
EPIDEMIOLOGY OF LYME BORRELIOSIS IN AUSTRIA

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More than 14 years ago W. Burgdorfer has discovered borrelia in hard ticks of the genus *Ixodes*. Shortly thereafter these spirochetes have been identified as the agents of Lyme disease, a tick-borne disorder which was described in the 1970ies by A.C. Steere. These spirochetal organisms were identified as a new species of borrelia and named *Borrelia burgdorferi*. During the last decade many strains of these borreliae have been isolated from humans, reservoir hosts and ticks. Currently we differentiate at least three species which are pathogenic for humans, namely, *B. afzelii*, *B. burgdorferi* sensu stricto and *B. garinii*.

Recent studies have demonstrated that in western Europe all three species are present. In eastern Europe and Asia, however, *B. burgdorferi* sensu stricto has not been found yet. There are a lot of serotypes among the various species, most of them from the species *B. garinii*.

Clinical features of the today called Lyme Borreliosis have been known in Europe for about a century. It was the Viennese dermatologist Benjamin Lipschütz who for the first time described erythema chronicum migrans (ECM) in 1913.

ECM is the most frequent manifestation of Lyme

Borreliosis in our country. Since the first epidemiological studies in 1983 we observed ECM with increasing frequency amounting to 5,000 cases each year, which have been registered at the Hygiene Institute of the University of Vienna. This figure represents about one fifth of the cases observed in Austria each year. For several years we have observed the maximum of ECM cases in July. The seasonal peak is a consequence of the maximum of the tick activity in May and June. An equal seasonal pattern is also known in neighbouring countries such as Slovenia.

In the first epidemiological study which we have conducted in Austria in 1984, about 400 clinically well defined cases were collected from all parts of the country. ECM counted for 70% of all cases, meningopolyneuritis ranked second (20%), acrodermatitis chronica atrophicans was seen in 7%. Borrelial lymphocytoma and Lyme arthritis were observed only very rarely.

Interestingly, previous tick-bites were recalled from patients with ECM in only 50% and in about 40% of patients with meningopolyneuritis. Since we consider ticks as the only relevant vectors of Lyme Borreliosis, it is clear that many tick-bites go unrecognized. However, 18% of ECM

patients recalled previous insect bites. Whether these were correct identifications remains open. The role of insects in the transmission of borrelia is still a matter of speculation.

The location of tick bites on the human body differs in children and adults. About 75% of children are bitten on the head and adults most frequently on the lower extremities, gluteal, inguinal and abdominal region.

Lyme Borreliosis is seen in all age groups and in both sexes with an overall equal distribution.

From a clinical point of view there are selflimiting and chronic manifestations of Lyme Borreliosis. Selflimiting means that the manifestation may heal without treatment. In some cases, however, manifestations may persist, recur or progress, e.g. acrodermatitis chronica atrophicans.

The incidence of Lyme Borreliosis in Austria has not been established yet. Prospective epidemiological studies are required which will be based on widely accepted clinical case definitions. The estimated incidence, however, is on average a calculated 150 cases (range 50 - 300) of 100,000 inhabitants per year.

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