Is Lyme disease like the Tortoise in Aesop's "The Tortoise and the Hare"?

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https://danielcameronmd.com/tick-borne-illnesses-and-the-tortoise-and-the-hare/

The Tortoise and the Hare fable tells the story of a race between a tortoise (a creature that moves very slowly) and a hare (a creature that can run very fast). The hare is very confident of winning, so it stops during the race and falls asleep. The tortoise continues to move very slowly but without stopping and finally, it wins the race. Thie fable was cited in a public workshop, sponsored by the Food and Drug Administration (FDA) tick-borne illnesses.

The Tortoise and tick-borne agents

Ticks have been with us for millions of years. In an accidental discovery, Professor George Poinar, Jr., a paleoentomologist and parasitologist, recently "identified ticks preserved in a piece of amber estimated to be between 15 and 20 million years old."[2,3]

Tick-borne illnesses discussed included Lyme disease, Anaplasmosis, and Babesia. These diseases have taken a foothold in animal reservoirs, e.g., the white-footed mouse.

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Tick-borne diseases have been with us at least 5,300 years. Scientists from McMaster University's Division of Rheumatology in Ontario, Canada found "Lyme disease in bodily tissues of a 5,300-year-old male found frozen in a glacier pool in the Italian Alps (colloquially referred to as the Iceman or Otzi). [4]

The Hare and arboviral diseases

Dr. Leiby likened the arboviral disease to a hare. Arboviral diseases are caused by a group of viruses spread to people by the bite of infected insects, such as mosquitoes and ticks.

Tick-borne diseases "emerge gradually, persist over long periods of time due to reservoir hosts, while arboviral diseases appear with little warning, and in the absence of reservoir hosts often 'burn out' quickly."

Therefore, tick-borne diseases "are likely to pose expanding and long-term challenges to blood safety," he writes.

The arboviral agents/diseases discussed, which included Chikungunya Virus (CHIKV), Dengue virus (DENV), Zika virus, and Yellow fever virus (YFV), have not established a foothold in animal reservoirs.

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A few arboviral diseases have established themselves in the US. West Nile virus (WNV) and Eastern equine encephalitis virus (EEV) have known reservoirs and vectors to bridge the disease to humans.

Tick-borne viruses

There are tick-borne viruses that do not fit The Tortoise and the Hare analogy, as Dr. Leiby pointed out. These include the following:

• Colorado tick-fever virus, transmitted by Rocky Mountain wood ticks
• CrimeanCongo hemorrhagic fever virus, transmitted by Ixodes ticks
• Tick-borne encephalitis virus complex (TBEV, Powassan virus, DTV), transmitted by Ixodes ticks
• Heartland and Bourbon viruses; and those responsible for severe fever with thrombocytopenia syndrome (SFTS), transmitted by Ixodes ticks

Editor's Note: The analogy offers some insight into why tick-borne illnesses will likely remain a public health problem.

Related Articles:

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Ticks and Lyme disease with us since the Ice Age

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References:

1. Mohan KVK, Leiby DA. Emerging tick-borne diseases and blood safety: summary of a public workshop. Transfusion. 2020.
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3. Nuwer R. Lyme Disease's Possible Bacterial Predecessor Found in Ancient Tick. in Scientific America. https://www.nature.com/news/lyme-bacterium-s-possible-ancestor-found-in-ancient-tick-1.15378.
4. Kean WF, Tocchio S, Kean M, Rainsford KD. The musculoskeletal abnormalities of the Similaun Iceman ("OTZI"): clues to chronic pain and possible treatments. Inflammopharmacology. 2013;21(1):11-20.

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