Tick-borne disease is not just Lyme

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Video Abstract

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Abstract

Tiny but tenacious, the tick is one of the most dangerous creatures on earth—and perhaps one of the most misunderstood. Because while typically associated with Lyme disease, ticks can actually harbor more than 120 different species of bacteria, each a unique source of infection. Unfortunately, the one-microbe, one-disease myth surrounding the tick extends well beyond the court of public opinion. The lack of broad-spectrum diagnostics in the clinic means that a single sufferer of tick-borne disease may spend up to $60,000, or 54,000 €, on more than 11 visits, doctors, and tests just to get a proper diagnosis. A 2018 blood analysis of 432 individuals showing symptoms of Lyme disease puts the problem in perspective—and calls for revamped screening procedures that decrease the probability of missed or misdiagnosis. Each individual was confirmed positive for Lyme disease following criteria established by the Centers for Disease Control or alternative test platforms; they were then tested against 20 different microbes. These included various species of Borellia, the bacteria linked to Lyme disease; tick-borne co-infections; and opportunistic bacteria and viruses. An astounding 65% of patients responded to multiple microbes, and 72% of specimens deemed negative by the CDC criteria responded positively to Borrelia's persistent form. Overall, the research indicates that 85% of individuals, regardless of their Lyme disease diagnosis stage following the CDC's two-tier criteria or other methods, will respond to multiple microbes. According to the authors of the study, that effectively debunks the public health misconception that tick-borne disease is limited to Lyme. Screening for multiple microbes, they say, would reduce the rate of misdiagnosed or undiagnosed cases and increase the health-related quality of life for all patients. That's crucial, because by the year 2050, tick-borne disease is expected to affect 35% of the global population. The authors argue that a paradigm shift in clinical diagnostic practices for tick-borne disease is long overdue. Now is the time to curb the growing tick-borne disease epidemic around the world.