Role of Intravenous Hyoscine Butylbromide Injection on The Duration and Progress of First Stage of Labour in Primigavidae

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ABSTRACT

Background: Labour is a physiologic process that results in expulsion of the products of conception outside the uterus throughout 3 stages. It is achieved with changes in the biochemical connective tissue and with gradual effacement and dilatation of the uterine cervix as a result of rhythmic uterine contractions of sufficient frequency, intensity, and duration. Hyoscine butylbromide (HBB) belongs to the parasympatholytic group of drugs and is a semisynthetic derivative of scopolamine. It is a quaternary ammonium derivative, which exerts a spasmylocytic action on the smooth muscle of the gastrointestinal, biliary, and genitourinary tracts.

Methods: A case control study conducted on 150 women coming to Al Azhar University Maternity Hospital. Patients who meet the inclusion criteria were asked to participate in the study and a verbal consent was obtained from each patient. Patients were divided into three equal groups (A, B, C). A single dose of the drug (placebo or HBB 20 mg or HBB 40 mg) was injected intravenously slowly to groups A, B, C respectively. Labouring mothers were monitored in bed. Vaginal examination was conducted every two hours. The duration of the first stage was calculated from the time of cervical dilatation of three to four centimeters in active labour until a fully dilated cervix was observed.

Results: showed significant difference between the three groups regarding the progress of labour. There was a significant decrease in the duration of the active phase of first stage of labour in study groups who received hyoscine butylbromide compared to placebo group. The decrease in the duration of active phase of first stage of labour was not related to the drug dose. There was no significant difference between the three groups regarding the second stage duration. There were no significant adverse effects of hyoscine butylbromide on either mothers or neonates.

Conclusion: Hyoscine butylbromide helps to decrease the duration of active phase of labour in primigravidae with no side effects on either the mother or the neonate. This decrease is not related to the dose of the drug. Hyoscine butylbromide (HBB) belongs to the parasympatholytic group of drugs and is a semisynthetic derivative of scopolamine. It is a quaternary ammonium derivative, which exerts a spasmylocytic action on the smooth muscle of the gastrointestinal, biliary, and genitourinary tracts.

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Keywords: normal labour, augmentation of labour, hyoscine butylbromide.

INTRODUCTION

Normal labour is a continuous process which has been divided into three stages for the purposes of study, with first stage further subdivided into two phases. The first stage of labour is the interval between the onset of labour and full cervical dilatation. The second stage of labour is the interval between full cervical dilatation and delivery of the fetus. The third stage of labour is the period between the delivery of the fetus and delivery of the placenta.

The first stage begins with regular uterine contractions and ends with complete cervical dilatation at 10 cm. First stage is divided according to Friedman's landmark studies of 500 nulliparous women, into an early latent phase and an ensuing active phase. The latent phase starts with mild, irregular uterine contractions that soften and shorten the cervix. The contractions become progressively more rhythmic and stronger. This is followed by the active phase of labour, which usually begins at about three to four cm of cervical dilatation and is characterized by rapid cervical dilatation and descent of the presenting fetal part. Measurement of the length of labour is inherently imprecise for several reasons. The starting point cannot be identified by objective means. The cervix undergoes various structural alterations in late pregnancy, and women do not begin labour with identical cervical anatomy. Labour onset is a self-diagnosis, and women vary in their recognition and response to painful contractions. As such, the duration of the latent phase is particularly difficult to quantify. Therefore, cervical dilatation on admission to the hospital is often used as the first data point. The principle of active management of labour was introduced in Dublin to shorten the length of labour while achieving or maintaining a low rate of caesarean delivery, the active management of labour refers to active control, rather than passive observation over the
course of labour by the obstetric provider. When necessary obstetricians use cervical ripening agents to decrease the duration of labour. Intravaginal misoprostol (prostaglandin E1 analogue) and dinoprostone (prostaglandin E2) are the most commonly used agents for cervical ripening. Hyoscine-n-butylbromide is a derivative of hyoscine which is extracted from leaves of the Dubosia tree found mainly in Australia. It is known by its spasmylytic action and has been 
as since 1951. Hyoscine butylbromide (HBB) belongs to the parasympatholytic group of drugs and is a semisynthetic derivative of scopolamine. It is an effective antispasmodic drug without the untoward side effects of atropine as it does not cross the blood brain barrier therefore no central action is seen. It is a quaternary ammonium derivative, which exerts a spasmylytic action on the smooth muscle of the gastrointestinal, biliary, and genitourinary tracts. It acts primarily by blocking the transmission of neural impulses in the intraneural parasympathetic ganglia of abdominal organs, apparently inhibiting cholinergic transmission in the synapses of the abdominal and pelvic parasympathetic ganglia, thus relieving spasms in the smooth muscles of gastrointestinal, biliary, urinary tract, and female genital organs, especially the cervico-uterine plexus, thus aiding cervical dilatation.

