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RESEARCH LETTER

Tonic water: A rare cause of exanthema

To the Editor,

Tonic water (or Indian tonic water) is a carbonated soft drink in which quinine is dissolved. Quinine is an alkaloid extracted from cinchona's bark.¹ Originally used as a prophylactic drink against malaria, nowadays it has significantly lower quinine content and is drunk for its distinctively bitter taste. In Europe, the European Food Safety Authority limits quinine's concentration in tonic water to 100 mg/L,² 0.25–0.50% of the concentration used in original therapeutic tonic water. Quinine is also a flavour component of bitter lemon, carbonated chinotto beverages and some traditional flavoured wines. Nowadays, tonic water containing quinine is added to many jello shot recipes to make the shot fluorescent. Reported cases of exanthemas caused by quinine contained in tonic water are rare.

Suspected allergy to quinine has to be studied, especially if the patient is planning to travel to a malaria endemic region. This allergy confirmation is still so important because, even nowadays, quinine is a mainstay in the treatment of severe malaria.³ Other antimalarial medicines, used extensively in the treatment and prevention of malaria, such as chloroquine and mefloquine,³ share a common quinoline core with quinine which may explain the possibility of cross reactivity,⁴ although this process has not been clearly demonstrated. This evidence emphasises, even more, the importance of quinine allergy investigation.

We report the case of a 37-year-old man who was sent to our outpatient clinic by the traveller's health clinic for suspicion of quinine allergy. The patient mentioned that more than 20 years ago he had a maculopapular exanthema hours after the ingestion of tonic water. At that time he was observed by a general practitioner who assumed that this reaction was a manifestation of quinine allergy. The doctor advised to keep quinine evicton, which the patient assumed rigorously, without accidental ingestions.

Due to the necessity of professional travel to Angola (a malaria endemic region) the patient was observed in a traveller's health clinic and referred to our outpatient clinic in order to confirm this allergy that hindered the possible pres-

cription of any anti-malaria drugs containing quinine. As the reaction had occurred a long time before and there was not a clear association with quinine, we decided to perform, after obtaining written informed consent, a drug provocation test (DPT) without previously performing skin prick tests and patch testing. Two hours after the last administration (cumulative dose: 300 mg quinine sulphate) the patient developed a pruriginous maculopapular exanthema (each lesion lasting more than 24 h) in the limbs, trunk and face. This exanthema persisted for five days despite therapeutics with oral corticosteroids and H₁-antihistaminics. The patient did not present any other signals or symptoms.

Quinine-related hypersensitivity manifestations have been reported to include thrombocytopenia and haemolytic uremic syndrome, lupus-like syndrome, photosensitivity, cutaneous vasculitis and anaphylactic shock.⁵ Reported cases of exanthema due to quinine contained in tonic water are rare.^{1,4–7} In this case quinine hypersensitivity was confirmed by the DPT. The patient and the traveller's health clinic were advised to do malaria prevention, and eventual treatment, with antimalarial drugs not sharing the quinoline core. Based on our clinical evaluation and after consulting the traveller's health clinic, the patient, by his own personal initiative, refused to travel and, consequently, was not medicated with any antimalarial drugs. Tonic water is widely consumed worldwide and may be an unreported cause of maculopapular exanthema.

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