Severe Babesiosis in a Patient Treated With a Tumor Necrosis Factor α Antagonist

To the Editor—A 57-year-old woman from Cape Cod presented to our facility with fever and a syncopal episode. She reported 1 week of fatigue before her evaluation. On examination, she was febrile (38.6°C) but otherwise appeared well, with a positive Castell’s sign and palpable spleen tip. Her medical history was significant for Crohn’s disease treated with infliximab, with the most recent dose administered 6 weeks before presentation. She did not report smoking or alcohol consumption, denied any travel history, and worked in a local office. Blood work on admission revealed a white blood cell count of $6.8 \times 10^3/\mu L$ with a normal differential, a hemoglobin level of 11.5 g/dL, a hematocrit of 34.8%, and a platelet count of $88 \times 10^3/\mu L$. The patient’s serum lactate dehydrogenase level was elevated (659 U/L), her creatinine level was normal (0.81 mg/dL), and her aspartate amino-transferase and alanine aminotransferase levels were slightly elevated (54 and 39 U/L, respectively). Intraerythrocytic parasites were visualized on a blood film and confirmed via light microscopy as babesia with 14.1% parasitemia.

The patient was initially treated with azithromycin (500 mg daily) and atovaquone (750 mg twice daily) for babesiosis, in addition to empiric therapy with doxycycline (100 mg twice daily) for possible coinfection with *Borrelia, Ehrlichia*, and *Anaplasma*. Doxycycline was discontinued on hospital day 2, after results were negative for *Ehrlichia* (polymerase chain reaction) and *Borrelia* (serology). The patient appeared well despite parasitemia of 15% for 4 days, and her treatment was briefly switched to quinine and clindamycin (650 and 600 mg, respectively, each 3 times daily on hospital day 4). Atovaquone and azithromycin treatment were restarted on hospital day 5, when her parasitemia declined to 10%. Parasitemia was undetectable by microscopy on hospital day 7. The patient was treated for 2 additional weeks with atovaquone and azithromycin after her parasitemia became undetectable, for a total of 3 weeks of therapy. She was well at follow-up appointments 3 and 12 weeks after hospital discharge, with blood work revealing absent parasitemia and normalizing anemia and liver function values.

To our knowledge, this is the second case of babesiosis reported in a patient treated with an anti–tumor necrosis factor (TNF) agent. The first report involved a patient in Wisconsin with underlying rheumatoid arthritis treated with etanercept (50 mg weekly) and prednisone (5 mg daily) in whom *Babesia*
Babesia microti was identified via polymerase chain reaction and blood film [1]. That patient was treated with clindamycin and quinine, but treatment was changed to azithromycin and atovaquone because of symptoms of cinchonism. No parasites were present by the fourth day of therapy, and treatment was discontinued after 10 days, with complete resolution of symptoms and normalization of blood work results.

Our case is unique, because our patient had substantial parasitemia (14%–15%) for 5 days. Because TNF-α has an important role in controlling intracellular infections, its blockade may predispose individuals to severe infections, such as tuberculosis, endemic mycoses, and intracellular bacterial infections [2]. Immunosuppressed individuals, such as our patient, may have protracted symptoms in addition to markedly elevated parasitemia and may require treatment for longer durations [3]. It is likely that there will be more cases of severe babesiosis given the increasing use of TNF-α blockers and related biologic agents.

Note

Potential conflicts of interest. All authors:
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References