**PATIENT AND METHODS**

**Study design**

This was a case control study conducted at Al Azhar university maternity hospital. 150 patients was selected from outpatient Gynaecological clinic at Al Azhar University Maternity Hospital to study the effect of hyoscine-n-butylbromide on the duration of the first stage of labour in primigravidae.

**Inclusion criteria:**

1. Age: 18 – 35 years old
2. Primigravidae.
3. Gestational age between completed 37- 41 weeks + 6 days.
4. Uncomplicated cephalic singleton pregnancy occipito-anterior position.
5. Established spontaneous active labour (defined as the presence of at least three regular uterine contractions over 10 minutes with cervical dilatation three to four centimeters) with cervical effacement not less than 50%.
6. Intact amniotic membranes.

**Exclusion criteria**

1. Multigravidae.
2. Multiple fetus.
3. Malpresentation.
4. Patients with indications of elective caesarean section.
5. Medical conditions associated with pregnancy e.g. preeclampsia, diabetes mellitus.
6. Contraindications for hyoscine butylbromide which include known allergy to hyoscine or other antiparinics (e.g., atropine, scopolamine), myasthenia gravis, megacolon or glaucoma.
7. Patients presented to causality with spontaneous rupture of membranes.
8. Spontaneous rupture of membranes during the active phase of first stage of labour.
9. Oxytocin induction or augmentation.
10. Patients who underwent epidural anesthesia or other types of analgesia.

**Methods**

Patients who met the inclusion criteria were asked to participate in the study and a verbal consent was obtained from each patient after explaining thoroughly the nature and the scope of the study. For each patient:

1. Complete history was taking to exclude allergy to hyoscine butylbromide, medical disorders with pregnancy (preeclampsia, diabetes mellitus, heart disease …etc.) and any contraindication for vaginal delivery.
2. General examination of the patients including (Pulse, blood pressure, temperature).
3. Obstetric abdominal examination including fetal lie, fetal presentation, head station and uterine contractions.
4. Vaginal examination including cervical dilatation, effacement and position, state of fetal membranes, presenting part, position of fetal head and pelvic adequacy.
5. Obstetric ultrasound to detect fetal gestational age, fetal birth weight amount of liquor, site of placental attachment and fetal heart rate.

Patients were categorized into three equal groups:

- **Group A:** included 50 pregnant patients. They received two ml of normal saline intravenously as a placebo. (Active phaseA)
- **Group B:** included 50 pregnant patients. They received (20mg) hyoscine butylbromide (one ml HBB+ one ml saline) intravenously. (Active phase)
- **Group C:** included 50 pregnant patients. They received two ml (40 mg) hyoscine butylbromide intravenously (HBB). (Active phase)

**RESULTS**

This study was conducted at Al Azhar University Maternity Hospital during the period between January 2017 and June 2017. A total of 150 primigravid women in the active phase of the first
stage of labor were recruited in this study. Patients who met the inclusion criteria were asked to participate in the study and a verbal consent was obtained from each patient. Patients were divided into three equal groups, each group consisted of 50 patients.

