Update

Malaria in the ADF, January–June 2001

The number of cases of malaria arising from ADF operations has fallen, but significant malaria exposure for ADF personnel continues.

Relapsing malaria

There are few data on relapse rates in the military medical literature. In the ADF experience over the past two years, a rate of approximately 20% is a fairly robust figure for the first and subsequent relapses. Given the number of ADF personnel deploying to malarious areas, it is inevitable that there will be a growing number of individuals with relapsing malaria. Dr John Simpson (Lavarack Barracks Medical Centre) and Captain Isaac Seidl (5/7 Battalion Royal Australian Regiment) have begun primary care of patients diagnosed with their fifth relapse of (vivax) malaria.

Managing recurrent vivax malaria is easier with an understanding of the lifecycle of the parasite. *Plasmodium vivax* enters the liver shortly after inoculation from an *Anopheles* mosquito. After an early hepatic phase of development, the merozoites exit the liver to infect erythrocytes, but some parasites remain to develop into late liver stages, or hypnozoites. Hypnozoites may deteriorate over time, or reactivate to produce malaria later. To prevent vivax malaria presenting after return to Australia, post-exposure prophylaxis (PEP), or "eradication", is required. The Army Malaria Institute (AMI) now recommends 6 mg/kg for treatment of vivax relapses. As this is not yet policy, clinicians should call AMI when treating such cases in this manner. Tafenoquine has shown some success in managing these cases, although the drug is yet to be registered for this or other purposes.

Tafenoquine

The field phase of a prophylaxis trial with 1 Battalion Royal Australian Regiment (1RAR) that compared tafenoquine and mefloquine was completed recently. Members of the trial group did not suffer one case of malaria in the area of operations. The additional contribution of a dedicated integral preventive medicine element within the battalion group cannot be underestimated in this excellent outcome. The trial will continue in a follow-up phase now that the battalion has returned to Australia.

Mefloquine

The encouraging results of the 1RAR prophylaxis trial also suggest that mefloquine is well accepted and effective in the field. To confirm this finding, mefloquine prophylaxis is being used with over 500 personnel from 4RAR, which has deployed to replace 1RAR in East Timor. Captain John Cunningham (4RAR) and Captain Anne Jensen (AMI) will assess effectiveness and tolerability in the field. Results will be reported in 2002.

Malarone

Malaria in Bougainville does not attract the attention it received before operations in East Timor. Nevertheless, two cases of falciparum malaria have been well managed by Flight Lieutenant Debbie Knight in Loloho, using Malarone (atovaquone and proguanil). Malarone is a well-tolerated oral medication to which falciparum malaria shows little resistance. Four tablets daily for three days adequately treats most cases of falciparum malaria. Chloroquine remains the preferred initial treatment for vivax malaria.

Short term prophylaxis

Approximately 30 ADF personnel visit East Timor each month. Presently, for a two-week visit, each person requires 30 doxycycline, 30 Malarone or eight mefloquine tablets, plus 56 primaquine tablets on return. The Australian Defence Human Research Ethics Committee recently approved AMI to begin a trial of primaquine alone as prophylaxis for visitors to East Timor. The principal investigator will be Lieutenant Commander Sonya Bennett. Prophylaxis will start the day before visiting and continue for only five days after returning to Australia. Good evidence of the efficacy of this regimen exists from other populations.[1-3] We hope to confirm the convenience of this method as an alternative to combined prophylaxis. Visitors being medically prepared for East Timor may be enrolled in this trial by contacting AMI (07 3332 4801) for details and informed consent.

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Malaria reported to the Central Malaria Registry, Army Malaria Institute

	1 January–30 June 2001	Total from East Timor exposure*	Total from Bougainville exposure*
P. falciparum	3	51	3
P. vivax	7	335	47
Mixed	—	7	—
Uncertain species	—	15	1
Other species	—	1	—
Total	10	409	51

*Total from commencement of ADF operations (September 1999 in East Timor, November 1997 in Bougainville).

1. Baird JK, Fryauff DJ, Basri H, et al. Primaquine for prophylaxis against malaria among nonimmune transmigrants in Irian Jaya, Indonesia. *Am J Trop Med Hyg* 1995; 52: 479-484.
2. Fryauff DJ, Baird JK, Basri H, et al. Randomised placebo-controlled trial of primaquine for prophylaxis of falciparum and vivax malaria. *Lancet* 1995; 346: 1190-1193.
3. Soto J, Toledo J, Rodriquez M, et al. Primaquine prophylaxis against malaria in nonimmune Colombian soldiers: efficacy and toxicity. *Ann Intern Med* 1998; 129: 241-244. ❑