

What is known already on this topic

The management of spontaneous first trimester miscarriage is often based on digital assessment of the cervical os, ultrasonography, and the surgical evacuation of retained products of conception

Expectant management, in early pregnancy assessment units, may be useful for some women and would reduce the overall number of women undergoing surgery

What this study adds

Most women who miscarry in the first trimester choose expectant management and about 81% of these complete their miscarriage without intervention

Ultrasonography provides a useful assessment of whether a miscarriage will complete without intervention within a given time

separately from patients in the other three groups. The same basic data and outcome measures were used in the reanalysis.

The short report was expanded to include more information, and it was resubmitted and accepted as a short paper.

Contributors: CL initiated the research, participated in the protocol design, coordinated patient recruitment, performed transvaginal scans, provided counselling, collected and analysed data, and contributed to writing the paper. KJ participated in the protocol design, performed transvaginal scans, and provided counselling. CM participated in the collection of data and analysis of results. GC performed transvaginal scans and provided counselling. WC interpreted, discussed, and presented the data and contributed to writing the paper. TB coordinated the preparation of the protocol, discussed core ideas, analysed data, and contributed to writing the paper. THB is the guarantor.

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Treatment of imported malaria in an ambulatory setting: prospective study

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Many specialists in tropical medicine consider that patients with imported malaria, at least those with *Plasmodium falciparum* malaria, should be admitted to hospital, as complications can develop quickly.¹ In Switzerland, patients with malaria who lack signs of severe disease are treated as outpatients, because empirical observations of patients with imported malaria show that death is usually due to a delay in diagnosis rather than complications during treatment.² We conducted a prospective study in the outpatient clinic of a university hospital to assess the safety of treating imported malaria in an ambulatory setting.

Participants, methods, and results

We conducted our study from January 1990 to July 2000. At study entry we used predefined clinical and laboratory criteria (table) to determine if patients with malaria required admission to hospital. If no criteria were met, ambulatory treatment was considered appropriate. Patients received the first dose of drugs under supervision and were kept under surveillance for one hour before being sent home with instructions. Follow up was at the attending doctor's discretion: clinical and parasitological assessments were performed daily until symptoms resolved and one blood slide was clear of parasites.

Overall, 165 (17%) of 958 patients with fever were positive for parasites; 113 (69%) had *P falciparum*. Sev-

Predefined clinical and laboratory criteria for admission of patients with malaria to hospital and number of patients primarily admitted to hospital with the condition

Criteria	No (%) of patients (n=36)
Clinical	
Poor general condition	23 (64)
Repeated vomiting	9 (25)
Temperature >40°C	9 (25)
Hypotension	4 (11)
Any neurological problem	5 (14)
Any respiratory problem	0
Any bleeding sign	0
Jaundice	5 (14)
Failure with previous antimalarial treatment	0
Poor compliance	0
Alone at home	0
Pregnancy	0
Laboratory	
Parasitaemia >2%	8 (22)
Platelets <20 g/l	6 (17)
Haemoglobin <80 g/dl	0
Creatinine >250 µmol/ml	0
Glycaemia <3.9 mmol/l	0

enty one (43%) of the 165 were first generation immigrants and none was white; and 135 (82%) had travelled to Africa. Median age was 33.7 (range 16-76) years, and median time from onset of symptoms to consultation was four days. Seventy seven (47%)

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patients had a parasitaemia of 0.1% or less and 10 (6%) of 2% or more.

We admitted 36 (22%) patients immediately; 33 had at least one of the predefined criteria for admission (23 had more than one), and 31 had *P falciparum*. Seven patients met one criterion but were not admitted, six because the doctor did not comply with the recommendations; one patient refused (this patient had a parasitaemia of 4.5% and recovered uneventfully).