**Group A:** received two ml of normal saline intravenously as a placebo. **Group B:** received (20mg) hyoscine butylbromide (one ml HBB+ one ml saline) intravenously. **Group C:** received two ml (40 mg) hyoscine butylbromide intravenously (HBB).

### Table 1: showing basal characteristic data of the included women

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Placebo group</th>
<th>HBB 20 mg group</th>
<th>HBB 40 mg group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>24.43± 3.73</td>
<td>24.15± 3.82</td>
<td>24.87± 3.74</td>
<td>NS &gt;0.05</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>163.50± 4.67</td>
<td>162.65± 5.72</td>
<td>162.65± 5.72</td>
<td>NS &gt;0.05</td>
</tr>
<tr>
<td>Weight (Kg)</td>
<td>78.98 ± 9.02</td>
<td>78.65 ± 8.62</td>
<td>78.65 ± 8.62</td>
<td>NS &gt;0.05</td>
</tr>
<tr>
<td>Gestational Age (weeks)</td>
<td>39.12 ± 1.05</td>
<td>38.95 ± 1.02</td>
<td>38.95 ± 1.02</td>
<td>NS &gt;0.05</td>
</tr>
</tbody>
</table>

The following table showed no statistically significant differences (P value > 0.05) between women of the three groups concerning age, height, weight and gestational age.

### Table 2: showing the significance of basal characteristic data of the included women

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Placebo group</th>
<th>HBB 20 mg group</th>
<th>HBB 40 mg group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>175-288</td>
<td>145-220</td>
<td></td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Mean ± SD</td>
<td>231.39 ± 33.14</td>
<td>187.73 ± 20.92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3: active phase duration in placebo and HBB 20 mg groups

Comparing range, mean and SD of the duration of active phase of first stage of labor between control group and group which was given 20 mg of HBB showing statistically significant differences (P value < 0.05) which indicates the effect of HBB on the course of labor.

### Table 4: active phase duration in placebo and HBB 40 mg groups

Comparing range, mean and SD of the duration of active phase of first stage of labor between control group and group which was given 40 mg of HBB showing statistically significant differences (P value <0.05) which indicates the effect of HBB on the course of labor.

### Table 5: active phase duration in HBB 20 mg and HBB 40 mg groups. **(NS: non significant)**

Comparing range, mean and SD of the duration of active phase of first stage of labor between group which was given 20 mg of HBB and group which was given 40mg of HBB showed no statistically significant differences (P value > 0.05) which indicated that the dose of the drug has minor effect on the duration of active phase of first stage of labor.
Neonatal Outcome
Fetal weight was measured after delivery. The insignificant P value (>0.05) indicated that fetal weight had no effect on the study results. Apgar score was measured after delivery. The insignificant P value (>0.05) indicated that the HBB has no effect on neonatal wellbeing.

1. Side effects of Hyoscine-N-Butylbromide
The following table showed the common side effects of HBB and their prevalence among study groups. There were no statically significant differences between study groups concerning side effects.

Table 6: fetal outcome in each group (NS: non significant)

<table>
<thead>
<tr>
<th></th>
<th>Placebo group</th>
<th>HBB 20 mg group</th>
<th>HBB 40 mg group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal weight (gm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3221.21</td>
<td>3239.39</td>
<td>3170.31</td>
<td>NS &gt;0.05</td>
</tr>
<tr>
<td>SD</td>
<td>± 336.12</td>
<td>± 332.08</td>
<td>± 264.53</td>
<td></td>
</tr>
<tr>
<td>Apgar 1 min Mean</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>NS &gt;0.05</td>
</tr>
<tr>
<td>SD</td>
<td>± 0.5</td>
<td>± 0.55</td>
<td>± 0.5</td>
<td></td>
</tr>
<tr>
<td>Apgar 5 min Mean</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>NS &gt;0.05</td>
</tr>
<tr>
<td>SD</td>
<td>± 0.55</td>
<td>± 0.6</td>
<td>± 0.5</td>
<td></td>
</tr>
</tbody>
</table>

Table 7: prevalence of HBB side effects in each group. (NS: non significant)

