

NEUROBORRELIOSIS IN ADULTS

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ABSTRACT

Neuroborreliosis is an infection of the central and peripheral nervous system caused by spirochetes of the genus *Borrelia*, possibly by certain genospecies, e.g. *B. burgdorferi*, *genospecies garinii*. The nervous system is first afflicted during the early stage of Lyme Borreliosis with dissemination; the main features include meningitis, radiculoneuritis and polyneuritis cranialis. Late Lyme Borreliosis presents as sensory polyneuropathy in association with acrodermatitis chronica atrophicans or as progressive *Borrelia* encephalomyelitis. The diagnosis is confirmed by the presence of intrathecally produced specific antibodies and positive culture or PCR respectively. The accepted treatment of neuroborreliosis is either by ceftriaxone, possibly also by penicillin or doxycycline.

KEY WORDS

neuroborreliosis, diagnosis, therapy

INTRODUCTION

Several species of the genus *Borrelia* are capable of infecting the central and/or peripheral nervous system, hence causing the clinical entity of neuroborreliosis (NB). This review of NB in adults does not deal with diseases caused by tropical *Borrelia* species (e.g. *B. recurrentis* or *B. duttoni*), but only with the neurologic manifestations of *B. burgdorferi* (*Bb*) infection.

In 1922 C. H. Garin and C. H. Bujadoux described a patient with meningoradiculitis following a tick bite and associated with erythema migrans (EM) (1). In a very extensive review A. Bannwarth tried

to categorize this disease entity, assuming it to be a rheumatological disorder (2). It was only after the discovery of the causative agent (3) of Lyme arthritis (4) that the etiology of this nervous system disease was recognized as being spirochetal (5-7).

This disease, now known as Lyme Borreliosis (LB) is present in nearly every part of the world, showing focal clustering.

CLINICAL PRESENTATIONS

The course of adult NB is highly variable. In about 30% to 40% of patients the disease starts with a characteristic skin lesion, the so-called erythema