We followed up 129 (78%) patients as outpatients (82 with *P falciparum*); 88 (68%) were treated with mefloquine alone or in combination with sulfadoxine and pyrimethamine. Six of the 129 patients were admitted during treatment. Two patients with *P falciparum* returned before the scheduled follow up because of dizziness, probably related to an adverse drug event. Two patients with *P falciparum* were observed for 40 and 60 hours, respectively, because their fever had persisted. One patient with *P ovale* was admitted after 24 hours because of a change in general condition and vomiting. None of these five patients received second line antimalarial treatment. The sixth patient was admitted after 48 hours with slight cough and difficulty breathing and needed assisted ventilation three days after admission. All patients recovered uneventfully.

Comment

Ambulatory management of imported malaria seems to be safe, provided that criteria for severity are considered. Previous studies on imported malaria were conducted in specialised tropical centres, where patients tend to present late with disease and thus have a high risk of complications.³ Our study was conducted prospectively in a setting comparable to primary care. Only 5% of patients were admitted during treatment, and none died. The inclusion of 43% of migrants with some immunity did not bias towards a favourable out-

come because their clinical presentation and rate of primary admission were similar to those found for naive travellers.³

Our sample size may not have had enough power to detect a small increase in case fatality rate. However, outpatient management of uncomplicated malaria is standard care in Switzerland, and a review of all reported deaths²⁵ in the past 10 years showed that none could be attributed to the acceleration of malaria that had been judged sufficiently mild to be treated outside hospital.

Conditions favouring a good outcome in our setting included a clinic that was open all hours, specialist supervision, and easy accessibility because of short distances to travel. Mefloquine is not standard treatment internationally, although alternative drugs such as atovaquone with proguanil or artemether with lumefantrine may help to manage uncomplicated malaria in an ambulatory setting.⁴

Contributors: VD'A was responsible for data entry, management and analysis, interpretation of results, and writing the manuscript. PL was responsible for clinical supervision, data collection, and interpretation of results. RD developed and designed the protocol. DS collected and analysed the mortality data. AP had overall clinical responsibility. BG was responsible for the development and design of the protocol, clinical supervision, data analysis, interpretation of results, and writing the manuscript. All authors reviewed the manuscript and agreed on the content. AP and BG will act as guarantors for the paper.

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Commentary: Should patients with imported malaria routinely be admitted?

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Malaria remains an important infection in Europe, with several thousand cases imported each year. D'Acremont et al pose an important question—should these cases routinely be admitted for treatment? Most people agree that non-falciparum malaria can be treated without admission. Falciparum malaria has more serious implications. It claims over a million lives a year, including some in Europe. Several factors combine to make it difficult to assess severity at the time of diagnosis. If the parasites are mature almost all will be sequestered, giving a misleadingly low peripheral parasitaemia. Conversely, if the parasites are young the patient may seem well but deteriorate rapidly over 24 hours as the parasites mature and begin to sequester in vital organs. This can occur despite adequate treatment; drugs such as quinine have a limited effect on early stages. Patients may

therefore deteriorate rapidly despite adequate anti-malarial treatment.

D'Acremont et al present data that at first sight support treating patients with malaria as outpatients, provided that strictly applied criteria identify those needing admission. The finding—that only 6% treated as outpatients needed subsequent admission—is reassuring. This is, however, potentially misleading. Many of those treated as outpatients had non-falciparum malaria, and such patients almost never need admission. Overall, 34% of all patients with falciparum malaria met the study criteria for moderate to severe disease requiring admission. Of the 82 patients with falciparum malaria treated as outpatients five were readmitted, one requiring ventilation. It is also unclear from the paper in which patients malaria was diagnosed by a positive slide result and in which by

immunological methods alone (a group with a different prognosis).