<table>
<thead>
<tr>
<th></th>
<th>Placebo group</th>
<th>20 mg HBB group</th>
<th>40 mg HBB group</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry mouth</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>NS &gt;0.05</td>
</tr>
<tr>
<td>5%</td>
<td>0%</td>
<td>2.5%</td>
<td>2.5%</td>
<td></td>
</tr>
<tr>
<td>Facial Flushing</td>
<td>0</td>
<td>1</td>
<td>2.5%</td>
<td>2</td>
</tr>
<tr>
<td>0%</td>
<td>2.5%</td>
<td>5%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Tachy-cardia</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2.5%</td>
<td>2.5%</td>
<td>2.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine retention</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td>2.5%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION
The management of normal labor is both an art and a science. Prolongation of labor is one such dilemma that every obstetrician tries to avoid. The ultimate aim of the obstetrician is to accomplish the delivery in the shortest possible time without compromising maternal and fetal safety. For decades, health providers have worked for shortening the duration of painful labor. Reduction of cesarean sections and other fetal and maternal complications is also an important aspect of labor management (9).

Active management of labor was introduced in1960s 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. The two major factors that determine duration of labor are uterine contractility and rate of cervical dilation (10).

Sapasmolytic drugs are frequently employed in India to overcome cervical spasm and thus reduce the duration of labor. One of these sapamolitics is hyoscine-n-butylbromide which has been used to shorten the duration of labor. It exerts a spasmolytic action on the smooth muscle of the gastrointestinal tract, biliary and genitourinary tracts (11) The study was done on age group ranging from 18 to 35 years old, patients aging less than 18 years or more than 35 years were excluded from our study as pregnancy in this age group consider high risk pregnancy (12).

Al Qahtani and Al Al Hajeri(7) conducted a randomized, double blind, controlled trial. Ninety-seven primigravid term pregnant women in spontaneous labor received either hyoscine butylbromide or a placebo intramuscularly once
the women entered the active phase of labor. A total of 97 women yielded data for analysis. Of these, 45 women received the placebo and 52 received HBB. The mean duration of the first stage in the control group was 215 minutes, compared with 165 minutes in the study group, representing a decrease of 23.3% (P value = 0.001). There were no significant changes in the duration of the second (P value = 0.063) or third (P value = 0.0618) stages of labour. The difference in result may be because different administrative route.

The results of the current study are compatible with results of Samuel et al. (4) in their randomized, double-blinded a total of 129 women yielded data for analysis. Of these, 69 women received the placebo and 60 received 20 mg of hyoscine butylbromide intravenously in the beginning of active phase of first stage of labour. The mean time for the first stage in the control group was 228 minutes, compared to 156 minutes in the drug group, representing a decrease of 31.7% (P value = 0.001). There was no significant change in the duration of the second and third stages of labour. The difference in the results between this study and Samuel et al. (4) may be because this study was on both prime and multigravida off different ethnic groups. Our study results are compatible with results of Kirim et al. (9). A randomized, double-blinded, controlled trial, with healthy primigravid and multigravid women in spontaneous labour at term was considered in this study. A total of 80 patients were categorized into two equal groups. Once the active phase of labour was achieved, either a single dose of 20 mg (1 mL) of HBB or placebo (1 mL saline) was given intravenously. Assessment of cervical dilatation was done every one hour. The mean duration of the first stage of labour was 191.1 ± 43.06 min in the primigravid patients of the HBB group, while it was 248.2 ± 66.1 min in the placebo group, a statistically significant difference of 57 min (P value < 0.001). The mean duration of the first stage of labour was 170.1 ± 50.8 min in the multigravid patients of the HBB group, while it was 224.06 ± 53.7 min in the placebo group (difference of 54 min, P value < 0.001). The mean duration of the first stage of labour was significantly different both for multigravid and primigravid patients. There was no significant change in the times for the second and third stages of labour. There were no significant differences in terms of Apgar scores noted at 1 and 5 min, prepartum and postpartum hemoglobin levels and birth weight. No adverse maternal and fetal effects were observed in both HBB and placebo groups.

