MANAGEMENT OF FIRST TRIMESTER MISSED ABORTIONS WITH MISOPROSTOL

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ABSTRACT

Objective: To assess the efficacy and safety of misoprostol (PGE1 analogue) for termination of first trimester missed abortions.

Material and Methods: A prospective study was carried out from November 2009 to April 2011 at Gynae A unit Khyber Teaching Hospital, Peshawar. A total of 80 patients at 7-12 weeks of gestation requiring termination of pregnancy were included. Misoprostol 800ug (4 tablets) with 2-3 drops of water was placed high in vagina and then 400 ug (2 tablets) were repeated 6 hourly for another three doses. The primary outcome measures were complete evacuation of products of conception, mean induction to expulsion time and the occurrence of side effects.

Results: Successful abortion was observed in 72 (90%) patients. Mean induction to expulsion interval was 13.9 hours. Eight (10.5%) patients had surgical evacuation, of these patients 4 (5%) had incomplete abortion and 4 (5%) had failed induction. Side effects including nausea, vomiting and diarrhea were encountered, very rarely.

Conclusion: Misoprostol is a safe, effective and economical drug for induction of first trimester abortions.

Key Words: Misoprostol, missed abortion, complete abortion.
The demographic characteristics of patients are shown in Table 1. Table 2 shows the results of induction of abortions in patients with previous caesarean sections. The success rates were complete abortion in 72 (90%) and incomplete abortion in 4(5%) of cases.

The induction abortion interval is shown in Table 3. Mean induction – abortion interval was 13.9 hours whereas 90% of the total cases had successful abortion. In certain cases 8 (10.5%) patients needed surgical evacuation that were patients with incomplete abortion (5%) and with failed induction (5%). The average hospital stay for induction of abortion was 30 hours. Table 4 shows, side effects with misoprostol.

### RESULTS

A total of 80 patients were included in the study. The demographic characteristics of patients are shown in Table 1. Previous study revealed that more than 90% of women presenting within 48 hours of conception had vaginal misoprostol. The patients were randomly divided into three groups of 26 each. Group A was administered a single dose of 800ug of misoprostol intravaginally first and then 400ug was given 4 hourly for 24 hours and our success rate was 90%. Patients expelled products of conception within 48 hours if abortion did not occur within 48 hours the procedure was abandoned. In some cases patients were discharged the next day instead of waiting for 3 days thus minimizing the financial burden on patients. In another study 800ug of misoprostol was given intravaginally first and then 400ug was given 4 hourly for up to 3 doses for terminating first trimester missed abortion. If induction abortion interval was 13.9 hours and our success rate was 90%. Patients expelled products of conception within 48 hours. If abortion did not occur within 48 hours the procedure was abandoned and surgical intervention carried out. All those who aborted had immediate digital pelvic and sonographic examination after 24 hours to determine whether retained products of conception were present or not. Our outcome measures included induction abortion interval, success rate and the occurrence of side effects with vaginal misoprostol.

### Table 1: Demographic characteristic of women with first trimester missed abortions

<table>
<thead>
<tr>
<th>Age in years</th>
<th>No. of patients and Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-20</td>
<td>21 (26.25%)</td>
</tr>
<tr>
<td>21-30</td>
<td>34 (42.50%)</td>
</tr>
<tr>
<td>31-40</td>
<td>16 (20.00%)</td>
</tr>
<tr>
<td>&gt; 40</td>
<td>09 (11.25%)</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
</tr>
<tr>
<td>Primigravida</td>
<td>03 (03.75%)</td>
</tr>
<tr>
<td>1-4</td>
<td>26 (32.50%)</td>
</tr>
<tr>
<td>5-7</td>
<td>34 (42.50%)</td>
</tr>
<tr>
<td>&gt; 7</td>
<td>17 (21.25%)</td>
</tr>
</tbody>
</table>

### Table 2: Induction in patients with previous caesarean sections

<table>
<thead>
<tr>
<th>Cesarean Section</th>
<th>No. of patients and Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous 1</td>
<td>11 (13.75%)</td>
</tr>
<tr>
<td>Previous 2</td>
<td>4 (05.00%)</td>
</tr>
<tr>
<td>Previous 3</td>
<td>01 (1.25%)</td>
</tr>
</tbody>
</table>

### Table 3: Induction – abortion Interval

<table>
<thead>
<tr>
<th>Interval in hours</th>
<th>No. of patients and percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 8</td>
<td>04 (5.2%)</td>
</tr>
<tr>
<td>8 – 16</td>
<td>53 (69.7%)</td>
</tr>
<tr>
<td>&gt; 16 – 24</td>
<td>17 (21.25%)</td>
</tr>
<tr>
<td>&gt; 24 – 48</td>
<td>2 (2.6%)</td>
</tr>
</tbody>
</table>

