Kala-azar in a Brazilian child

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Abstract

We report the case of a six-year-old Brazilian girl referred for splenomegaly who first presented with fever, asthenia, and weight loss. Geographical location, clinical exam, and blood laboratories suggested kala-azar. Serology confirmed kala-azar diagnosis, but direct evidence of the parasites was not made. A treatment by meglumine antimoniate is given under hospital surveillance for two weeks. Thereupon, the patient is asymptomatic and all tests are normal.

Case Report

The female child is six-years-old and comes from Fortaleza in the state of Ceara in Brazil. Initial symptoms began six months ago and included fever, asthenia, and weight loss. The patient had been examined by various general practitioners without diagnosis. She is referred because of increasing splenomegaly. The patient's clinical exam reveals pale skin and fever (38.4 °C). Blood pressure is 90/60 mmHg. Pulse is 114 beats/min. She is 1.10 m tall and weighs only 17 kg. Abdominal exam reveals discreet portocaval venous flow with no signs of hepatocellular insufficiency. Liver is enlarged, non-tender, and smooth. Spleen is stage 5 hypertrophied. The patient has enlarged inguinal lymph nodes. The remainder of the physical exam is non-contributory. Tests' findings include: CBC: Normochromic and very microcytic anemia (Hb: 7.1 g), leucopenia (3,300 WBC), and thrombopenia (70,000 platelets/mm^3); ESR: 77 mm for first hour; serology of leishmaniasis: positive (1/1600 using immunofluorescence and 5 archs in electrosyneresis); bone marrow biopsy: the medulla is rich, but no Leishmania are seen.

The patient is given a meglumine antimoniate treatment with increasing doses reaching 60 mg/kg/day after three days. The drug is well-tolerated. Transient hepatic cytolysis emerges with alanine transaminasi (ALT) and aspartate aminotransferase (AST) 1.5 times above upper normal limit. After two weeks of treatment, the patient is completely asymptomatic. All of her laboratory tests are within normal range.

Background

According to the World Health Organization, leishmaniasis is a poverty-related disease whose public health impact has been, until recently, grossly underestimated. The disease is caused by protozoan parasites belonging to the genus Leishmania that are transmitted by the bite of a phlebotomine sandfly. There are approximately two million new cases each year - 1.5 million of cutaneous leishmaniasis and 500,000 of visceral leishmaniasis or kala-azar.[1] Kala-azar is endemic to South America, East Africa, the Mediterranean Basin, the Middle East, India, and China.[2]

Signs and Symptoms

The cardinal sign of kala-azar is an anarchic type of fever resisting all forms of treatment.[3] The disease always yields splenomegaly and is thought by many to produce the largest spleens in parasitology.[4] Lymph node enlargement can appear during late stages of the disease.[5,6] Contrary to adult manifestations, cutaneous signs such as erythematous, hyper- or hypopigmented papules and nodules of various sizes are rare in children.[7,8]

Diagnosis

Although not performed in the case reported, protein immunoelectrophoresis reveals hypergammaglobulinemia with an IgG peak in patients with kala-azar.[9] Serological tests, which are useful for the diagnosis of kala-azar, include ELISA (enzyme linked immunosorbent assay), direct agglutination test (DAT), indirect fluorescent antibody test (IFAT), and the rk39 dipstick test. ELISA is widely performed, particularly in epidemiological studies, because it is very simple. Anemia secondary to kala-azar is aregenerative because of bone medullar parasitic invasion.[10] Even without direct evidence of leishmania, this child's poor health condition coupled with the epidemiological, clinical, and biological presentations called for immediate treatment. In Brazil, the etiological agent of kala-azar is *Leishmania donovani*.[11] Without treatment, kala-azar can result in death within weeks to months.[12,13]

Treatment

Side-effects of this case's treatment drug of choice, meglumine antimoniate, include the following: i) Intolerance that usually appears after the first injections and consists of fever, chills, cough, myalgia, and/or skin rash. Treatment discontinuation is mandatory if such intolerance occurs; ii) Intoxication resulting in fever, cough, skin rash, polyneuritis, hepatitis, cardiac, and renal signs.

Alternative treatments for kala-azar include sodium stibogluconate, amphotericin B, liposomal amphotericin B, pentamidine, and paromycin.[14-18]

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