The results of our study are also compatible with those of Sirohiwal et al. (6-10). A non-randomized controlled prospective study was carried out on 200 women in labour. In the active phase of labour, at 3 cm or more cervical dilatation, 100 women were administered HBB via suppository and 100 women (control) were not given any drug. The duration of first stage of labour was 123.86 ± 68.89 (mean ± standard deviation) minutes in the study group and 368.05 ± 133.0 min in the control group. These differences were statistically significant. There were no differences in the duration of the second and third stages of labour. There was no increased incidence of operative deliveries in the study group. No adverse effects were noted on the mother or fetus. The difference in results may be because different route of administration.

The results of our study are also compatible with those of Makvandi et al. (11). A randomized double-blind placebo-controlled clinical trial was carried out on 130 primigavrid women admitted for spontaneous labour. The women were recruited and randomized into the experimental (n=65) and control group (n=65). In the beginnin2 of the active phase of labour, 20 mg of HBB rectal suppository was administered to the experimental group, while a placebo suppository was administered to the control group. Cervical dilatation and duration of active phase and second stage of labour were recorded. The rate of cervical dilatation was 2.6 cm/h in the experimental and 1.5 cm/h in the control group (P value < 0.001). The active phase and the second stage of labour were significantly shorter in the experimental group (P value = 0.001 and P value < 0.001, respectively). There was no significant difference between the two groups in the fetal heart rate, maternal pulse rate, blood pressure, and the Apgar score 1 and 5 minutes after birth.

Sekhavat et al. (12) conducted a single-blinded randomized clinical trial study, 188 multiparas women in early active phase of labour who were admitted to Shahid Sadoughi Hospital, were evaluated. They were divided hyoscine group (n = 94) received 20mg (1ml) of hyoscine and control group (n = 94) received 1 ml of normal saline was given as placebo, intravenously. The effects of hyoscine in shortening labour time, and neonatal Apgar score were compared. Duration of the first (mean± SD: 186.8 ± 125.6 minutes vs. 260.4 ± 120.9 minutes, P value= 0.00 1) and second stage of labour (mean± SD: 20.0 ± 8.1 minutes vs. 25.8 ± 9.4 minutes, P value = 0.03) was shorter in hyoscine group. Frequency of cesarean section and
mean of neonatal Apgar score at minutes of one and five were not different in both groups. No serious adverse events were seen in the two groups. Sekhavat et al. (12) concluded that hyoscine butylbromide is effective in significantly reducing the duration of the first and second stages of labour and that it is not associated with any obvious adverse outcomes in mother or neonate. Different results may be due to inclusion of multiparas women in the study.

Our study results are compatible with results of Fardiazar et al. (13). In a single blind randomized clinical trial, 120 term pregnancies in early active phase of first stage of labour were enrolled from July 2009 to March 2011. A parallel design was used to randomly assign subjects into two equal groups including 60 participants in each group. Hyoscine-N-butylbromide was administered 40 mg intravenously in the first group and intravenous atropine was given in second group at a dose of 0.5 mg. The participants of the two trial arms were similar according to the distribution of background variables. Mean length of the first stage of labour was 218.5 min (SD: 81.4) in hyoscine versus 339 min (SD: 83.3) in atropine group (P value < 0.001).

Our study results are compatible with those Manpreet et al. (14). A randomized comparative study was carried out on one hundred women in labour. They were randomly allocated to one of the two groups. Group A included 50 women who were given injection drotaverine hydrochloride and Group B included 50 women who were given injection hyoscine butylbromide intravenously in the first stage of labour. The main outcome measures were the time taken for full dilatation, rate of cervical dilatation, the duration of first and second stages of labour and blood loss in third stage of labour, all calculated separately for nulliparas and multiparas of the two groups. Average time to full cervical dilatation was significantly less in Group B in both nulliparas (P value <0.01) and in multiparas (P value <0.05). Similarly, the average rate of cervical dilatation was significantly more in Group B, both in nulliparas (P value <0.007) and in multiparas (P value <0.02). No significant difference in the side effects of either drug was observed. The difference in the duration of second and third stages of labour and the blood loss were statistically insignificant. The study concluded that hyoscine butylbromide is more efficacious than drotaverine hydrochloride for cervical effacement and dilatation with no increase in the side effects, duration of second and third stages of labour and the third stage blood loss.

