

Study raises concerns for Babesia patients and blood banks

Monday, December 12, 2016

<http://danielcameronmd.com/study-raises-concerns-babesia-patients-blood-banks/>

by Daniel J. Cameron, MD MPH

A [recent study published in *Vector-Borne and Zoonotic Diseases*](#) examined the seroprevalence of *B. microti* infection in individuals who tested positive for Lyme disease (LD). The authors found that nearly 30% (28.6%) of serum samples taken from individuals with LD tested positive for Babesia. However, since the study was retrospective, the authors could not be sure whether the individuals were already aware they tested positive for Babesia or if they had already been treated for it. [1]

The high prevalence of Babesia found in the serum samples is not new. "Reported [co-infection rates of *B. microti* with *B. burgdorferi*](#) in humans vary greatly and can range from 10% to 32%," [2,3] according to Curcio from the Department of Biomedical Sciences, Long Island University. [1] In the 2015 issue of *Trends in Parasitology*, Diuk-Wasser and colleagues report that up to 40% of patients with Lyme disease experienced concurrent Babesiosis. [4]

Identifying Babesia is critical since antibiotic treatment differs from that prescribed for Lyme disease. "Doxycycline is the preferred oral treatment because it has activity against other tick-borne illnesses such as human granulocytic anaplasmosis, whereas the treatment for Babesiosis is a combination of atovaquone and azithromycin," explains Curcio. [1]

In the Curcio study the highest incidence of Babesia occurred in children between 1 and 10 years old.

The clinical presentation and outcome for the serum sample positive for Babesia was not examined. "We presumed that these individuals were symptomatic because they were being tested for Lyme disease; however, we have no clinical information regarding previous tick exposure or diagnoses," according to Curcio.

Another study indicates that doctors are reluctant in ordering tests for tick-borne diseases, like Babesia. When data was collected from 7 large commercial laboratories results indicated that out of the nearly 3 million (2,978,881) specimens tested for tick-borne diseases (including Lyme disease), only 3% involved testing for Babesia. [6] The study also showed that 85,323 Babesia tests were ordered compared to more than 2 million (2,432,396) Lyme disease tests.

Concern for blood banks?

Curcio and colleagues express concern over the transmission of Babesia through blood banks if patients are not evaluated for the disease. "B. microti is the highest ranking pathogen that is transmitted by blood transfusion in the United States, for which there is no FDA-approved donor screen currently implemented." [1]

"Transfusion transmitted babesiosis (TTB) has high fatality in transfusion recipients with 28 deaths attributed to complications from TTB reported from 1979 to 2009," she adds. "And 4 TTB-associated deaths reported to the FDA between 2010 and 2014."

Babesia has already been reported in the blood supply. A study in 2012 by Tonnetti and colleagues found that of the 2,150 donations tested in Minnesota between October 2010 and November 2011, "42 donors (2.0%) were positive by IFA." [1]

"It could be expected that the number of tested blood donors in New York State would be higher," explains Curcio, "as it represents 37.2% of the total number of CDC-reported babesiosis cases."

The authors suggest babesiosis screening for the nearly 5 million recipients who undergo blood transfusions annually in the USA. "Thus, the implementation of an FDA-approved screening has the potential to save many lives." [1]

The *New England Journal of Medicine* features a video on "Babesia microti in the U.S. Blood Supply."

[YouTube Video](#)

References:

1. Curcio SR, Tria LP, Gucwa AL. Seroprevalence of Babesia microti in Individuals with Lyme Disease. *Vector Borne Zoonotic Dis.* 2016;16(12):737-743.
2. Krause PJ, Telford SR, 3rd, Spielman A, et al. Concurrent Lyme disease and babesiosis. Evidence for increased severity and duration of illness. *Jama.* 1996;275(21):1657-1660.
3. Johnson L, Wilcox S, Mankoff J, Stricker RB. Severity of chronic Lyme disease compared to other chronic conditions: a quality of life survey. *PeerJ.* 2014;2.
4. Diuk-Wasser MA, Vannier E, Krause PJ. Coinfection by Ixodes Tick-Borne Pathogens: Ecological, Epidemiological, and Clinical Consequences. *Trends Parasitol.* 2015.
5. #BMG-120 Babesia microti IgG IFA Kit from GENTAUR Molecular Products. at [http://www.antibody-antibodies.com/product_det.php?id=209999&supplier=search&name=Babesia microti IgG IFA Kit](http://www.antibody-antibodies.com/product_det.php?id=209999&supplier=search&name=Babesia%20microti%20IgG%20IFA%20Kit). Last accessed 12/10/16.
6. Connally NP, Hinckley AF, Feldman KA, et al. Testing practices and volume of non-Lyme tickborne diseases in the United States. *Ticks Tick Borne Dis.* 2016;7(1):193-198.
7. Tonnetti L, Thorp AM, Deisting B, et al. Babesia microti seroprevalence in Minnesota blood donors. *Transfusion.* 2013;53(8):1698-1705.

Study raises concerns for Babesia patients and blood banks - <http://danielcameronmd.com/study-raises-concerns-babesia-patients-blood-banks/>