Salmonella-S. mansoni ASSOCIATION IN PATIENTS WITH ACQUIRED IMMUNODEFICIENCY SYNDROME

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SUMMARY

Two young men with Salmonella bacteraemia, active schistosomiasis and the acquired immunodeficiency syndrome are reported. The clinical presentation comprised nonspecific signs and symptoms, such as fatigue, malaise, weight loss, diarrhea, prolonged fever, and hepatosplenomegaly. In one patient, liver biopsy showed poorly formed granulomata around Schistosoma mansoni eggs and hepatitis. Treatment of schistosomiasis alone induced consistent clinical improvement with eventual cure of both Salmonella and S. mansoni infections. Recognition of the Salmonella-S. mansoni association in patients with AIDS is important because treatment of schistosomiasis makes a difference, improving the prognosis of this otherwise, recurrent, potentially fatal bacteraemia.

KEYWORDS: Schistosomiasis; Salmonella; AIDS; Acquired immunodeficiency syndrome

INTRODUCTION

Salmonella bacteraemia occurs with increased frequency in infants, in the elderly and in patients with diseases associated with hemolysis (such as sickle cell diseases, malaria, and bartonellosis), with lymphoma, with leukemia, and with systemic lupus erythematosus. Patients with AIDS develop recurrent, relapsing Salmonella bacteraemia that is difficult to cure with antibiotics. In Sub-Saharan Africa gram-negative bacteraemia is second only to tuberculosis as a cause of death among HIV-infected individuals. Chronic persistent Salmonella bacteraemia has also been described in association with S. mansoni infection. The most common characteristics of the clinical syndrome are: I) a long history of a febrile disease; II) bacteraemia with one of many species of the genus Salmonella; III) chronic active schistosomiasis. We report two patients with AIDS and Salmonella bacteraemia that have been cured of the Salmonella infection after treatment for schistosomiasis with oxamnique.

CASE REPORTS

Patient 1: A 24-year-old, previously healthy white man, was hospitalized with fever, diarrhea, and a 10-kg weight loss over three months. Physical examination showed an ill, pale, and wasted man with a temperature of 39.8 °C, with patchy alopecia, generalized lymphadenopathy and oral candidiasis. His abdomen was protuberant with hepatosplenomegaly and ascites. The right lobe of the liver was tender to palpation and extended 4 cm below the right costal margin. The spleen was palpable 6 cm below the left costal margin. Edematous infiltration of the skin, and pedal edema were also observed. Initial laboratory investigations showed pancytopenia (haemoglobin, 8.1 g/dl; white blood cells, 3000/ cu mm; platelets, 65,000). His serum albumin was 1.7 g/dl; globulin, 4.5 g/dl. Three blood cultures grew Salmonella serogroup D. He tested HIV-positive by ELISA and western blot analysis. TCD4+ count was 265 cells/μl and TCD8+ was 1088 cells/μl. Serologic tests for cytomegalovirus, toxoplasmosis, hepatitis B and C, and a VDRL slide test were all negative. Liver biopsy specimens obtained during laparoscopy revealed poorly formed granulomata around S. mansoni eggs with scattered lymphocytes, plasma cells, and eosinophils; several areas of spotty necrosis of hepatocytes with lymphocyte and macrophage infiltration were documented.

The patient was easily irritable and agressive, and left the hospital prematurely, against medical advice. Just before dismissal, though, he was treated for schistosomiasis with oxamnique (15 mg/kg, body weight, single dose). He did not accept the diagnosis of AIDS and refused treatment with antiretroviral drugs. Notwithstanding, during his occasional visits to the outpatient clinic a consistent clinical improvement was observed. The patient’s fever and diarrhea subsided 20 days after being discharged from the hospital. In the following two months his weight increased 15 kg. The ascites and oedema of the lower limbs vanished and he continued to improve for the next five months. There was an involution of the liver and spleen, the latter being just palpable. Three consecutive blood cultures remained sterile. His hemoglobin was 12.1 g/dl; white blood cells, 5600/cu mm, and platelets,

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Depression of cell-mediated immune response in the host diminishes granulomatous response to S. mansoni eggs. Mice experimentally infected with S. mansoni and immunosuppressed by drugs or thymectomy develop diffuse and severe hepatitis. Liver tissue of patient 1 showed diminished granulomatous response to Schistosoma mansoni eggs and areas of hepatocyte necrosis.

There is no clear explanation as to why Salmonella-S. mansoni association has not been seen by other investigators in patients with AIDS. The association may help to explain the high proportion of Salmonella bacteremia reported in AIDS patients from Africa. It is probable that infection with S. mansoni may not even be considered by the physician examining a patient with AIDS and Salmonella bacteremia.

In addition, the routine use of active drugs against Salmonella, in AIDS patients, like sulfamethoxazol-trimethoprim or zidovudine may further distort the clinical features of this peculiar association.

It is also worth mentioning that egg output decreases sharply in mice experimentally infected with S. mansoni and immunosuppressed by drugs or thymectomy. A well formed granuloma seems to facilitate the migration of eggs in the host tissues. Without granuloma formation, S. mansoni eggs do not reach (or only in small numbers) the gut lumen. Diagnosis of schistosomiasis, based on stool microscopy, in this context, should be reexamined. Rectal or liver biopsies, and ELISA tests for circulating antigens would represent an alternative to stool examination in such cases. Studies in patients with schistosomiasis and AIDS and low TCD4+ cell counts are mostly needed either to confirm or exclude this interesting hypothesis.

RESUMO

Associação Salmonella-S. mansoni em pacientes com a síndrome da imunodeficiência adquirida

Apresentam-se os casos de dois jovens com bactereemia por Salmonella associada a esquistossomose mansoni ativa em pacientes com a síndrome da imunodeficiência adquirida. A apresentação clínica incluiu sintomas e sinais inespecíficos como fadiga, perda de peso, diarréia, febre prolongada e hepatomegalia. A biópsia hepática em um paciente revelou granulomas mal formados em torno de ovos de S. mansoni e hepatite de intensidade moderada. O tratamento da esquistossomose com oxamniquine induziu melhora clínica progressiva culminando com a cura da salmonelose e da esquistossomose. O reconhecimento da associação Salmonella-S. mansoni em pacientes com AIDS mostra-se importante nesses casos pois o tratamento da esquistossomose melhora o prognóstico da bacteremia por Salmonella que pode tornar-se recorrente e fatal nos pacientes com AIDS.

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