# Borrelia burgdorferi genospecies in humans and ticks in the Alpe Adria region

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SUMMARY

In this paper we report on the genospecies prevalence of *Borrelia burgdorferi* sensu stricto we found in human Lyme borreliosis and in the tick vector *Ixodes ricinus* in two distinct but restricted areas of the Alpe Adria region, the Karst and Belluno territory. Different rates of genospecies prevalence were found in the two areas studied, in humans as well as in ticks, with a net predominance of *Borrelia afzelii* in human infection in the Belluno area.

KEY WORDS

***Borrelia burgdorferi, Borrelia afzelii,* isolation of strains, ticks, detection of DNA, *Ixodes ricinus,* epidemiology, RFLP profiles, genospecies**

## Introduction

Lyme borreliosis (LB) is endemic in North-Eastern Italy, affecting humans mainly in the Friuli Venezia Giulia and Veneto regions. About 50 cases per year have been recorded at the Hospital of Cattinara, Trieste (Department of Dermatology), and 119 patient with LB have been recorded at the Hospital of Belluno during the 1993-98 period.

Investigations on the presence of *Borrelia burgdorferi (Bb)* sensu lato, the etiological agent of LB in Italy have been carried out mainly in the Karst territory by isolating strains and by detecting *Borrelia* DNA in the tick vector *I. ricinus* by PCR (1,2), leading to the identification of the circulating genospecies and the risk locations. Since the prevalence of the circulating genospecies of *Bb* is important for epidemiological reasons and for basic knowledge on the biology of the organism, both in humans and ticks, we report here the comparative data obtained from the identification of the *Bb* strains isolated from patients with genospecies found in ticks, in the Karst and Belluno areas.

## Methods

### Clinical samples and isolation of Bb

Samples of skin biopsies, blood, heart biopsies, or cerebrospinal fluid were taken from patients with various manifestations of LB and put into BSK medium containing 5% normal rabbit serum. All specimens were incubated at 32°C for at least two months, and samples of each culture were examined for spirochetes weekly