



Are the Clinical Signs of Lyme Borreliosis Really Understood in Horses?

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Editorial

Lyme disease is the most common zoonosis transmitted by ticks in North America and Europe, which is caused by *Borrelia burgdorferi* sensu lato [1]. It is also diagnosed in Asia [2], Africa [3] and South America [4]. This kind of borreliosis is transmitted to mammals by ticks' exposure to nymph or adult stage as far as 24 hours adhesion in the host is established, which ensures the regulation of outer surface proteins that are responsible for their survival against the host immune system [5].

The disease was first described in horses by Van Heerden and Reyers (1984) and since then many studies have reported the occurrence of clinical signs associated with seropositive horses. These signs are often nonspecific and attributed to horses by analogy of the disease in humans, such as stiffness, lameness, myopathies, back soreness, lethargy, fever, swelling of limbs, encephalitis and behavioral changes [5]. There are also some reports of concomitant uveitis and presence of *Borrelia* in the ocular chamber [6] and pseudolymphoma, responsive to treatment with doxycycline [7].

However, there is only one work experimentally dedicated to the disease in horses [6,7]. In this study, ponies were experimentally infected by exposure to ticks containing *Borrelia burgdorferi* and they were observed for 9 months. Afterwards, they were carried out to euthanasia for molecular detection of the agent in various tissues. Moreover, ponies had detectable antibodies from five to six weeks followed the exposure, although they have not presented relevant clinical signs at any moment.

In this uncertain scenario, questions begin to be risen through the scientific community regarding the significance of Lyme disease in horses and the real importance of horses in the dissemination of the etiologic agent [8]. The set of scientific papers in this area is mostly composed by reports of individual cases, serological surveys and agent molecular researches [9-12].

The Lyme borreliosis will be better understood only in horses after presentation of clinical epidemiologic studies and their correlated risk factors, in addition to controlled experimental infections aiming a more precise description on how the disease evolves in horses.

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