Lyme disease *Borrelia* spp. in ticks and rodents from northwestern China

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ABSTRACT: In May 1999, field surveys of Lyme disease spirochetes were conducted around the Tianshan Mountains in Xinjiang Uygur Autonomous Region in northwestern People’s Republic of China. *Ixodes persulcatus* ticks were obtained in a Tianchi Lake valley with primary forest, while the tick fauna was poor in the semidesert or at higher altitudes in this region. Species identities were confirmed by molecular analysis in which an internal transcribed spacer sequence was used. Of 55 adult ticks, 22 (40%) were positive for spirochetes as determined by Barbour-Stoenner-Kelly culture passages. In addition, some rodents, including *Apodemus uralensis* (5 of 14 animals) and *Cricetulus longicaudatus* (the only animal examined), and some immature stages of *I. persulcatus* (4 of 11 ticks) that had fed on *A. uralensis* were positive for spirochetes. Based on 5S-23S rRNA intergenic spacer restriction fragment length polymorphism analysis and reactivity with monoclonal antibodies, 35 cultures (including double isolation cultures) were identified as *Borrelia garinii* (20 isolates, including 9 Eurasian pattern B isolates and 11 Asian pattern C isolates), *Borrelia afzelii* (10 pattern D isolates), and mixed cultures (5 cultures, including isolates that produced *B. garinii* patterns B and C plus *B. afzelii* pattern D). These findings revealed that Lyme disease pathogens are distributed in the mountainous areas in northwestern China even though it is an arid region, and they also confirmed the specific relationship between *I. persulcatus* and genetic patterns of *Borrelia* spp. on the Asian continent.
有しているものもあった。リポソームRNA遺伝子間スペースー領域のRFLP解析とモノクローナル抗体の反応性により、最優先種は、*Borrelia garinii*で*Borrelia afzelii*がそれに次いだ。また両種の混合も見られた。この調査で、ライム病原体が乾燥した中国北西部の山岳地帯に分布していることが明らかになった。

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