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Case Report: Self-treated relapsing Vivax Malaria? [1]

by

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ABSTRACT

THIS IS A REPORT OF A CASE OF MALARIA in which the patient presumably inadvertently partially treated an undiagnosed episode of malaria before presenting with a probable relapse of the initial episode. It is presented for discussion with military health professionals who may see such cases.

CASE HISTORY

THE PATIENT WAS A MALE 80-kilogram infantryman who had an unremarkable previous medical history (Australian Defence Force Medical Employment Classification 1). He began mefloquine chemoprophylaxis prior to deploying into East Timor and reported no adverse effects following the loading dose.

Within two weeks of arriving in the area of operations he presented with headache, initial insomnia and early waking, and muscle and joint aches, which he did not feel impaired the performance of his duties. His sleep disturbance typically followed picquet duty. He ceased mefloquine chemoprophylaxis and began doxycycline 100mg daily.

Three months after transferring to doxycycline, he presented with arthralgia, fevers and chills, sweats, sore throat and a productive cough with yellow sputum. He was noted to have sublingual lymphadenopathy and pharyngitis, which was treated with Betadine gargle. At this time, having spoken with a friend who had leptospirosis, he began self-treating (undisclosed) with doxycycline 100mg twice daily. After some improvement the following day, he developed peripheral paraesthesia, loss of appetite, myalgia and increasing tiredness by the third day. No malaria parasites were seen on thick and thin blood films. He was treated with chest percussion and oxygen delivered by mask. By the eighth day, symptoms had resolved and he returned to doxycycline 100mg daily.

Six weeks after the onset of the previous episode, he developed nausea, fever, chills, myalgia and began double dosing with doxycycline again. Symptoms abated the following day. They, however, returned on the third day when he represented febrile (390 C), alert and orientated, though sweating profusely and complaining of headache, cough and shortness of breath. At this time, he was noted to have no clinical abnormality of the neurological or respiratory systems and no hepatosplenomegaly. Intravenous fluid and simple analgesia were begun as the patient was turned into the Regimental Aid Post.

Plasmodium vivax trophozoites and gametocytes (680/uL) were identified on blood slides. Treatment with Chloroquine 1500mg over the next three days produced rapid recovery and he moved to Dili for repatriation and further management by AMI clinicians.

DISCUSSION

The patient deployed on mefloquine chemoprophylax is. He ceased medication shortly after entering East Timor, despite a symptomless loading dose, which suggests that the circumstances of the deployment, at least, contributed to the initial symptoms. His first clinical episode occurred well after the conclusion of mefloquine chemoprophylaxis and is unlikely to be related.

The febrile periodicity (second daily) of the earlier clinical episode is consistent with vivax malaria and the same as that observed subsequently. The symptomatology is also similar with the second episode and consistent with vivax

malaria. This supports the hypothesis that he has suffered two episodes of vivax malaria, the first being only partially treated.

Doxycycline is generally effective in suppression of vivax malaria for Australian soldiers. If the earlier clinical episode reported in September was related to a P vivax infection, this could imply a failure of doxycycline chemo suppression. In favour of this is that the patient normally took doxycycline with breakfast; he, however, recalls missing two tablets only when on patrol two weeks prior to the first clinical episode. The incubation period for vivax malaria is approximately two weeks.

The soldier has used double dose of doxycycline for eight days during the acute phase of a condition consistent with malaria. Doxycycline treats malaria, including vivax malaria, slowly and by only addressing the blood stages leaving residual hepatic stages (hypnozoites) unaffected.[2] The overall efficacy and possible time to reappearance of parasites from failure of such treatment with doxycycline is difficult to determine. Treatment with quinine and doxycycline (100mg twice daily for seven days) can allow reappearance of parasitaemia as early as two weeks after starting treatment[3] due to their short half-lives suggesting failure to clear all parasites, compliance or absorption problems, or false (original) positive blood smears.

While doxycycline cannot be relied upon for causal prophylaxis (removal of liver and blood stages of P vivax), the release of blood-stage merozoites is generally well suppressed by doxycycline'. Therefore, at some stage, this patient has transiently allowed the establishment of infection. It is possible that the first clinical episode was true vivax malaria only partially treated with double dose doxycycline, suppressing parasitaemia below detectable levels, then gradually re-establishing to another clinical episode.

As the possibility exists that the confirmed episode was a relapse of vivax malaria, the patient was also treated with 6mg 1kg primaquine given as 30mg daily with food for 16 days. He tolerated this treatment well. Three months later, he has not developed further parasitaemia.

CONCLUSION

The only recalled non-compliance with doxycycline is the most likely time for instigation of infection. Self-treatment with doxycycline 200mg daily only slowly manages P. vivax parasitaemia; however, doxycycline 100mg daily may be less likely to maintain chemo suppression of an established (albeit low grade) parasitaemia.

Overall, this case demonstrates the requirement for vigilant and compliant prophylaxis. It also re-enforces the value of history in the clinical diagnosis of malaria. This should encourage generalist Medical Officers to undertake initial management of malaria with confidence.

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