

Original Research

Assessment of outcome of different concentration of Hyoscine Butylbromide on labor

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ABSTRACT:

Background: Attempt to shorten labor time for both mother and fetus are useful. The present study was conducted to compare effect of different concentration of Hyoscine Butylbromide on labor. **Materials & Methods:** The present study was conducted 30 prim gravid women with term gestation. All were divided into 2 groups of 15 each. In group I 40 mg of intra-venous HBB in the early active phase of labor was given and in group II 60 mg of intra-venous HBB was given. **Results:** Each group had 15 patients each. Group I patients were given 40 mg of intra-venous HBB and group II received 60 mg of intra-venous HBB. The mode of delivery in group I was abdominal seen in 5 and 4 in group II. It was vaginal seen 10 in group I and 11 in group II. The difference was non-significant ($P > 0.05$). **Conclusion:** Authors found 40mg HBB and 60 mg HBB found to be efficacious at both concentrations. There was no significant difference in their outcome.

Key words: Labor, HBB, Mother

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INTRODUCTION

Attempt to shorten labor time for both mother and fetus are useful. Active management of labor was introduced in 1960s as a method to prevent prolonged labor. Prolonged labor is one of the most important risk factors for perinatal compromise and, if caused by obstructed labor, it carries the risk of uterine rupture, postpartum hemorrhage (PPH), puerperal sepsis, and maternal death.¹ The two major factors that determine duration of labor are uterine contractility and rate of cervical dilation.² In addition to mechanical factors such as sweeping of membranes, cervical stretching and amniotomy, various pharmacological agents have been found to facilitate cervical dilation. The role of oxytocin and prostaglandins has been established worldwide in augmentation of labor and the cervical application of hyaluronidase has also been used with some success.³

Labor usually starts within 2 weeks of (before or after) the estimated date of delivery. Exactly what causes labor

to start is unknown. On average, labor lasts 12 to 18 hours in a woman's first pregnancy and tends to be shorter, averaging 6 to 8 hours, in subsequent pregnancies. Every woman's labor is different.⁴

HBB is an alkaloid that acts by inhibiting cholinergic transmission in the abdominal and pelvic parasympathetic ganglia. Through this it relieves spasm in the smooth muscles of the female genital organs, aiding cervical dilatation.⁵ The present study was conducted to compare effect of different concentration of Hyoscine Butylbromide on labor.

MATERIALS & METHODS

The present study was conducted in the department of Obstetrics & Gynaecology. It comprised of 30 prim gravid women with term gestation. Ethical approval was obtained from institute prior to the study. All were informed regarding the study and written consent was obtained.

Data such as name, age etc. was recorded. All were divided into 2 groups of 15 each. In group I 40 mg of intra-venous HBB in the early active phase of labor was given and in group II 60 mg of intra-venous HBB was given. In both groups, gestational age, APGAR score at

1st minute, 5th minute, blood loss, mode of delivery etc. was compared. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I (40 mg HBB)	Group II (60 mg HBB)
Number	15	15

Table I shows that each group had 15 patients each. Group I patients were given 40 mg of intra-venous HBB and group II received 60 mg of intra-venous HBB.

Table II Mode of delivery

Mode	Group I	Group II	P value
Vaginal	10	11	0.21
Abdominal	5	4	

Graph II shows that mode of delivery in group I was abdominal seen in 5 and 4 in group II. It was vaginal seen 10 in group I and 11 in group II. The difference was non- significant (P> 0.05).

