CLINICAL FEATURES OF ERYTHEMA MIGRANS DEPENDING ON THE GENOTYPE OF THE PATHOGEN OF LYME BORRELIOSIS

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Annotation	Lyme borreliosis (LB) is the most common disease in Europe and North America, characterized by predominant involvement of the skin, nervous system, and joints. The most common manifestation of the disease is erythema migrans (EM) – a skin lesion that develops as a result of the penetration of Borrelia burgdorferi sensu lato (s.l.) complex bacteria during a bite by an infected ixodid tick. In Europe, the development of the disease is caused by several Borrelia species, including B. afzelii, B. garinii, and the closely related B. bavariensis, which can cause EM. **Aim** of the study: to determine the clinical manifestations of erythema migrans in LB depending on the pathogen genotype of Lyme borreliosis **Materials and methods**. We examined 115 patients with clinical signs of LB, namely skin lesions in the form of EM. There were significantly more female patients than male patients: 75 (65.2%) versus 40 (34.8%), $p<0.05$. Patients were treated on an outpatient and inpatient basis between 2021 and 2025. Laboratory verification of the diagnosis of LB was performed based on the presence of serum antibodies to highly specific antigens of Borrelia burgdorferi s.l. A two-step diagnostic scheme (ELISA and immunoblot) was used,employing the EUROLINE Borrelia RN-AT test systems from Euroimmun AG (Germany). In particular, serum IgM antibodies to OspC B. burgdorferi s.s., B. afzelii, and B. garinii, as well as to p39 and p41, were determined. The results were analyzed according to the manufacturer's recommendations. Possible clinical features of EM were studied depending on the Borrelia species that caused LB:B. burgdorferi s.s., B. afzelii, and B. garinii. **Results of the study**: Using immunoblotting, serum IgM antibodies to antigens of various Borrelia genotypes were detected in 48 (65.7%) of 73 patients examined with Lyme borreliosis and erythema migrans. In patients with the erythematous form of Lyme borreliosis with IgM present, OspC antigens of two Borrelia genotypes (B. burgdorferi s.s., B. afzelii) were significantly more likely to have pink erythema with a solid surface, oval shape, and clearly defined edges, $p<0.05$. Among patients with the erythematous form of Lyme borreliosis and detected IgM antibodies simultaneously to OspC antigens of three species of Borrelia (B. burgdorferi s.s., B. afzelii, and B. garinii), there were significantly more individuals with erythema with a solid surface, elongated shape, and purple color,with clearly defined edges, $p<0.05$. **Conclusions.** The presence of serum antibodies of class M to OspC antigens of B. burgdorferi s.s., B. afzelii, and B. garinii in various combinations in patients with the erythematous form of Lyme borreliosis indicates the involvement of all pathogens in the development of erythema migrans. The clinical features of erythema migrans in patients with LB, depending on the established Borrelia genotype, have been established. The clinical features of erythema migrans in patients with Lyme borreliosis caused simultaneously by the genotypes B. burgdorferi s.s., B. afzelii, and B. garinii in residents of the Ternopil region have been identified for the first time.
Tags	*Lyme borreliosis, Borrelia genotypes, erythema migrans, clinical features*
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