### Table 4: Side Effects with Misoprostol

<table>
<thead>
<tr>
<th>Side Effects</th>
<th>No. of patients and percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea</td>
<td>4 (5%)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>2 (2.5%)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>2 (2.5%)</td>
</tr>
<tr>
<td>Fever</td>
<td>3 (3.7%)</td>
</tr>
<tr>
<td>Bleeding</td>
<td>2 (2.5%)</td>
</tr>
</tbody>
</table>

In Table 1. The success rates were complete abortion in 72 (90%) and incomplete abortion in 4(5%) of cases. The induction abortion interval is shown in Table 3. Mean induction – abortion interval was 13.9 hours whereas 90% of the total cases had successful abortion. In certain cases 8 (10.5%) patients needed surgical evacuation that were patients with incomplete abortion (5%) and with failed induction (5%). The average hospital stay for induction of abortion was 30 hours. Table 4 shows, side effects with misoprostol.

### DISCUSSION

In the last two decades, medical termination of pregnancy has become a safe alternative to vacuum aspiration and dilatation and curettage. Traditional methods of surgical evacuation of uterus are associated with major morbidity in upto 1% women and minor morbidity in 10%. Recently misoprostol regimen has become more widely available and is now considered to be the gold standard for early pregnancy termination. In study successful abortion was seen in 72 (90%) patients. It is in accordance with other studies.

Jain J K et al used 800 ug of misoprostol vaginally for termination of first trimester abortions. He gave three doses of misoprostol every 24 hours and his study revealed an efficacy of 80.4%. In the study we used 800ug stat followed by 400ug 6 hourly for 24 hours and our success rate was 90%. Patients expelled within 24 hours of administration misoprostol and were discharged the next day instead of waiting for 3 days thus minimizing the financial burden on patients. In another study 800ug of misoprostol was given intravaginally first and then 400ug was given 4 hourly for up to 3 doses for terminating first trimester missed abortion. 87.5% patients had complete abortion. The regimen using repeated doses of misoprostol alone that can be finished within one day have the advantage of requiring less hospital visits and ultrasound examinations.

For terminating 1st trimester abortion low dose regimens i.e. dose of 200-400ug every 4-6 hours were used.
associated with less successful outcome as compared to our regimens of misoprostol. Szymarska et al (2003) reported 30.0% success rate with the use of 400ug of vaginal misoprostol and this success variation may be due to this reason. In another descriptive study where 400ug of vaginal misoprostol was given 4 hourly successful complete abortion was seen in 68% patients and with induction to expulsion interval of 12.2 hours, whereas in our study mean induction to expulsion interval was 13.9 hours.

Differences in initial dosage, time interval during administrations, method and routes of drug administration, population and criteria for diagnosis of incomplete abortion were suggested to be relevant in explaining differences in outcome. Vaginal route appears to be the most effective followed by sublingual with oral being the least effective. Sublingual misoprostol needs a more frequent administration i.e. every 3 hours to achieve a similar effectiveness to the vaginal route.

Vaginal application of misoprostol results in slower increase and lower peak plasma concentration of misoprostol than when administered orally but overall exposure to drug is increased. Among women who were 9-11 weeks pregnant and given misoprostol before surgical abortion, Intravaginal pressure began to rise on average of 8 minutes after oral administration and 21 minutes after vaginal administration and was maximal 25 minutes after oral administration and 46 minutes after vaginal administration.

Awan AS prescribed oral misoprostol for managing first trimester missed abortion. 67% patients aborted and expelled completely and did not require any type of surgical intervention. 30% patients expelled incompletely and they had evacuation and curettage. Mean expulsion time was 7.8 hours. In our study mean expulsion time was 13.9 hours but the success rate was 90%. Success rate of 92% is reported with use of sublingual use of misoprostol but the incidence of side effects is high with oral and sublingual routes.

Chills and fever are fairly common more with oral or sublingual administration of misoprostol but are transient. Nausea, Vomiting, diarrhea are also common adverse reactions of misoprostol intake affecting about 35% of women. Gastrointestinal side effects are more common after oral or sublingual administration. In our study there was 5% incidence of nausea, 2.5% vomiting and 2.5% diarrhea.

The results of the study have shown that age, parity and gestational age do not effect the success rate of medical abortion using misoprostol. Wood SL and Zhang J et al compared the efficacy, acceptability and cost of medical abortion versus surgical abortion and they concluded that surgical abortion requires 10% more personal cost than medical abortion.

CONCLUSION

Misoprostol is a safe, effective and economical drug as compared to other prostaglandins. Its use would limit the use of surgical requirements, sterilization and anesthesia. The low cost, wide availability, ease of administration and storage makes it appealing for developing countries.

REFERENCES


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http://www.who.int/EMRJorList/details.aspx?docn=4468