

## **First report: Babesia odocoilei causes babesiosis in humans**

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*Babesia odocoilei* has been identified in two individuals based on PCR testing and DNA sequencing of the 18S rRNA gene, writes Scott and colleagues in the study [“Detection of \*Babesia odocoilei\* in Humans with Babesiosis Symptoms.”](#)<sup>1</sup>

According to the authors, “the same two human subjects had the hallmark symptoms of human Babesiosis, including night sweats, chills, fevers, and profound fatigue.”

### **First cases reported of the tick-borne parasite *Babesia odocoilei* causing illness in people.**

“Based on symptoms and molecular identification, we provide substantive evidence that *B. odocoilei* is pathogenic to humans.”

**“Clinicians must realize that there are more than two Babesia spp. in North America that cause human Babesiosis.”**

Researchers identified *B. odocoilei* in 2 out of 19 subjects participating in a Babesia study in Canada.<sup>1</sup>

#### **Patient 1**

A 23-year-old woman did not recall a tick bite but was treated clinically for Babesia with atovaquone (Mepron). She experienced temporary relief with treatment.

The woman continued to have symptoms commonly associated with Babesiosis, including night sweats, chills, fevers, profound fatigue, increased thirst, muscle aches, and sleep disturbance.

Her spleen remained intact. When she was tested for Babesia spp., using molecular characterization, she was positive for *B. odocoilei*.

#### **Patient 2**

A 74-year-old man was treated for Babesia following a *I. scapularis* tick bite. He tested positive for *Babesia duncani*.

“He developed familiar Babesia symptoms, namely, night sweats, chills, fevers, profound fatigue, increased thirst, muscle aches, and sleep disturbance.”

The patient’s symptoms improved but he relapsed after several different courses of treatment which included: atovaquone (Mepron) and azithromycin; atovaquone and proguanil (Malarone), and a derivative

of *Artemesia annua*, an herbal medication used for human Babesiosis.

**“We suggest that clinicians may, in reality, be dealing with *B. odocoilei* rather than *B. duncani* or other *Babesia* spp.”**

The authors questioned the initial diagnosis, as the patient “was positive for the fluorescent in situ hybridization (FISH) assay, which is a genus-specific test for *Babesia*.” But, “FISH is not species-specific and simply represents *Babesia*.”

Instead, they suggest the man experienced “what was thought to be *B. duncani* but was actually *B. odocoilei*.”

*Babesia* can be difficult to treat, the authors explain. “Clinicians indicate that *B. duncani* is more virulent than *B. microti*, and more difficult to treat.”

### **Patients lived in non-endemic regions**

Both of these patients lived in non-endemic regions for *Babesia*. It appears that migratory birds are transporting ticks infected with *Babesia odocoilei* to various regions.

“North-bound, migratory songbirds widely disperse *B. odocoilei*-infected *I. scapularis* larvae and nymphs.”

Another study warns, “The presence of *B. odocoilei* and *Bbsl* in a bird-feeding *I. scapularis* nymph indicates that this vector tick may subsequently transmit a dual infection to a suitable host, including a human.”<sup>2</sup>

### **Treatment-resistant symptoms concerning**

The authors expressed concern over the recurrent pattern of *Babesia* symptoms. “This recrudescence pattern of symptoms after treatment modalities indicates that certain babesial infections can be persistent in the human body.”

“Persistence of *B. odocoilei* lasted for more than 3.5 years in [the 74-year-old man] despite treatment modalities with standard anti-*Babesia* therapy.”

#### **Related Articles:**

[Podcast: Babesia microti in a multiple sclerosis patient](#)

[Case series shows wide range of Babesia symptoms and presentations](#)

[Babesia infections transmitted through blood supply](#)

**References:**

1. Scott JD, Sajid MS, Pascoe EL, Foley JE. Detection of Babesia odocoilei in Humans with Babesiosis Symptoms. *Diagnostics (Basel)*. May 25 2021;11(6)doi:10.3390/diagnostics11060947
2. Scott JD, Clark KL, Durden LA. Presence of Babesia odocoilei and Borrelia burgdorferi Sensu Stricto in a Tick and Dual Parasitism of Amblyomma inornatum and Ixodes scapularis on a Bird in Canada. *Healthcare (Basel)*. 2019 Mar 20;7(1):46. doi: 10.3390/healthcare7010046. PMID: 30897803; PMCID: PMC6473902.

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