Within 24 h of admission, he worsened with a temperature of 39-4°C and respiratory distress (radiography showed right middle-zone bronchopneumonic infiltrates and mild cardiomegaly). Except for moderate reduction in rigidity, the other features remained unchanged and spasms were frequent. Supplementary oxygen was added but about 12 h later, he had gross haematuria and packed cell volume dropped to 11%; serum urea was elevated at 12-4 mmol/l. Shock rapidly developed (unresponsive to plasma expanders), and the patient lapsed into coma and died about 39 h after admission, less than 72 h after the initial symptoms. The father had refused both transfusion and necropsy on religious grounds.

Occasionally no portal of entry can be found and although tetanus which is rare, such cases need policy reinforcement or review to ensure that booster doses of tetanus toxoid are received.

SCD and other haemoglobinopathies are not usually associated with an enhanced risk of or a poorer outcome in tetanus. Myoglobinemia with shock and myoglobinuria, both of which could lead to renal failure, are consequences of severe spasms. Thus intensive care is probably required in the management of tetanus complicated by SCD. Unfortunately, such facilities are in short supply in developing countries. Therefore, although the patient we saw is rare, such cases need policy reinforcement or review to ensure that booster doses of tetanus toxoid are received.

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Early antimicrobial treatment of dilated cardiomyopathy associated with Borrelia burgdorferi

SIR,—Dr Bergler-Klein and colleagues (Aug 1, p 317) report “no important changes in left ventricular ejection fraction” with antibiotic treatment of Borrelia burgdorferi-associated dilated cardiomyopathy (DCM). These findings seem to be in contrast to our data (May 9, p 1174) that showed a reversal by ceftriaxone of left ventricular ejection fraction in 2 patients. Bergler-Klein and co-workers investigated DCM patients who had cardiac dysfunction for up to 25 years before antibiotic treatment (mean about 5 years), whereas we investigated DCM patients who had cardiac dysfunction for up to 10 years after the primary course of vaccination. Whereas vaccination and a long incubation period of 2 weeks were favourable factors, this course was unusually severe and rapidly fatal.

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Relation of time between onset of cardiac symptoms and start of treatment and improvement of left ventricular ejection fraction in patients with B burgdorferi-associated dilated cardiomyopathy.

correlation between the duration of symptoms and improvement in left ventricular ejection fraction was 0-68 in 9 subjects. Improvement is unlikely after more than 6 months. It is noteworthy that in 5 (15%) of the 33 DCM patients without a history of B burgdorferi infection, DCM could be reversed in the early stages by angiotensin-converting enzyme (ACE) inhibitors, diuretics, digitalis, and the patient refraining from alcohol and physical strain. The mean duration of symptoms before treatment in these patients was 3-9 (0.9) months.

These findings are to some extent similar to results of multicentre studies on the effect of ACE inhibitors on left ventricular function after acute myocardial infarction (early onset of treatment). That Bergler-Klein et al do not see any improvement in their DCM patients possibly indicates the non-reversibility of structural damage in a group of patients with a long duration of cardiac dysfunction before treatment.

Finally, we apologise for the mistake in authorship of ref 1 in our article, but we believe that we did not cite the reference incorrectly in the context of cultivating B burgdorferi from a DCM patient. We thank Dr B. Feigl, Dr S. Pongratz, Dr M. Grisold, Dr R. Stauben, and Dr B. Eber for their help.

African tick-bite fever: a new spotted fever group rickettsiosis under an old name

SIR,—In the 1930s it was thought that two spotted fever group (SFG) rickettsioses occurred in South Africa. One was boutonneuse fever caused by Rickettsia conori and transmitted by ticks from dogs in urban areas, and the other was tick-bite fever, a milder disease caused by a different SFG rickettsia and transmitted by ticks (Ambylyomma hebraeum) of cattle and game in rural areas. This idea fell into disfavour and tick-bite fever has become the name of the disease caused by R conori in southern Africa.

In August, 1992, a 36-year-old woman presented to the Chiredzi Consulting Rooms with a history of tick-bite behind the right ear, high temperature, and a severe headache. The skin at the bite was erythematous and she had regional lymphadenopathy but no maculopapular rash. After 3 days of cotrimoxazole and 5 days of erythromycin, the clinical symptoms resolved.

Within 24 h of admission, he worsened with a temperature of 39-4°C and respiratory distress (radiography showed right middle-zone bronchopneumonic infiltrates and mild cardiomegaly). Except for moderate reduction in rigidity, the other features remained unchanged and spasms were frequent. Supplementary oxygen was added but about 12 h later, he had gross haematuria and packed cell volume dropped to 11%; serum urea was elevated at 12-4 mmol/l. Shock rapidly developed (unresponsive to plasma expanders), and the patient lapsed into coma and died about 39 h after admission, less than 72 h after the initial symptoms. The father had refused both transfusion and necropsy on religious grounds.

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An SFG rickettsia was isolated from heparinised blood collected on the fifth day and analysed by polymerase chain reaction and restriction endonuclease fragment length polymorphism with oligonucleotide primer pairs for the 190 kDa (Rf190-0p and Rf190-602n) and 120 kDa (BG1 and BG2) antigen genes of R rickettsii, and Ras1 and Pst1 restriction endonucleases. In our laboratory (Unité des Rickettsies) the use of these primer pairs and restriction endonucleases has enabled us to differentiate rapidly between the pathogenic species of SFG rickettsiae. Our isolate was different from R conorii and the other pathogenic SFG rickettsiae (Rickettsiella, sibirica, australis, japonica, and akari) and the Israeli and Thai tick typhus rickettsiae. It was, however, identical to six SFG rickettsiae isolates from A hebraeum collected around Zimbabwe and to an SFG rickettsia isolated from A cohaerens in Ethiopia.

The isolation of this pathogenic SFG rickettsia enables us to confirm that there are two SFG rickettsioses in southern Africa. One is boutonneuse fever caused by R conorii and transmitted by ticks from dogs, and the other is African tick-bite fever caused by an SFG rickettsia transmitted by Amblyomma spp. We propose that the new SFG rickettsia be named “Rickettsia africaii”.

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Pregnancy after induction of ovulation with recombinant human FSH in polycystic ovarian syndrome

Str—Transfection of human follicle-stimulating hormone (FSH) subunit genes into Chinese hamster ovary cells results in secretion of the intact FSH dimer.1 Bioactivity and pharmacokinetic properties of recombinant human FSH (rFSH) are similar to natural FSH in animals2 and man.3 Moreover, follicle development can be induced in a hypogonadotropic woman with rFSH only, and luteinising hormone (LH) is mandatory for adequate oestrogen production.4 Pregnanies have now been reported after exogenous rFSH in in-vitro fertilisation programmes.5,6 Induction of ovulation in patients with polycystic ovary syndrome (PCOS) resistant to clomiphene citrate with human menopausal gonadotropin (hMG) is associated with an increased risk of ovarian hyperstimulation and multiple pregnancies.7 A 27-year-old woman (body mass index 25 kg/m2) had been infertile for 4 years due to chronic clomiphene-resistant anovulation. PCOS diagnosis was based on: oligomenorrhoea (cycle length 8–52 weeks), increased serum LH (14.5 IU/l), hyperandrogenaemia (testosterone 5.1 [0.5–3.0] nmol/l), dehydroepiandrosterone sulphate 10.1 [1.2–10] μmol/l), and polycystic appearance of ovaries by transvaginal sonography. The new SFG rickettsia be named “Rickettsia africae”.

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Simple method for cystic fibrosis carrier screening

Str—While cystic fibrosis (CF) carrier screening in the general population is controversial, many trials have shown widespread acceptability and a positive psychological impact among prospective parents.1,2 It has been suggested that general screening would be too expensive and inefficient until the method had a high detection rate (85–95%).3 In several North European countries, this detection rate of couples at risk can be achieved by testing only the most common CF mutation, AF508. With a two-step approach, screening primarily for the AF508 mutation is in couples and more mutations only in the partners of AF508 carriers, over 85% of couples at risk could be identified in any community in which the AF508 mutation is present in more than 65% of the CF chromosomes.4

Here we describe a simple and cheap method for population carrier screening for AF508 with small pieces of blood spots or filter papers due to the high incidence of the AF508 mutation (PCR amplification5 and a pooling strategy.6 300 health workers of Hospital Niño Jesús without a family history of CF volunteered for screening. A small drop of blood from each individual taken from an Guthrie paper was used as a template for the allele specific polymerase chain reaction (PCR) amplification7 and a pooling strategy.8 300 people were mixed in the same reaction tube containing (100 μl total volume) PCR buffer, 200 μmol/l each deoxynucleotide triphosphate, and 30 pmol of each primer. The mixture was overlaid with 60 μl paraffin oil and placed in a thermocycler. After a first DNA amplification and denaturation step at 97°C for 8 min, 2.5 U Taq polymerase was added per tube during the first annealing step at 64°C for 2 min. After another 2 min at 97°C, 2.5 U Taq polymerase was added per tube during the second annealing step at 65°C for 2 min. 45 s, and 72°C for 2 min) followed with a final extension of 10 min at 72°C. The 45 s, and 72°C for 2 min) followed with a final extension of 10 min at 72°C.

Of the 15 lanes with all the 300 samples run in a single non-denaturing 8% polyacrylamide gel, heteroduplexes could be identified in any community in which the AF508 mutation is present in more than 65% of the CF chromosomes.4

Here we describe a simple and cheap method for population carrier screening for AF508 with small pieces of blood spots or filter papers due to the high incidence of the AF508 mutation (PCR amplification and a pooling strategy.8 300 health workers of Hospital Niño Jesús without a family history of CF volunteered for screening. A small drop of blood from each individual taken from skin puncture was placed on a Guthrie card under sterile conditions. Filter paper pieces of about 1–2 mm2 with dried blood from 20 different individuals were mixed in the same reaction tube containing (100 μl total volume) PCR buffer, 200 μmol/l each deoxynucleotide triphosphate, and 30 pmol of each primer. The mixture was overlaid with 60 μl paraffin oil and placed in a thermocycler. After a first DNA amplification and denaturation step at 97°C for 8 min, 2.5 U Taq polymerase was added per tube during the first annealing step at 64°C for 2 min. After another 2 min at 72°C, 2.5 U Taq polymerase was added per tube during the second annealing step at 64°C for 2 min. After another 2 min at 72°C, 2.5 U Taq polymerase was added per tube during the third annealing step at 72°C followed with a final extension of 10 min at 72°C. The 15 lanes with all the 300 samples run in a single non-denaturing 8% polyacrylamide gel, heteroduplexes could be identified in 3 by staining with ethidium bromide. A subsequent pooling step divided the 60 samples of possible carriers in 6 reaction tubes, and so on.

With a total of 41 reactions, 3 carriers for the AF508 mutation were identified in this population. Individual analysis of each of the 300 samples confirmed the 3 AF508 heterozygotes and did not show any false-negatives. Although the occurrence of a mutation in an amplification-resistant sample might not be detected by this method, we did not find any. We have not seen contamination problems with Guthrie spots.