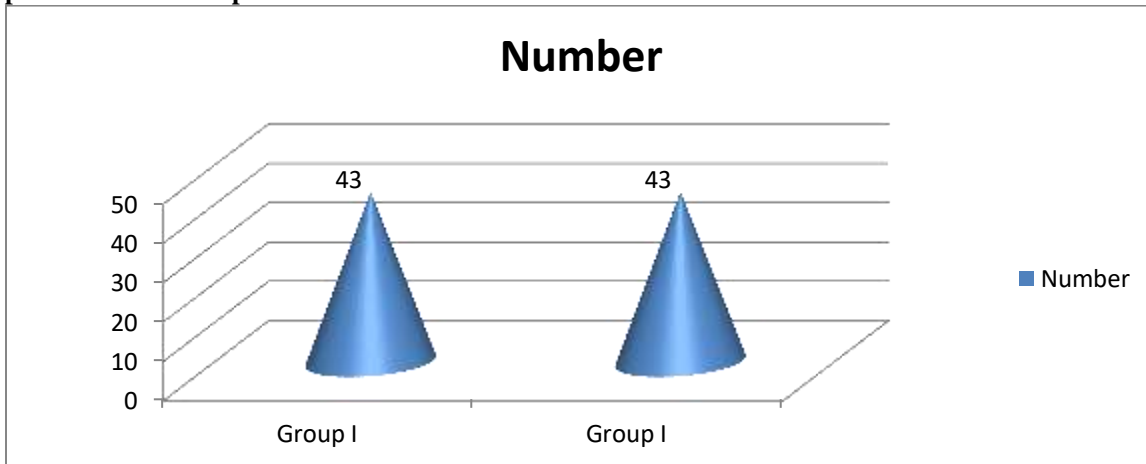
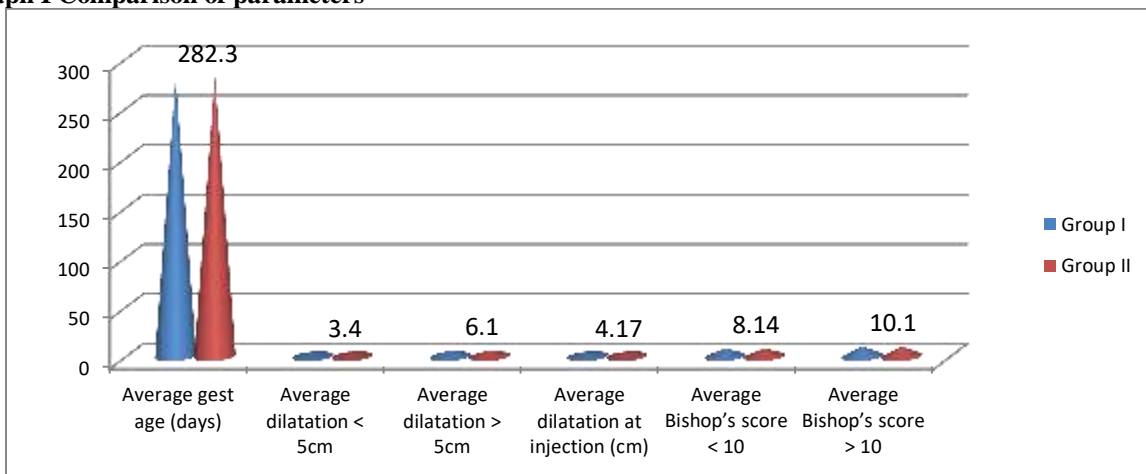


Table II Comparison of parameters

| Parameters | Group I | Group II | P value |
|--------------------------------------|---------|----------|---------|
| Average gest age (days) | 280.2 | 282.3 | P>0.05 |
| Average dilatation < 5cm | 3.5 | 3.4 | P>0.05 |
| Average dilatation > 5cm | 5.7 | 6.1 | P>0.05 |
| Average dilatation at injection (cm) | 4.16 | 4.17 | P>0.05 |
| Average Bishop's score < 10 | 8.12 | 8.14 | P>0.05 |
| Average Bishop's score > 10 | 10.3 | 10.1 | P>0.05 |

