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Quinine-resistant malaria

To the Editor: A 27-year-old New Zealander arrived in Cape Town in mid-June 1989 from northern Zimbabwe, where she had been on a working holiday. During the 9 months that she had spent in Zimbabwe she had taken pyrimethamine plus dapsone (Maloprim) as malaria prophylaxis. Two months before leaving Zimbabwe she had developed symptoms that she attributed to malaria and had treated herself with chloroquine. The dosage and duration of this therapy is uncertain, but she experienced improvement. She was asymptomatic and had discontinued malaria prophylaxis on arrival in Cape Town.

On 2 July the patient consulted a pharmacist after the onset of another episode of what she considered to be malaria. She took 3 pyrimethamine plus chloroquine (Fansidar) tablets, but 3 days later, when there had been no improvement, she presented to a local general practitioner with a 5-day history of headache, fever, rigors and malaise. She was found to be pyrexial with a temperature of 38,5°C, but there was no evidence of hepatomegaly or splenomegaly. She had no neck stiffness or focal neurological signs. A full blood count was unremarkable, but a blood slide revealed scanty trophozoites of *Plasmodium falciparum.*

Therapy with quinine sulphate 650 mg 3 times a day for 10 days as well as tetracycline 250 mg 4 times a day for 10 days was commenced. Four days after starting to take the quinine the patient was asymptomatic.

She remained well until 27 July, when she had a succession of black-outs and was referred to a neurologist. At this stage she had a vague headache as well as slight photophobia, mild confusion, forgetfulness and inability to organise her thoughts. She was referred to Groote Schuur Hospital, where she was found to be jittery and tremulous with occasional myoclonic jerks. Fundoscopy showed blurred upper disc margins and she was assessed as having encephalopathy; a diagnosis of cerebral malaria was considered. Lumbar puncture showed protein 0,6 g/l in the cerebrospinal fluid, normal glucose, 1 + globulin, and 1 + red blood cells. There were 25 lymphocytes, but no organisms or polymorphs. Ziehl-Neelsen staining was negative. No encapsulated yeasts were seen. Serological tests for *Cryptococcus* were negative, as was the CSF VDRL test. A computed tomography scan of the head was normal. Biochemical investigations showed an elevated serum lactate dehydrogenase value of 232 U/l (normal 60 - 200 U/l), a serum aspartate aminotransferase value of 46 U/l (normal 0 - 40 U/l), a serum alanine transaminase value of 100 U/l (normal 0 - 53 U/l), and a γ-glutamyltranspeptidase value of 99 U/l (normal 0 - 50 U/l). The results of other tests were within normal limits.

On 30 July the patient had a generalised seizure lasting 2 minutes, and thereafter developed status epilepticus. She required intubation and mechanical ventilation with large doses of thiopentone sodium intravenously to control the seizures.

A thin malaria blood smear on 30 July revealed a few gametocytes characteristic of *P. falciparum.* The thick preparations showed occasional trophozoites.

A diagnosis of possible quinine-resistant malaria was made and the patient was given mefloquin 750 mg orally followed by 2 further doses of mefloquin 500 mg in the next 24 hours. The additional doses of mefloquin were given because there was some concern that she might not have absorbed the initial dose. In addition, as further antimalarial therapy co-trimoxazole 10 ml twice a day was given intravenously for the next 10 days. Intravenous phenytoin 100 mg 6-hourly, as well as the thiopentone sodium infusion, was used to prevent further seizures. Electroencephalograms were taken and blood smears examined daily. A blood smear on 2 August revealed no further evidence of *P. falciparum,* and four subsequent blood smears remained negative for parasites.

While on ventilation the patient was noted to have moderately elevated blood pressure (diastolic 100 mmHg), which was controlled on hydralazine 25 mg 6-hourly.

The intravenous thiopentone was discontinued after 5 days and she was maintained on phenytoin 100 mg 6-hourly intravenously and phenobarbitone 120 mg orally daily. She regained consciousness on 9 August and was extubated 2 days later.

The patient's history was considered to be reliable and she was thought to have been compliant with her medication. It is therefore our opinion that she had quinine-resistant malaria.

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Medical aid societies and rising costs of medical care

To the Editor: Having read Mr Speedie's comment[1] on my letter,[2] I wish to try to put some facts in their true perspective.

In 1980 medical fees increased by 50%. This adjustment was necessary because these fees had fallen behind; it was not done to build up a reserve to siphon off in the years that were to follow. And it was only done after the Minister of Health had told the medical schemes to get their act together. So in anybody's language the only sensible thing to do would be to use 1980 as the basis to work from. But Mr Speedie does not. I think it can be said without any fear of contradiction that this is juggling with figures. With what motive? This time the reader can supply the answer.

Now a look at what is really happening (Table I) shows a completely different picture from the one Mr Speedie tries to present. And doctors are now again ± 50% behind! I agree with Mr Speedie that it is farcical to suggest that their increases should be less than the consumer price index (CPI) or actual cost increases, but what boggles the mind is why he thinks the same does not apply to doctors and hospitals. By the way, I never suggested that subscriptions to medical schemes should not rise in sympathy with increases in the cost of health care, as Mr Speedie incorrectly states. This would be just as farcical as the situation is for doctors at present, with the inadequate increases in their fees by medical schemes.

Everybody knows that medical schemes are (unluckily) not obliged by law to pay doctors and hospitals directly, but the law

TABLE I. COMPARISON OF CONSUMER PRICE INDEX, DOCTORS' FEES AND MEDICAL AID FEES*

Year	CPI	Doctors' fees	Medical aid
1980	**100**	**100**	**100**
1981	**115**	**109**	**100**
1982	**132**	**116**	**137**
1983	**149**	**133**	**147**
1984	**166**	**153**	**195**
1985	**193**	**153**	**244**
1986	**228**	**172**	**323**
1987	**265**	**172**	**345**
1988	**299**	**203**	**389**

* Based on Green[3] and figures obtained from the Secretary of the Northern Transvaal Branch of the Medical Association of South Africa (personal communication).