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Medical management of miscarriage: non-surgical uterine evacuation of incomplete and inevitable spontaneous abortion

R C Henshaw, K Cooper, H El-Refaey, N C Smith, A A Templeton

Department of Obstetrics and Gynaecology, Aberdeen Maternity Hospital, Aberdeen AB2 9ZD
R C Henshaw, *lecturer*
K Cooper, *senior house officer*
H El-Refaey, *clinical research fellow*
N C Smith, *consultant*
A A Templeton, *professor of obstetrics and gynaecology*

Correspondence to:
Dr Henshaw.

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The principle of "emptying the uterus as quickly and safely as possible" remains the cornerstone of management in inevitable or incomplete spontaneous abortion.[1] Surgical curettage has been used since the 1930s, when death from haemorrhage and sepsis, often secondary to criminal abortion, was commonplace. Management has not changed despite the advent of antibiotics and legal abortion, the earlier diagnosis of miscarriage by ultrasonography, and the development of medical methods of abortion.

Patients, methods, and results

In this open study 44 eligible women (table) who were to have undergone surgical evacuation of the uterus for ultrasonically and clinically proved inevitable or incomplete miscarriage were given a single dose of sulprostone 0·5 mg intramuscularly or misoprostol 400 μg orally. The study had ethical approval, and all women gave written consent.

Sulprostone, a synthetic prostaglandin E_2 analogue, was used to treat the first 20 women. After it was voluntarily withdrawn by the manufacturer we used misoprostol, a synthetic prostaglandin E_1 analogue, because of its high efficacy in combination with the antigestagen mifepristone.[2] As there were no significant differences between the two drugs in any of the outcomes assessed the results were combined.

Women were reviewed 12-18 hours after treatment, when pelvic examination was repeated. Surgical uterine evacuation was performed if there had been no decrease in pain, bleeding, or uterine size. Women attended for review 10-14 days later so that the success of treatment could be confirmed by clinical assessment or transvaginal ultrasonography.

Forty three women were included in the analysis (one woman was excluded as she was subsequently found to have an ectopic pregnancy). Fifteen were pregnant for the first time. At recruitment their median age was 28 (range 17-40) and the median duration of amenorrhoea was 66 (40-91) days.

During treatment 11 women required oral analgesia and two narcotic analgesia. Histologically confirmed products of conception were identified in 25 cases. Treatment failed in two women: in one products of conception lodged in the cervical canal and in the other vaginal bleeding became severe enough to warrant curettage.

Thirty eight women attended for follow up. Three women had experienced symptoms which had prompted them to contact their family doctor, while 23 had been able to return to normal daily activities immediately; in the remainder the median duration of inactivity was 3 (1-7) days. Haemoglobin concentration showed a median decrease of 2 g/l, with values ranging from a decrease of 17 g/l to an increase of 9 g/l. No further women required either elective or emergency uterine curettage, so overall complete uterine evacuation occurred in 41 women.

Comment

This report suggests that prostaglandin analogues may be practical alternatives to surgical uterine evacuation in managing spontaneous incomplete or inevitable miscarriage; the ability of these drugs to stimulate uterine contractility is well known.[3] Similar high success rates occur in medical abortion (sequential treatment with an antigestagen and a prostaglandin), which may mimic the physiological events of spontaneous miscarriage.[3] Although only 88% of women were seen at follow up, none of the women who failed to attend requested treatment from her general practitioner or was readmitted to hospital (no other hospital in this area provides gynaecological services). The procedure seemed to be well tolerated: most women were rapidly able to return to normal daily activities and consultation rates with family doctors were low.

This treatment has important implications for the management of miscarriage. Women are dissatisfied

Criteria for eligibility to enter study

- Sure menstrual dates and human chorionic gonadotrophin detectable in urine
- No more than 13 weeks of gestation completed
- History of abdominopelvic pain or vaginal bleeding, or both
- Dilated uterine os and uterine size less than or equal to menstrual dates on clinical pelvic assessment
- Transvaginal ultrasonographic confirmation of retained products of conception*
- Stable haemodynamic system, with no more than moderate vaginal bleeding
- Haemoglobin concentration > 104 g/l and white cell count $< 12 \times 10^9$/l
- Temperature < 37·5°C
- No anti-prostaglandin drugs given within previous 24 hours
- No history of or current serious systemic medical or surgical condition
- No contraindication to prostaglandin treatment (mitral stenosis, glaucoma, sickle cell anaemia, hypertension, severe asthma)
- No history of recurrent spontaneous abortion

*Women with an intact gestational sac without live fetus (missed abortion) or complete spontaneous abortion not requiring treatment were excluded.

with standard management, reporting that they seemed to be a routine case for junior medical staff and had to wait until the end of regular operating lists for treatment.[4] Medical management of miscarriage has the potential for resolving some of these issues and may have economic implications by freeing surgical resources for other uses.[5] Randomised studies comparing medical with surgical management are required to evaluate this new method of treatment.

