Stevens-Johnson syndrome in two children in Ghana following anti-malarial treatment
C Oduru-Boatey and O Rodrigues
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What is This?
Quinine allergy usually presents as a diffuse maculopapular rash that does not spare photoprotected areas. Ultraviolet-related cutaneous side effects include photosensitivity and photoallergy. Ultraviolet A rays are mainly involved in photoallergy. Antimalarial drugs with structural homologies to quinine, such as chloroquine, mefloquine R, quinacrine, amodiaquine, quinidine and primaquine, are known to generate phototoxic products upon irradiation. Photosensitivity usually manifests itself as a marked sunburn, whereas photoallergy manifests itself either as solar urticaria (unreported for quinine), or as an exematiform rash on the photoexposed areas, which on prolonged exposure may progress to lichenification and ultimately chronic actinic dermatitis. Photosensitivity may persist up to three years after the interruption of quinine. Sensitization to quinine can be both systemic (quinine is present in sweat) and topical. Crossreactivity between quinine and quinidine photoallergy has been reported, but not with chloroquine. However, in this case, we presumed that the previous reaction to chloroquine was a photoallergy, and that there was crossreactivity with quinine. Given the limited facilities in this area, the diagnosis could not be confirmed by photopatch tests. The patient was advised to wear long sleeves and a hat and to avoid direct sun exposure, and she was given topical steroids and sun block. She was advised to mention that she was allergic to quinine, and her personal medical records clearly indicate that in the event of any future malaria attack she should be given artemisinin derivatives instead of quinine – even for P. vivax infection.

References

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Stevens-Johnson syndrome in two children in Ghana following antimalarial treatment

C Oduro-Boatey MWACP
O Rodrigues MRCP FWACP

Department of Child Health, Korle-Bu Teaching Hospital, Accra, Ghana
Correspondence to: Dr Oduro-Boatey
Email: oduroboatey@hotmail.com

The widespread emergence of chloroquine-resistant Plasmodium falciparum led to the introduction of an effective, fixed combination of two antimalarial drugs: pyrimethamine and sulphadoxine. Severe cutaneous adverse reaction (SCAR) including Stevens-Johnson syndrome, due to the sulphonamide component, were first reported from Europe and North America in the 1980s. They mainly followed prophylactic use. The first case after presumptive self-treatment was reported in 1989. We report two such cases seen recently at the Korle-Bu Teaching Hospital Accra. The use of corticosteroids appears to have ameliorated the illness in case 2.

Case reports

Case 1

A seven-year-old Ghanaian boy was admitted with a history of maculo-papular rash appearing three days after self-medication with a single dose of fansidar (pyrimethamine/sulphadoxine) for presumptive malarial fever. The rash became a generalized bullous eruption with extensive desquamation. He was severely ill and required intensive therapy including intravenous fluids, multiple blood transfusions for severe anaemia secondary to gastrointestinal bleeding, antibiotics for septicaemia and anticonvulsant therapy for repeated seizures. His right thumb and index finger were amputated for dry gangrene. He was not given corticosteroids. He was hospitalized for eight weeks, and made a slow recovery. Following discharge, he was lost to follow-up.

Case 2

An 11-year-old Liberian refugee girl took Malaquin (pyrimethamine/sulphamethoxazole) prescribed for treatment of malarial fever. She developed a maculopapular rash the following day, which proceeded to a generalized bullous eruption with extensive desquamation. Her eyes were inflamed and discharging. She was treated with intravenous fluids, prednisolone, and antibiotics. Her symptoms improved quickly and was discharged home after eight days.

Discussion

Fansidar is now the drug of first choice for malaria treatment in some African countries, as chloroquine...
Quinine allergy usually presents as a diffuse maculopapular rash that does not spare photoprotected areas. Ultraviolet-related cutaneous side effects include photosensitivity and photoallergy. Ultraviolet A rays are mainly involved in photoallergy. Antimalarial drugs with structural homologies to quinine, such as chloroquine, mefloquine R, quinacrine, amodiaquine, quinidine and primaquine, are known to generate phototoxic products upon irradiation. Photosensitivity usually manifests itself as a marked sunburn, whereas photoallergy manifests itself either as solar urticaria (unreported for quinine), or as an exomatiform rash on the photoexposed areas, which on prolonged exposure may progress to lichenification and ultimately chronic actinic dermatitis. Photosensitivity may persist up to three years after the interruption of quinine. Sensitization to quinine can be both systemic (quinine is present in sweat) and topical. Crossreactivity between quinine and quinidine photoallergy has been reported, but not with chloroquine. However, in this case, we presumed that the previous reaction to chloroquine was a photoallergy, and that there was crossreactivity with quinine. Given the limited facilities in this area, the diagnosis could not be confirmed by photopatch tests.

The patient was advised to wear long sleeves and a hat and to avoid direct sun exposure, and she was given topical steroids and sun block. She was advised to mention that she was allergic to quinine, and her personal medical records clearly indicate that after the interruption of quinine – even for _P. vivax_ infection.

**References**

5. Wirestrand LE, Ljunggren B. Systemically induced photodergy to quinine in the mouse can be elicited topically – and vice versa. _Acta Dermatol Venereol_ 1990;70:23-6
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C Oduru-Boatey MWACP
O Rodrigues MRCP FWACP

Department of Child Health, Korle-Bu Teaching Hospital, Accra, Ghana
Correspondence to: Dr Oduru-Boatey
Email: oduroboatey@hotmail.com

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**Discussion**

Fansidar is now the drug of first choice for malaria treatment in some African countries, as chloroquine...
resistance spreads. It is also widely used in Ghana, where it is now being recommended as the drug of choice for intermittent preventive treatment in pregnancy. The risk of SCAR is 40 times higher with prophylactic than with single-dose therapeutic use. Of an estimated 117 million users in 27 countries, between 1974 and 1989, the risk was 10 and 36 per million, respectively, for Europe and North America with mainly prophylactic use, and 0.1 per million for developing countries with mainly single-dose therapeutic use.\(^2\) This may, however, be an underestimate as other workers have estimated SCAR occurrences among prophylactic users to be between 1:5000–8000, with fatalities in 1:11,000–25,000 users.\(^2,5\) The incidence of Stevens–Johnson syndrome in children treated for malaria in Ghana is low. In the 12 months between October 2001 and October 2002, there were only two admissions with Stevens-Johnson syndrome following malaria treatment out of 986 admissions for malaria. As most of the seriously ill children in Accra are referred to this hospital, it is a reasonable assumption that this complication is relatively rare. The use of corticosteroids is controversial, but an early short course is reported to have a favourable outcome.\(^6\) It appears to have ameliorated the illness in case 2 and we would suggest its use. This report is a reminder that sulphonamide-containing anti-malarials may cause SCAR, though rarely, and health-care providers must remember this complication if a child who has had such medication should present with a rash.

References