Effectiveness of drotaverine hydrochloride in progression of labour

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Abstract

Aim: This study was done to compare the effectiveness of drotaverine hydrochloride and valethamate bromide in shortening duration of labour.

Methods: It is a hospital based prospective study, carried out in the department of Obstetrics & Gynaecology at Kathmandu Medical College Teaching Hospital (KMCTH), Sinamangal from 1st June to 31st August 2005. 99 patients, who were in active labour, were taken into the study. Out of which 50 were in drotaverine group (Group 1) who had received 40 mg of drotaverine hydrochloride intramuscularly at 3 to 5 cm dilatation of the cervix. Rest of 49 patients were in valethamate bromide group (Group 2). They received 3 doses of 8 mg valethamate bromide and 20 mg hyoscin butyl bromide intravenously half an hour interval.

Result: The injection-delivery interval was studied in both Groups. The duration of injection-delivery interval was found to be almost equal in primigravidae of both Groups (p=0.72). But in multigravidae interval was significantly shorter in drotaverine Group (p=0.03).

Conclusion: Both drotaverine and valethamate bromide are equally effective in shortening duration labour in primigravidae, whereas drotaverine is more effective in multigravidae in accelerating labour.

Keywords: Drotaverine, Valethamate bromide, cervical dilatation, labour acceleration
Total of 99 labouring patients were taken into the study. Both primi and multi-gravidae, fulfilling following criteria were included in the study. A) Term pregnancy with cephalic presentation B) Singleton pregnancy C) Those who were in active phase of labour with cervical dilatation of 3 to 5 cm with partially effaced cervix and having regular uterine contraction of 2 to 3 contraction per 10 minutes, with or without oxtocin infusion. Women with malpresentation, multifetal gestation and previous history of cervical surgery were excluded from this study.

In both Groups of patients duration of 1st dose of injection and delivery was recorded. It was analysed and compared between 2 Groups.

Table 1. Injection – delivery interval in Group 1 (Drotaverine Group)

<table>
<thead>
<tr>
<th>Cervical dilatation at injection</th>
<th>No. of cases (n=50)</th>
<th>Mean duration of injection – delivery interval (in minute)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Primigravida (n=31)</td>
<td>Multigravida (n=19)</td>
</tr>
<tr>
<td>3 cm</td>
<td>14 (25 – 385)</td>
<td>231.7 ± 92.5 min (130 – 310 min)</td>
<td>193 ± 101.4 min (130 – 310 min)</td>
</tr>
<tr>
<td>4 cm</td>
<td>22 (31 – 360 min)</td>
<td>189.8 ± 92.7 min (45 – 265 min)</td>
<td>121 ± 71.3 min (45 – 265 min)</td>
</tr>
<tr>
<td>5 cm</td>
<td>14 (75 – 256 min)</td>
<td>163.2 ± 53.7 min (80 – 135 min)</td>
<td>103 ± 24.3 min (80 – 135 min)</td>
</tr>
</tbody>
</table>

Overall mean duration of injection delivery interval 50 196.9 ± 85.4 min (25 – 385 min) 127.6 ± 70.8 min (45 – 310 min) 0.005

Out of 50 cases in Group 1, 31 cases were primigravidae and 19 were multigravidae. The average duration of injection delivery interval in primigravidae was 196.9 ± 85.4 min whereas in multigravidae it was only 127.6 ± 70.8 min. In this study mean duration of injection – delivery interval was found significantly shorter in multigravidae than primigravidae (p=0.005).

Table 2. Injection - Delivery Interval Group 2 (Valethamate Group)

<table>
<thead>
<tr>
<th>Cervical dilatation at 1st dose of injection</th>
<th>No. of cases (n=50)</th>
<th>Mean duration of injection – delivery interval (in minute)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Primigravida (n=27)</td>
<td>Multigravida (n=22)</td>
</tr>
<tr>
<td>3 cm</td>
<td>21</td>
<td>260.2 ± 115.4 min (157 – 450 min)</td>
<td>255 ± 39.3 min (200 – 290 min)</td>
</tr>
<tr>
<td>4 cm</td>
<td>17</td>
<td>194.7 ± 104.6 min (70 – 420 min)</td>
<td>210.3 ± 99.4 min (60 – 330 min)</td>
</tr>
<tr>
<td>5 cm</td>
<td>11 (70 – 180 min)</td>
<td>124.1 ± 40 min (50 – 188 min)</td>
<td>120.1 ± 48.1 min</td>
</tr>
</tbody>
</table>

Overall mean duration of injection delivery interval 49 188.1 ± 10.3 min 182.7 ± 89.4 min 0.84

Out of 49 patients, 27 patients were primigravidae and 22 were multigravidae. In most of the patients, 1st dose of injection was given at 3 to 4 cm cervical dilatation. Over all mean duration of injection-delivery interval in primi and multigravidae was 188.1 ± 10.3 min and 182.7 ± 89.4 min which is statistically comparable.
Total of 99 patients were enrolled in this study. Out of which 50 patients were in Group 1 (Drotaverine Group). Among 50 patients, 31 patients were primigravidae and 19 were multigravidae (62% and 38% respectively).

49 patients were enrolled in Group 2 (Valethamate Group). Out of which 27 were primigravidae and 22 were multigravidae (55% and 45% respectively).

The mean age of patients of Group 1 and 2 were 22.8 years and 23.3 years respectively.

The mean gestational age of patients of Group 1 and 2, were 39 weeks and 39.8 weeks respectively.

The mean duration of injection-delivery interval in both Groups, was found to be comparable in primigravidae (p=0.72). But mean duration in multigravidae was significantly shorter (p=0.03) in Drotaverine Group (Group 1). There was a case of cervical tear in both the groups.

Effectiveness of drotaverine hydrochloride in regression of labour

They conclude that Drotaverine is effective in reducing the duration of labour by hastening cervical dilatation. It is more effective when membrane has been ruptured. It is also found that Drotaverine does not increase in the incidence of operative delivery.5

Conclusion

Both Drotaverine and Valethamate bromide are equally effective in shortening duration labour in primigravidae. But in multigravidae, Drotaverine dilates the cervix more rapidly than Valethamate.

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References

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