Efficacy of Rectal Misoprostol When Combined With Standard Oxytocin to Treat Postpartum Hemorrhage

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ABSTRACT

Background: One of the commonest causes of maternal mortality in the developing world is post-partum hemorrhage. In Pakistan it accounts for nearly 25% of maternal deaths. This trial was conducted to study the effectiveness and safety of rectal misoprostol in the treatment of post-partum hemorrhage.

Material & Methods: This study was conducted at DHQ Teaching Hospital D.I.Khan from January 2007 to December 2007. Women with more than usual postpartum hemorrhage due to inadequate uterine contractions were enrolled after informed consent. Women having contra-indication to the use of oxytocin or misoprostol were excluded from the study. They were given tablet misoprostol 800 microgram rectally, and blood loss measured for at least one hour of postpartum hemorrhage. The primary outcome measure was total blood loss and blood transfusion while secondary outcome measure was medication side effects.

Results: During the study period 2011 deliveries occurred and 80 women were eligible for the study. Fifty-five of these were given rectal misoprostol and 25 were taken as controls. The demographic characteristics of both the groups were similar. There was a significant difference in blood loss of >1000 ml (p<0.001). Pyrexia was more common in misoprostol group 22% vs 16% p>0.05.

Conclusion: Misoprostol is an effective treatment for postpartum hemorrhage.

Key words: Postpartum hemorrhage, Misoprostol, Oxytocin.
were given tablet misoprostol 800 microgram (Four tablets of 200 microgram each) rectally. Blood loss was measured for one-hour post-partum.

Informed consent was obtained from the women in their own language using a standardized form after admission to the labour ward. Two groups were formed; a control group with routine management and the treatment group with additional rectal misoprostol.

All other management was according to the hospital routine for the management of PPH. This protocol included use of intravenous oxytocin, attention to lacerations, removal of retained placental tissues.

The primary outcome measures specified prior to commencing the study were: (1) Blood loss ≥1000 ml in an hour after enrolment (2) Haemoglobin level <7gm/dl or indication for blood transfusion (3) Hysterectomy, or maternal death. Secondary outcome measures were side effects.

Maternal pulse, blood pressure, and temperature were recorded after delivery and every 30 to 60 minutes.

Categorical data was analyzed with chi-square test and continuous data with t test.

### Table 1: Demographic characteristics of the women.

<table>
<thead>
<tr>
<th>Values</th>
<th>Misoprostol group (n=55)</th>
<th>Control group (n=25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age in years (Mean+ SD)</td>
<td>38±1.7</td>
<td>26±3.3</td>
</tr>
<tr>
<td>Gestations age (Weeks)</td>
<td>38±1.5</td>
<td>39±1.52</td>
</tr>
<tr>
<td>Pre-delivery haemoglobin (Mean ± SD)</td>
<td>11±.29</td>
<td>11±1.998</td>
</tr>
</tbody>
</table>

### Table 2: Comparison of outcome of women who received misoprostol with those receiving only oxytocin.

<table>
<thead>
<tr>
<th>Baseline Characteristics</th>
<th>Misoprostol Group</th>
<th>Control Group</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood loss ≤500 ml</td>
<td>4 (7%)</td>
<td>7 (28%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Haemoglobin ≤7g/l or blood transfusion</td>
<td>4 (7.3%)</td>
<td>5 (20%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Blood loss &gt; 1000ml</td>
<td>2 (4%)</td>
<td>5 (24%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Maternal Mortality</td>
<td>0</td>
<td>3 (12%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hystrectomy</td>
<td>1 (1.8)</td>
<td>0</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>

### RESULTS

Out of 2011 deliveries 100 women had PPH; 80 were eligible for the study. Out of these, 25 were given routine treatment (Control group), while 55 were given additional treatment with misoprostol.

### DISCUSSION

This study has confirmed the utility of rectal misoprostol for routine management of third stage of labour, as determined by blood transfusion or haemoglobin <7g/dl, which was 7.3% in Misoprostol group and 20% in Oxytocin group (p<0.001). In other such studies, the need for blood transfusion was also higher in the oxytocin group.11-14

A low rate of PPH (7%) was demonstrated in Misoprostol wing of our study. According to the 2000 Cochrane review, the rate of PPH ≥ 500ml was roughly 5% for women receiving prophylactic uterotonics and 12% for those not receiving it.14

In our study, no deaths occurred in misoprostol group. These results are comparable to a study, which also used the same route for misoprostol.13

As found in previous studies on misoprostol, the use of the drug in our study was significantly associated with fever (22% vs 16%) and shivering (16% vs 4%) as compared to control group.15

### Table 3: Medication side effects.

<table>
<thead>
<tr>
<th>Values</th>
<th>Misoprostol group (n=55)</th>
<th>Control group (n=25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea</td>
<td>4 (7)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>4 (7)</td>
<td>2 (8)</td>
</tr>
<tr>
<td>Shivering</td>
<td>9 (16)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Pyrexia</td>
<td>12 (22)</td>
<td>4 (16)</td>
</tr>
</tbody>
</table>
CONCLUSION

Misoprostol is an effective treatment for postpartum hemorrhage. It might be an alternative to parenteral prostaglandins. Given that it is an inexpensive and stable drug, misoprostol has considerable potential to reduce maternal mortality from postpartum hemorrhage in developing countries.

REFERENCES


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