Streptolyphyes Stercoralis
Hyperinfection in a Patient with AIDS in Uganda Successfully Treated with Ivermectin

Sir—The article by Torres et al. [1] suggests that multiple-dose ivermectin is effective in treating Strongyloides stercoralis infection associated with HIV-1 infection. The authors also noted the lack of reports from areas in Africa in which both infections are endemic. Here we describe our experience with a patient with AIDS-related S. stercoralis hyperinfection in Uganda.

The patient, a 32-year-old man, had received a positive HIV-1 test result in 1989 and had enrolled in an HIV-1 longitudinal study [2] in January 1996 after developing features of acquired immune deficiency syndrome. At that time, routine microscopy of stool samples obtained from the patient showed S. stercoralis larvae. Mebendazole was administered at a dosage of 100 mg b.i.d. for 3 days, but there was no clearance of larvae in stool. The dose was doubled, 200 mg b.i.d. was administered for an additional 3 days, but this also proved ineffective. In September 1996, we obtained a supply of albendazole and administered a dosage of 400 mg b.i.d. to the patient for 3 days, which cleared the larvae from stool. In January 1997, there was recurrence. Treatment with albendazole was repeated at the same dosage, and the patient's stool was free of larvae for a period of only 1 month.

In April 1997, the patient developed severe pneumonia, and Strongyloides larvae were found in both sputum and stool samples. Treatment with albendazole was repeated at an increased dosage level of 600 mg b.i.d. for 3 days but without response.

In June 1997, we obtained ivermectin and administered the patient a single dose of 200 μg per kilogram of body weight. The patient's sputum and stool were cleared of larvae for 4 months. In November 1997, however, recurrence was again noted. At this point, a 3-day course of treatment with 200 μg of ivermectin per

References


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kilogram of body weight was given. A series of examinations of stool and sputum samples conducted over a 10-month period revealed no recurrence, and this was confirmed by the negative results of 2 stool cultures. The patient died in September 1998 of progressive HIV disease.

This is the first report from Uganda of Strongyloides hyperinfection syndrome complicating AIDS. This is surprising, given the large rural population with AIDS who would be susceptible to Strongyloides hyperinfection syndrome. Though this could be in keeping with the reported lack of association between AIDS and Strongyloides infection [3], poor investigative facilities and lack of awareness are other factors that might explain this fact.

Treatment of Strongyloides hyperinfection is difficult, especially in a rural setting, where the choice of drugs is severely limited, as was well-illustrated by this case. Treatment with the most common antihelmintic agent available in rural Uganda, mebendazole, was clearly ineffective.

Albendazole and single-dose ivermectin therapy were both temporarily effective in clearing intestinal larvae. A higher dosage of albendazole was no better than a standard dosage in treatment of disseminated disease. A 3-day course of therapy with ivermectin, on the other hand, resulted in an apparent clearance of larvae from all body sites, resulting in a sustained larvae-free period until the death of the patient due to underlying immunosuppression.

This report shows that Strongyloides hyperinfection syndrome does occur in association with AIDS in Uganda. It also suggests that albendazole and single-dose ivermectin may be useful in treatment of uncomplicated AIDS-associated Strongyloides infection. However, in the presence of dissemination, a longer course of ivermectin appears superior. The presence of Strongyloides in a patient’s stool and the concurrent presence of chest symptoms should prompt clinicians to examine sputum samples for larvae.

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The NOW S. pneumoniae Urinary Antigen Test Positivity Rate 6 Weeks after Pneumonia Onset and Among Patients with COPD

Sir—The recently published study by Gutiérrez et al. [1] provides additional information on the performance of the NOW Streptococcus pneumoniae urinary antigen test (Binax) and confirms the findings of other studies [2, 3]. For adults with community-acquired pneumonia (CAP), the test has an estimated sensitivity of 75%–85% among bacteremic patients and 50%–80% among nonbacteremic patients. Included among the unresolved issues regarding the performance of the NOW assay are, first, the duration of test positivity after onset of pneumococcal infec-

tion and, second, the positivity rate among patients with chronic obstructive pulmonary disease (COPD) who may be colonized by or infected with S. pneumoniae [4]. We present data to help clarify both of these issues.

Of the 120 patients with CAP and positive NOW urinary antigen test results in our study [3], 80 had urine samples that were collected at follow-up ∼6 weeks after admission to the hospital (median interval after onset of symptoms, 49 days [range, 33–89]; median interval after collection of first urine sample, 43 days [range, 31–82]). When unconcentrated samples were tested using the NOW assay, 38 (48%) of these samples yielded positive results. The longest duration of positivity of test results for any patient in our study was 89 days after onset of symptoms. Although we do not have more-recent urine samples from these patients, which would allow us to better characterize the duration of antigen positivity, our findings indicate that S. pneumoniae antigen can be detected in urine for several weeks following pneumococcal pneumonia. It is possible that S. pneumoniae antigenuria may be very prolonged in some patients, as is the case with Legionella antigenuria [5]. The practical implications of these findings apply to patients with pneumonia who have recently had a previous episode of pneumonia for whom a positive urinary antigen test result may be due to the first episode.

To evaluate the NOW assay among patients with COPD, we tested urine samples obtained from 97 patients with COPD (defined as those with a history of chronic progressive symptoms [cough, wheeze, or breathlessness] with objective evidence of irreversible airway obstruction on spirometry) who had no clinical or radiographic evidence of pneumonia. Forty-nine urine samples were collected from patients during exacerbations of COPD, and the remaining 48 samples were collected from patients with stable COPD during routine outpatient visits. Nasopharyngeal swab specimens and sputum samples (if avail-