

LETTERS

Malaria and its prevention in British residents visiting west Africa <i>P.A. Phillips-Howard et al.</i>	226	Health checks in general practice <i>A. Wilson; J.R. Hughes</i>	228	Priorities in medical education <i>Nigel Oswald</i>	229
Precautions after missed contraceptive pills <i>D. Metson</i>	226	Diabetes mini-clinic <i>David Griffith; Ivan Benett</i>	229	Trainee representation <i>Malcolm Thomas and Jeremy Grimshaw</i>	230
Local oestrogen for recurrent epistaxis caused by familial telangiectasia <i>P.M.J. Tombleson</i>	227	Non-steroidal anti-inflammatory drugs <i>B.E. Marks</i>	229	The College: academic or political? <i>B.D. Morgan Williams</i>	230
Evaluation of a waiting list leaflet issued to general practitioners <i>J. Bennett et al.</i>	227	Diconal research: help wanted <i>Susan Paterson</i>	229	Fellowship by assessment <i>John Kelly</i>	230
Blood pressure intervention programme <i>W.M. van Zutphen and J. van Reek</i>	228	Incidence of otitis media <i>Peter Burke</i>	229	Note to authors of letters: Please note that all letters submitted for publication should be typed with <i>double spacing</i> . Failure to comply with this may lead to delay in publication.	
		Random analysis <i>A.J.B. Edwards</i>	229		

Malaria and its prevention in British residents visiting west Africa

Sir,
British travellers to west Africa are at considerable risk of contracting malaria, principally *Plasmodium falciparum* malaria, in both rural and urban areas. Recent reports¹⁻⁷ have indicated that resistance to chloroquine is now present in various countries in west Africa and it can be expected that chloroquine resistant *P. falciparum* will increase in prevalence in these countries, and spread to other areas of west Africa.

On 23 October 1987 a family of four British residents returned from a seven week holiday in Ghana. The 39-year-old father has resided in the UK for 13 years while his 29-year-old Caucasian wife and children aged six and three years have always lived here. The parents took 300 mg of chloroquine sulphate weekly and 200 mg of proguanil daily throughout their stay, without omission. The children received similar doses of chloroquine together with 100 mg of proguanil daily, also without omission. The parents became ill within two days of their return and microscopy confirmed all four had *P. falciparum* infections. None were hospitalized because their symptoms were relatively mild and parasitaemia low. All the members of the family responded to standard therapy (adult dose 600 mg quinine sulphate three times daily for five days, followed by three tablets of pyrimethamine (Fansidar, Roche) without recrudescence.

The prophylactic cover used by the parents was suboptimal while subpatent infections were revealed in the children who had received adequate protection. Furthermore, parasite isolates were not tested, so resistance to chloroquine is by no means substantiated. A reduction in efficacy is, however, tentatively suggested. This is reflected in data collated by the Malaria Reference Laboratory. The proportion of travellers to Ghana reported to

have taken combined prophylaxis of chloroquine and proguanil but who acquired *P. falciparum* infections rose from 2% to 14% of those for whom details of chemoprophylaxis were known between 1985 and 1987. The absence of information about drug use in the denominator population limits interpretation, but nevertheless, this combined regimen has been recommended to travellers visiting west Africa since 1985 (Ross Institute, unpublished report).

Visits to Ghana have doubled from 6587 to 11 246 per year over the last 10 years and over 32 000 visits were made to Nigeria in 1986 alone.⁸ Over the same period, cases of *P. falciparum* malaria in travellers returning from Ghana and Nigeria have risen threefold.

Physicians need to be aware that travellers visiting west Africa will be exposed to drug resistant parasites. Emigrant families residing in Britain cannot be considered to be semi-immune,⁹ and require adequate chemoprophylaxis for visits abroad. No regimen can be 100% effective. The misconception exists that the dosage of chloroquine base and chloroquine sulphate/phosphate are identical but 100 mg of chloroquine base is approximately equivalent to 136 mg of chloroquine sulphate and to 161 mg of chloroquine phosphate. All adult travellers should be advised to take 300 mg of chloroquine base weekly and 200 mg of proguanil daily, a week before travel, throughout their stay and for four weeks on return to the UK. In addition, measures to reduce contact with mosquitoes should be strongly recommended. It is probable that malaria breakthroughs will become increasingly common despite compliance with current prophylactic regimens. Any patients presenting with malaria or influenza symptoms subsequent to travel require immediate care; microscopic diagnosis is essential to ensure prompt and adequate treatment. *In vitro* testing of *P. falciparum* isolates is helpful to detect the spread of resistant strains.

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Precautions after missed contraceptive pills

Sir,
The latest Family Planning Information Service leaflets state that if a patient misses a combined oral contraceptive pill for more than 12 hours, she should recommence pill-taking as soon as she remembers and is then unprotected for seven days. If a pill is missed in the last