Table II, graph I shows that average gestation age in group I patients was 280.2 days and I group II was 282.3 days, average dilatation < 5cm was 3.5 in group I and 3.4 in group II, average dilatation >5cm was 5.7 in group I and 6.1 in group II, average dilatation at injection (cm) was 4.16 in group I and 4.17 in group II, average Bishop's score < 10 was 8.12 in group I and 8.14 in group II, average Bishop's score >10 was 10.3 in group I and 10.1 in group II. The difference was non- significant (P> 0.05).

Graph I Comparison of parameters



DISCUSSION

According to Orji (2008), the WHO partograph is similar for nulliparas and multiparas. Labor is divided into a latent phase, which should last no longer than 8 h, and an active phase.⁶ The active phase starts at 3 cm dilatation, and progress should be no slower than 1 cm/h. A 4-h wait is recommended before intervention when the active phase is slow. The first stage begins when spaced uterine contractions of sufficient frequency, intensity, and duration are attained to bring about cervical thinning or effacement. This labor stage ends when the cervix is fully dilated – about 10 cm – to allow passage of the term-sized fetus. The first stage of labor, therefore, is the stage of cervical effacement and dilatation.⁷ The present study compared hyoscine butylbromide and drotaverine.

In this study, group I patients were injected drotaverine 40mg (one ampoule) intravenously and in group II were injected with hyoscine butylbromide (hyoscine butylbr) - 20 mg. A et al⁸ found that the two groups were comparable with regards to the gestational age, parity, and average dilatation of cervix at injection of the antispasmodic agents. Average time to full cervical dilatation was significantly less in Group B in both nulliparas ($P < 0.01$) and in multiparas ($P < 0.05$). Similarly, the average rate of cervical dilatation was significantly more in Group B, both in nulliparas ($P < 0.007$) and in multiparas ($P < 0.02$). The same findings were obtained when Bishop's score was taken as baseline. No significant difference in the side effects of either drug was observed. The difference in the duration of second and third stages of labor and the blood loss were statistically insignificant.

We found that average gestation age in group I patients was 280.2 days and in group II was 282.3 days, average dilatation < 5 cm was 3.5 in group I and 3.4 in group II, average dilatation > 5 cm was 5.7 in group I and 6.1 in group II, average dilatation at injection (cm) was 4.16 in group I and 4.17 in group II, average Bishop's score < 10 was 8.12 in group I and 8.14 in group II, average Bishop's score > 10 was 10.3 in group I and 10.1 in group II. The difference was non-significant ($P > 0.05$). Pali et al⁹ evaluate and compared the effects of drotaverine and valethamate on cervical dilatation. In primigravidae and multigravidae the average duration of active phase is shortened by 3 hours with 1.92 cm/hour cervical dilatation in drotaverine group and 1 hour 45 minutes with 1.44 cm/hour in valethamate group ($P < 0.05$). There was no significant difference in the duration of second and third stages in both groups. No obstetrical complications or major side effects observed in both groups.

Drotaverine hydrochloride or isoquinoline 1,2,3,4-tetrahydro 6,7 diethoxy-1-(C-3,4 - diethoxy phenylmethylene) hydrochloride is a highly potent spasmolytic agent, acting on the smooth muscle but is

devoid of anticholinergic effects as it acts through inhibitory effect on phosphodiesterase enzyme, mainly PDE IV. Hyoscine butylbromide or Scopalamine hydrochloride is 6,7-Epoxy-8-butyl-3(S)- tropoyloxy tropamine bromide and is a quaternary derivative of atropine which acts as an anticholinesterase. It acts on the muscarinic receptors of the smooth muscles and competes for the receptor sites with acetylcholine.¹⁰

CONCLUSION

Authors found both agents equally effective as an antispasmodic in first stage of labour.

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