Additionally, study criteria used to identify moderate to severe disease may be difficult to generalise. Subjective criteria such as “poor general condition” are difficult to assess and standardise in patients with malaria, even for specialist centres. Busy casualty departments in general hospitals will find it no easier. Even the harder criteria have pitfalls; in particular the admission of patients with a parasitaemia of 2% seems reassuring, but in the last 100 consecutive patients with falciparum malaria seen at our hospital, 23% had an increase in parasitaemia over the first 24 hours of treatment, including eight increasing above 2%, one

with increase from 1.3% to 32%, and one from 0.2% to 8.4%. As a minor point, mefloquine, the main drug used in this study, is not used as first line treatment for malaria in most centres and may well be better adhered to by patients than quinine—which, although safe and effective, has major short term side effects and has to be taken for longer.

Conventional practice is to admit all patients with falciparum malaria because initial assessment can be misleading—even for specialist centres—and otherwise fit patients can deteriorate markedly, despite appropriate treatment. This study opens this practice up for debate, but it does not provide adequate justification for changing practice—yet.

Hepatitis B immunisation in renal units in the United Kingdom: questionnaire study

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Despite guidance from the Department of Health and the Renal Association that dialysis patients should be offered prophylaxis against hepatitis B by immunisation, surveys have shown that 95% of renal units in 1994 and 49% in 1995 were not routinely offering immunisation to any patient groups with chronic renal failure.¹⁻⁴ We aimed to determine whether provision of hepatitis B immunisation had improved after publication of the 1996 Department of Health guidelines and to identify barriers to implementation of existing guidelines.¹

Participants, methods, and results

We sent a postal questionnaire, piloted in five renal units, to the clinical directors of all 87 main UK renal units and satellites. The questionnaire (available on bmj.com) covered hepatitis B immunisation in patients with chronic renal failure, including those receiving renal replacement therapy; the number of cases of acute hepatitis B infection between 1997 and 1999; and reasons why patients might not be vaccinated.

Seventy eight (90%) units responded. Units in two teaching and four district general hospitals plus three satellites did not respond, despite reminders. Twelve units (15%) reported at least one incident of hepatitis B seroconversion in a dialysis patient. Twenty three units (29%) did not immunise any patient groups. A further

six units offered immunisation only to patients planning treatment in hepatitis B endemic areas outside the United Kingdom.

Completeness of hepatitis B immunisation in dialysis patients was not known in 27 units (35%), less than 25% in 17 units (22%), 25-75% in 13 units (17%), and over 75% in 20 units (26%). Of the 55 units that provided immunisation, 70% gave the recommended higher dose of 40 µg whereas 30% gave the previously recommended dose of 20 µg. Most (72%) used the earlier schedule of doses at 0, 1, and 6 months instead of the recommended accelerated schedule of 0, 1, 2, and 12 months. The table lists the reasons why patients are not routinely immunised.

Thirty six units (46%) followed the Renal Association's recommendations on hepatitis B immunisation of patients with chronic renal failure; 42 did not. Fourteen units had developed their own policies. Eleven units (14%) mentioned alternative guidance on immunisation, including the Department of Health's “green book” on infectious diseases,¹ the revised Rosenheim report (the draft Department of Health's policy in development),⁴ and the *British National Formulary*.

One unit feared that staff might become less careful with universal precautions if all patients were immunised. Two units thought that the heavy workload produced little benefit. One unit abandoned an immunisation programme it had started after a seroconver-

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Reasons given by 78 renal units as to why dialysis patients are not routinely vaccinated for hepatitis B before starting dialysis and during dialysis. Values are numbers (percentages) of units

Reason	Before dialysis	During dialysis
Logistics of administration and monitoring	34 (44)	35 (45)
Low perceived risk (outbreaks rare)	26 (33)	38 (49)
Awaiting revised guidelines from units committee	24 (31)	26 (33)
Effectiveness of universal precautions and screening of blood donors and patients	23 (29)	28 (36)
Poor efficacy of vaccine in patients receiving dialysis	22 (28)	35 (45)
Should be done in primary care	21 (27)	20 (26)
Not cost effective	19 (24)	22 (28)
Lack of awareness of higher dose (40 µg) vaccine	14 (18)	16 (21)



The questionnaire appears on bmj.com