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Severity of inflammation of tympanic membrane as predictor of clinical course of recurrent acute otitis media

C L M Appelman, J Q P J Claessen, F W M M Touw-Otten, G J Hordijk, R A de Melker

Department of General Practice, University of Utrecht, Bijlhowerstraat 6, 3511 ZC Utrecht, The Netherlands
C L M Appelman, *general practitioner*
F W M M Touw-Otten, *professor*
R A de Melker, *professor*

Department of Ear, Nose, and Throat Surgery
J Q P J Claessen, *resident*
G J Hordijk, *professor*

Correspondence to:
Dr Appelman.

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Acute otitis media occasionally has an irregular clinical course in children, who may then benefit from early antibiotic treatment. Prognostic factors are therefore needed to enable clinicians to identify such cases. Recurrence and age between 6 months and 2 years were found to be predictive of an irregular course in acute otitis media,[1] and the severity of inflammation of the tympanic membrane has also been found to be predictive of the clinical course.[2] In this study we investigated whether there was good agreement between observers on the severity of inflammation of eardrums in children with recurrent acute otitis media and whether the severity of inflammation is predictive of the clinical course of the condition.

Patients, methods, and results

We conducted a randomised, placebo controlled, double blind clinical trial in 121 children aged 6 months to 12 years with recurrent acute otitis media.[1] The general practitioner and the otolaryngologist independently assessed the severity of inflammation of the eardrum by otoscopic examination. Severity of inflammation was classified as grade 1 (hyperaemia at the malleus handle and the annulus of the tympanic membrane, opacification of the eardrum, and light reflex still visible); grade 2 (thickening of the eardrum with complete redness and absence of the light reflex); or grade 3 (bulging or perforated eardrum). To estimate the agreement between the observers each tympanic membrane was considered independently, and the results were adjusted for age (<2 or ≥ 2 years). Agreement was estimated by means of Kendall's τ B estimator ($>0{\cdot}75$ excellent, 0·58-0·75 good, 0·40-0·57 moderate, $<0{\cdot}40$ poor).[3]

When the clinical course of the condition was considered in each child, if both eardrums were inflamed the higher grade of inflammation was taken as the value for that child. The child's age (<2 or ≥ 2), the presence of fever at enrolment, and antibiotic treatment were considered as possible confounders. The children were examined again three days later by the general practitioner, and if earache or fever was still present the clinical course of the condition was considered to be irregular. Statistical analysis was done with either the χ^2 test or the Mantel-Haenszel technique.[4]

Five children were excluded from the study because they were not examined by both observers. In 16 of the remaining children only one of their eardrums could be seen by both observers, so that results for 216 eardrums were available. The assessments by the otolaryngologist and general practitioner showed moderate agreement for the children aged under 2 (τ= 0·57) and good agreement for the older children (τ= 0·66) and for all the children (τ=0·64).

One of the possible confounding factors was not recorded for 13 children, so results for only 103 children were used to analyse the predictive value of the severity of inflammation of the eardrum. The clinical course of the condition was irregular in 13 (21%) of the 62 patients with moderate inflammation and 6 (15%) of the 41 patients with severe inflammation (table). There was no relation between the severity of inflammation and the clinical course of acute otitis media (χ^2 test, p=0·58). None of the possible confounding factors masked a relation between severity of inflammation and the clinical course of the condition (table).

Number (percentage) of children with irregular clinical course of acute otitis media by age, body temperature, treatment, and severity of inflammation of eardrum as assessed otolaryngologist

	Severity of inflammation		
	Moderate (grades 1 and 2)	Severe (grade 3)	p Value*
Age (years):			
<2	7/16 (44)	3/8 (38)	0·74
≥2	6/46 (13)	3/33 (9)	
Initial body temperature (°C):			
<38	6/43 (14)	4/27 (15)	0·54
≥38	7/19 (37)	2/14 (14)	
Treatment:			
Co-amoxiclav	5/31 (16)	4/25 (16)	0·63
Placebo	8/31 (26)	2/16 (13)	
Total	13/62 (21)	6/41 (15)	

*Mantel-Haenszel test.

Comment

The severity of inflammation of the eardrum did not predict the clinical course of acute otitis media over three days even when the observations were stratified by age, initial temperature, and use of antibiotics. We conclude that the appearance of the tympanic membrane does not help in predicting the clinical course of acute otitis media or in making a decision on its medical management.

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