Active intestinal schistosomiasis in travellers returning from the Democratic Republic of the Congo

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Although schistosomiasis is a widespread infection in the tropics, travellers are almost exclusively infected in sub-Saharan Africa, through exposure to freshwater infested with cercariae of either Schistosoma mansoni (intestinal schistosomiasis) or Schistosoma haematobium (urinary schistosomiasis) [1]. Primary infection may cause a febrile hypersensitivity reaction occurring three to 12 weeks post-exposure, with fever, cough and/or abdominal pain when schistosomules mature to egg-producing adult worms, the so-called “Katayama fever”. Hypereosinophilia is its early diagnostic hallmark. Definite diagnosis requires antischistosomal antibody detection, and/or demonstrating schistosomal eggs in stools, urine or rectal mucosa to be found on microscopy.

The mapping of schistosomiasis in the Democratic Republic of the Congo (DRC) was extensively compiled during the colonial period [2,3]. Thereafter, only few studies have examined outbreaks or new foci of infection [3,4,5] and, apart from occasional reports, there are no recent comprehensive data on schistosomiasis in travellers returning from the DRC [1,6].

From 1 January 2006 to 31 August 2007, as part of a larger ongoing study spanning 10 years of active schistosomiasis seen at our policlinic, we conducted a retrospective study on clinical presentation and associated biologic features on active intestinal schistosomiasis in all persons attending the Institute for Tropical Medicine in Antwerp, Belgium’s outpatient clinic who had returned from the DRC and in whom S. mansoni eggs were detected in a faecal sample using a concentration method for ova and parasites. Our cases from 2006 were incorporated in the latest TropNetEurop report on schistosomiasis [7]: of the 102 cases reported as being imported into Europe in 2006, the highest number was from Belgium (33), with the United Kingdom the next highest (10).

Of a total of 25 persons included in our study, 24 (96%) were of Caucasian origin, 20 (80%) were male, and 20 (80%) were European. Of the latter, most were Belgian expatriates, of whom 12 (60%) were children younger than 18 years old. Applying the World Health Organization’s 1993 criteria, infection was light to moderate (mean EPG 100, range 10 to 710) [8]. Three presented with symptoms of Katayama fever. All other persons were asymptomatic.

Three major sources of exposure were identified. Bathing in Kalemie, Lake Tanganyika (North Katanga province) (Google Earth: ‘Kalemie, Congo’) infected 3/25 (12%), of whom two were Belgian military personnel who developed Katayama fever after bathing near the area where the Kalemie river flows into the lake. The northern shore of Lake Kivu, near Goma (Google Earth: ‘Goma, Kivu’), was the source of infection in 4/25 (16%), all of them Belgian expatriates. Bobandana Bay, east of Goma city, has been a well-known focus since colonial times [2]. However, most acquired the infection in south Katanga (17/25, 68%). Lake Katebe was the stated source of infection in 11/17 (65%), all of them expats. Lake Katebe and Lake Wasela are the upstream and downstream part of a large artificial lake complex on the upper course of the Lualaba river, the lake Nzilo (formerly Lake Delcommune). The lake complex is situated northeast from the main Kolwezi mining sites (Google Earth: ‘Kolwezi, Congo’, or Google Maps: ‘Kolwezi, Katanga’). Despite an obvious effluent from a copper mine midstream,
Schistosomiasis seems to thrive in the lake complex, which is a popular weekend spot for water sports among the expatriate community. Systematic mollusciciding of the Lualaba river basin with copper sulphate was practiced in the 1950s, but has declined since independence [3]. A new influx of international expatriates recently arrived in sizeable numbers in the Kolwezi area to restart the moribund mining industry. One might thus expect an upsurge of schistosomiasis in that community in the near future.

Since the old-hand expatriate community in the DRC is well aware of the problem, it is likely that the widely practiced intermittent self-treatment with praziquantel keeps worm loads down. This probably accounts at least partially for the low fecal egg counts observed. Of course this treatment policy will not prevent Katayama fever among hitherto non-infected expatriates (praziquantel does not eliminate the immature schistosomules), nor will it be able to prevent neuroschistosomiasis entirely.

Many travellers are unlikely to forgo the pleasures of aquatic sports in an inviting freshwater environment, even when schistosomiasis is all too present, so there is a need for an evidence-based prevention and treatment policy for this specific community to minimise the morbidity associated with schistosomiasis. A combination of physical measures (thoroughly rubbing down the skin after bathing) and medications active against both the immature (artemisinin derivatives) and mature worms (praziquantel) at a given time after exposure might achieve this. However, the optimal treatment schedule still needs to be established [9].

References: