Medical management in the community as an option for first trimester miscarriage

Women may prefer to receive treatment for miscarriage at home rather than in hospital. A pilot study assessed the effectiveness of community-based management.

A study by Hemminki (1998) found that 74% of women who attended their doctor with a possible miscarriage were admitted to hospital, and, of these, 84-88% underwent uterine evacuation.

In 1993, Henshaw et al published the results of a study looking at medical management of inevitable or incomplete miscarriage with prostaglandin analogues. Of 43 patients studied, the treatment was found to have been successful in 41 and it was concluded that this approach was a suitable alternative to surgical management.

Medical management of miscarriage was extended to include women with missed miscarriage and anembryonic pregnancy, and a study by Wagaarachchi et al (2001), of mifepristone and misoprostol, showed a success rate of 84%.

This approach to treatment subsequently became an important management option offered to women found to have a non-continuing first trimester pregnancy. However, it still required inpatient care with obvious resource implications and was unpopular with many patients.

OUTPATIENT CARE

At the Royal Infirmary of Edinburgh, inpatient medical management was only possible at weekends due to pressure on beds in the gynaecology unit during the week. This situation limited the number of women who were able to have treatment and led to lengthy waits during which many miscarried naturally or decided to have surgical management which requires day case admission to hospital.

In 2006, a retrospective study carried out at the Royal Infirmary of women who had planned to have inpatient medical management in the hospital found that 22% miscarried naturally at home due to delay in admission. An additional 8% changed their mind and opted for surgical management, usually because of the long wait for admission. This meant that 30% of the women were not receiving the management they would have preferred (Fig 1).

FIG 1. ROYAL INFIRMARY 2006 INPATIENT MEDICAL MANAGEMENT RESULTS

RIE 2006 inpatient medical management results

- Successful: 41%
- Delayed success: 8%
- Ward overnight: 12%
- Emergency evacuation: 4%
- Failed treatment: 4%
- Changed mind: 4%
- Delayed treatment: 21%
In October 2006, the Royal College of Obstetricians and Gynaecologists produced guideline 25, which stated: “Medical methods are an effective alternative in the management of confirmed first trimester miscarriage…Medical management may be undertaken successfully on an outpatient basis. Consideration should be given to offering this approach, depending on the clinical situation and patient choice” (RCOG, 2006).

It was becoming clear that outpatient medical management of miscarriage was a feasible option. Shankar et al (2007) carried out a prospective observational study of women having outpatient medical management of missed miscarriage using misoprostol. The purpose of the study was to evaluate the efficacy, safety, and acceptability of this treatment. The results showed 77% of the women had successful outpatient medical management and only 6.7% readmitted as emergencies. The study also reported 93% of women said they had preferred to have their treatment at home rather than in hospital.

The researchers concluded that medical evacuation of missed miscarriage was efficacious, safe and acceptable in the outpatient setting. These results encouraged others to move towards management of miscarriage in the community.

**CHANGING PRACTICE AT THE ROYAL INFIRMARY OF EDINBURGH**

The option of outpatient medical management of miscarriage began at the Royal Infirmary of Edinburgh in June 2009. The process of implementing this change had begun with a meeting of the early pregnancy quality improvement programme (QIP) group. This multidisciplinary group of medical staff, nursing staff and ultrasonographers had agreed that all consultant gynaecologists working within the hospital should be informed of the proposed change and asked for their view. After agreement from all stakeholders, the QIP group considered the most appropriate drug regimen. This is outlined below.

A pilot study of 100 patients was planned to determine if a single dose of misoprostol would be sufficient to induce a complete miscarriage with positive results. Multiple doses of misoprostol are often administered for this purpose.

**BOX 1. PROTOCOL FOR OUTPATIENT MEDICAL MANAGEMENT**

<table>
<thead>
<tr>
<th>Contraindications for outpatient management are quite extensive. Some are listed below.</th>
<th>Absolutes and relative contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Diagnosis of non-viable intrauterine pregnancy or retained products of conception is certain, based on existing protocols; I The size of the intrauterine pregnancy is appropriate</td>
<td>I Poorly controlled or uncontrolled severe asthma.</td>
</tr>
<tr>
<td>I Known or suspected ischaemic heart disease; I Severe liver disease; I Renal disease;</td>
<td>Relative contraindications:</td>
</tr>
<tr>
<td></td>
<td>I Moderate asthma with dual treatment including inhaled corticosteroid; I Diabetes;</td>
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<tr>
<td></td>
<td>I Distance from hospital (unable to attend within one hour);</td>
</tr>
<tr>
<td></td>
<td>I Women aged 36 or over who smoke more than 20 cigarettes a day;</td>
</tr>
<tr>
<td></td>
<td>I Intrauterine contraceptive device (IUCD) still in situ; I Anaemia (&lt;8.5 g/dl);</td>
</tr>
<tr>
<td></td>
<td>I Platelets (&lt;150); I Breastfeeding (the manufacturer recommends stopping breastfeeding after taking mifepristone).</td>
</tr>
</tbody>
</table>

**PROTOCOL**

A protocol was written by medical and nursing staff outlining which patients were suitable for outpatient medical management of their miscarriage, any contraindications, and details of the stages involved in the process. This is summarised in Box 1.