Graph I Comparison of parameters

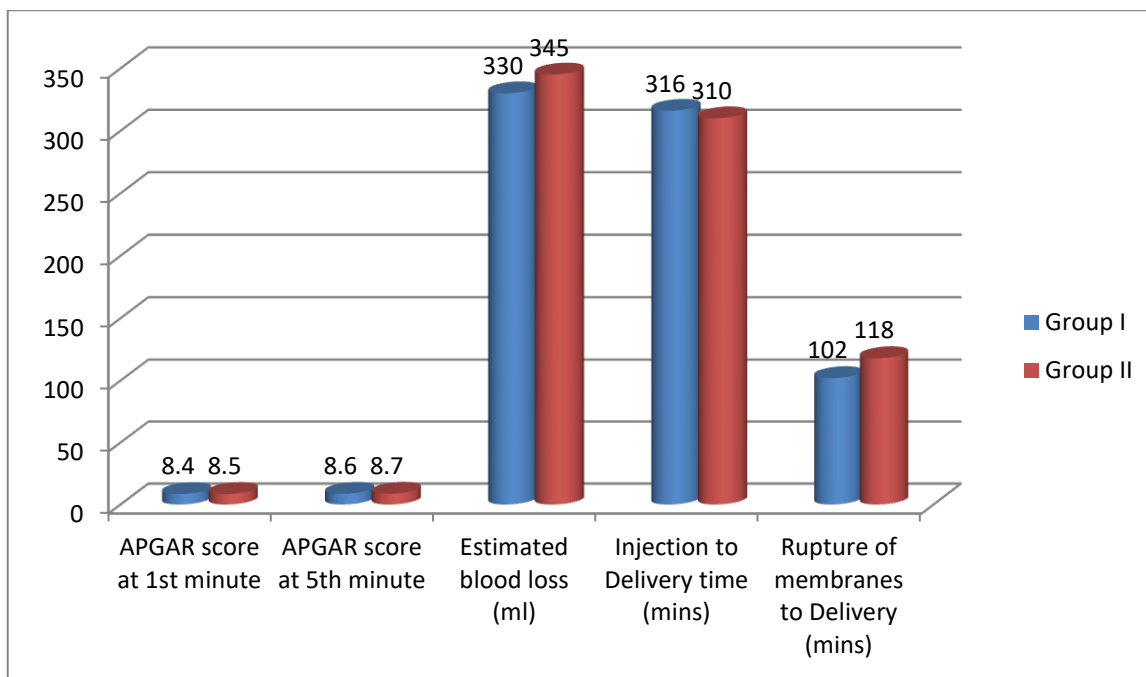


Table II shows that APGAR score at 1st minute in group I was 8.4 and in group II was 8.5, APGAR score at 5th minute in group I was 8.6 and in group II was 8.7. Estimated blood loss in group I was 320 ml and in group II was 345 ml, injection to delivery time in group I was 316 minutes and in group II was 310 minutes, rupture of membranes to delivery was 102 minutes in group I and 118 minutes in group II. The difference was non- significant (P> 0.05).

DISCUSSION

Spasmolytic drugs are frequently employed to overcome cervical spasm and thus reduce the duration of labor. One of these spasmolytics is hyoscine butylbromide which has been used to shorten the duration of labor.⁶ Hyoscine butylbromide acts primarily by blocking the transmission of neural impulses in the intraneural parasympathetic ganglia of abdominal organs, apparently inhibiting the cholinergic transmission in the synapses.⁷ After intravenous administration, the substance is rapidly distributed ($t_{1/2}$ = 29 minutes) into the tissues. Hyoscine butylbromide does not pass the blood-brain barrier, and plasma protein binding is low; approximately half of the clearance is renal, and the main metabolites found in urine bind have no significant clinical action.⁸ The present study was conducted to compare effect of different concentration of Hyoscine Butylbromide on labor.

In this study, each group had 15 patients each. Group I patients were given 40 mg of intra-venous HBB and group II received 60 mg of intra-venous HBB. Singh et al⁹ conducted a prospective study on 120 women with term gestation; in active labor. The patients were chosen by simple randomization and were divided into 3 groups- A, B and C respectively of 40 patients each. Group A received intramuscular injection drotaverine hydrochloride one ampule (40 mg), group B received intramuscular injection hyoscine butylbromide (20 mg) and group C which was control group, received no drug. The mean rate of cervical dilatation with buscopan was 2.23cm/hr while it was 2.03cm/hr and 2.08cm/hr in drotaverine group and control group respectively. Thus the drug delivery interval was less in buscopan group. Mean duration of active phase of first stage of labor was 156.13 minutes in buscopan group against 181.25 minutes in drotaverine group though buscopan was found to have less effect on duration of second stage of labor.

We found that mode of delivery in group I was abdominal seen in 5 and 4 in group II. It was vaginal seen 10 in group I and 11 in group II. Wanjala et al¹⁰ conducted a study in which a total of 114 primigravid women were recruited into the study and randomized into the control arm (n=59) and study arm (n=55). The 40mg and 60mg arms were comparable for socio-demographic and obstetric characteristics. Injection to delivery time was 340 (223–483) minutes in the 40mg arm and 305 (253–475) minutes in the 60mg arm, a difference that is not statistically significant ($p=0.905$). Seven (12 %) and five (9 %) of patients in the 40mg and 60mg arm respectively needed delivery via caesarean section ($p=0.602$). 5 minute APGAR scores were 9.7 in the 40mg arm and 9.8 in the 60mg arm. Estimated blood loss was 300mls in the 60mg arm and 350mls in the 40mg arm ($p=0.152$). Head to head, 60mg of parenteral HBB is not superior to 40mg on their effects on duration of labor and fetomaternal outcomes.

We found that APGAR score at 1st minute in group I was 8.4 and in group II was 8.5, APGAR score at 5th minute in group I was 8.6 and in group II was 8.7. Estimated blood loss in group I was 320 ml and in group II was 345 ml, injection to delivery time in group I was 316 minutes and in group II was 310 minutes, rupture of membranes to delivery was 102 minutes in group I and 118 minutes in group II.

CONCLUSION

Authors found 40mg HBB and 60 mg HBB found to be efficacious at both concentrations. There was no significant difference in their outcome.

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