Our study results are compatible with those of Aggarwa et al. (15). This prospective randomized control trial was carried out on 104 primigravidae with single live fetus in cephalic presentation, with spontaneous onset of labour, between 37-40 weeks of gestation. Women were consecutively randomized into study (group I) and control (group II) groups, each with 52 patients after excluding high risk factors like preeclampsia, antepartum hemorrhage, previous uterine scar, and any contraindications to vaginal delivery. Group I received 40 mg HBB as a slow intravenous injection early in the active phase of labour while Group II received 2mL normal saline. Cervical dilatation was assessed at baseline and two hours later. Secondary outcome measures compared were mode of delivery and neonatal condition at birth. Statistical significance was assessed by using Student's t-test and Chi-square test. P value <0.05 was taken as significant. Mean duration of labour was 3 hours 46 minutes in Group I compared to 8 hours 16 minutes in Group II (P value <0.001). Mode of delivery and neonatal outcome were comparable. No adverse maternal effects were noted. The study concluded that Intravenous Hyosine N-Butyl Bromide shortens the duration of active phase of first stage of labour without any untoward short term fetal or maternal effects.

The result of this study was in contrast to that of Gupta et al. (16) who studied and compared the efficacy and side effects of Drotaverine ( group 1 included 50 women given 40 mg), Hyoscine-n-butylbromide ( group 2 included 50 women given 20 mg) and a placebo (group 3 included 50 women) in augmentation of labour and found that the mean duration of active phase of first stage of labour was 4.48± hours.3.9± hours and 3.6± hours in group 1,2 and 3 respectively. The differences were not statistically significant. There were no differences in the duration of the second or third stages of labour. They concluded that drotaverine and hyoscine-n-butylbromide do not have a role in augmentation of labour.

The result of this study was on contrast to that of Aldahhan et al. (17).A double-blind study included 200 women attending labour ward in the first stage of labour either latent or active phases. They were categorized into two groups; group A (cases) received HBB 20mg I.V and group B (controls) received placebo intravenously. Assessment of cervical dilatation was carried out every hour post injection. The duration of the stages of labour, maternal and neonatal outcome was determined. The study revealed that cervical dilatation at 1 hour was significantly lesser in
group A(6.8+1.8) cm compared to (7.6 + 2.1) cm in the control group (P value <0.05). The duration of the first stage of labour was significantly longer among group A (4.1+1.8) hours as compared with the controls (3.4 + 1.6 hours) P value <0.05. The frequency of caesarean section was significantly higher among group A (12 %) compared to controls (4%), P value < 0.05. Fetal heart rate was significantly higher among group A (137.8+11.2 beat/min) compared to control (133.5+9.9 beat/min), P value < 0.001. They conclude that the administration of HBB decelerate the cervical dilatation in the first stage of labour and causes prolongation in its duration. Also it is associated with small, but obvious fetal risk, and an increase in the rate of Caesarean section.

**CONCLUSION**

Hyoscine butylbromide helps to decrease the duration of active phase of labour in primigravdae with no side effects on either the mother or the neonate. This decrease was not related to the dose.

**RECOMMENDATIONS**

1. Intravenous injection of Hyoscine butylbromide helps to decrease the duration of active phase of labour in primigravdae with no side effects on either the mother or the neonate. This decrease was not related to the dose.

2. The recommended dose is 20 mg intravenously as there was no significant improvement with higher dose.

3. Further studies on larger scale should be conducted to confirm the results.

4. Further studies using different routes of administration of Hyoscine butylbromide should be conducted to compare the effect of the drug.

5. Further studies using combinations of Hyoscine butylbromide and other drugs commonly used for labour augmentation.

**REFERENCES**