An integrated care pathway was written in line with the protocol, so that all staff participating in the care could feel confident that they had carried out all required tasks. Information sheets were produced to help women to decide which option to choose, along with more detailed information for those who opted for medical management. This written information was reinforced with verbal guidance from nursing staff.

**PROCEDURES**

A full blood count is carried out as outpatient treatment is not suitable if haemoglobin is less than 8.5g/dl. The blood group is also checked. If the patient has a rhesus negative blood group anti-D immunoglobulin (250iu) is given in this first stage, as 29% of women will miscarry after this (Fig 2). The first part of treatment consists of 200mg of oral mifepristone, an antiprogestrone. The patient is then given dihydrocodeine and paracetamol to take home as she may experience pain. The second part of the treatment is...

**FIG 2. MISCARRIAGES FOLLOWING TREATMENT**

<table>
<thead>
<tr>
<th>Miscarriages following treatment</th>
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<tbody>
<tr>
<td>Part 1 only</td>
</tr>
<tr>
<td>Parts 1 &amp; 2</td>
</tr>
<tr>
<td>Failed</td>
</tr>
<tr>
<td>Unknown</td>
</tr>
</tbody>
</table>

| Failed Part 1 9% | Parts 1 & 2 29% | Part 1 only 61% |

**THIS ARTICLE HAS BEEN DOUBLE-BLIND PEER-REVIEWED**
misoprostol 800mcg given 48 hours later, first thing in the morning – this increases the chance of miscarrying during the day rather than overnight.

This medication is inserted vaginally, with patients having the choice to self administer or have a nurse do this.

Misoprostol causes the cervix to dilate and the uterus to contract so that the products of conception are expelled from the uterus. The patient is also given 400mg of oral ibuprofen, 50mg oral cyclizine and 30mg oral codeine phosphate to counteract side effects of misoprostol.

She remains lying down for 15 minutes and then goes home.

**BACKGROUND**

I Medical management of miscarriage using prostaglandin analogues in the first trimester is a recognised alternative to surgical intervention.
I Royal College of Obstetricians and Gynaecologists (2006) guidelines suggest outpatient medical management of miscarriage is a feasible alternative to inpatient care.
I Evidence suggests women prefer to have their treatment at home rather than in hospital (Shankar et al, 2007).

**AUDIT**

The results of the pilot have shown that outpatient medical management of miscarriage is extremely successful.

It was found that 90% of women had a complete miscarriage, compared with only 58% of those who had inpatient management. The reasons for this are unclear, but it may be that they are more relaxed in their own environment than in hospital.

An important finding was that only four women were subsequently admitted as emergencies due to excessive bleeding. Three of these were taken to theatre for emergency evacuation of the uterus.

A patient experience audit was carried out to gather information on what women thought about the service. Each patient who had medical management was given a questionnaire and asked to return it in a prepaid envelope when her miscarriage was complete.

They were asked for information on several aspects of the treatment including pain, bleeding, whether the analgesia they had been given was adequate, if the information they were given prepared them for the miscarriage, their partner’s feelings, and whether they would have outpatient management again if required.

The questionnaire used a combination of tick boxes and space for free text responses. This enabled qualitative data of the patient experience to be gathered in addition to quantitative data.

The results were extremely encouraging, with the majority of women stating they were satisfied with the care that they received, and 74% saying they would have it again (Fig 3).

In all, 97% of women now receive the treatment at a time which is suitable to them. The findings of the questionnaire also reassured the staff that they were giving women satisfactory information and preparing them well for the experience.

Ethical approval was not sought for this questionnaire as it was an audit.

**CONCLUSION**

The establishment of outpatient medical management of miscarriage had doubled the number of women who are able to have this treatment which is now offered every day of the week.

Inpatient management is still offered at the weekends for women who are clinically unsuitable for outpatient management, or who would rather be admitted to hospital.

In conclusion, outpatient medical management is an appropriate method for managing confirmed first trimester miscarriage for women who fit the protocol. We have found it to be more successful than inpatient medical management.

Finally – and most importantly – the majority of women were satisfied with outpatient management and would have it again if necessary.