

Abstract

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Title: Lyme borreliosis (Diploma thesis)

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Field of study: Pharmacy

Background: We investigated the presence of Lyme disease in the area of Havlickuv Brod based on laboratory diagnostics of specific or non-specific antibodies in the blood serum and in the liquor. The aim was to define typical laboratory signs of illness and recommend rational methods in diagnosis of Lyme disease.

Methods: We used the data from Havlickuv Brod hospital laboratory of immunology. Patients were divided into the groups according to the results of basic tests (if there were immunoglobulines type M and type G in serum or liquor), sex, age, the day of blood collection, code of diagnosis, patient's doctor and the type of running tests (ELISA, westernblot). These groups were compared. Patients with at least one positive result in basic tests and with any of additional test at the same time were divided in compliance with relations amongst these types of tests. We tried to determine appropriate interval between taking samples during monitoring the dynamics of the disease by contribution-based method.

Results: More threatened by Lyme borreliosis are older women and people over the age of fifty-five. The highest number of new cases appeared in August 2008. We could have seen mostly atypical running of disease compared to the other infectious diseases during our research. The most successful in recognising Lyme disease in 2008, 2009 and 2010 were dermatologists and otolaryngologists. With regards to the slower immunity response it is advisable to collect and test the blood serum eight weeks later after the penetration. Other numerous diagnoses investigated for the presence of borrelia pathogens are W (means small wounds) or Z (for suspicion to patient's pathological state). Patients with positive antibodies against this pathogen in blood samples had higher values of rheumatoid factor tests.

Conclusions: The retrospective study of patients from Havlickuv Brod region showed higher incidence in elderly people, mostly women in the period of the highest occurrence of carrier (genus *Ixodes*) and vector (*Borrelia burgdorferi*) in the nature, i.e. from June to September. Another intensive point of new manifestation is in January due to full onset of late phase symptoms. ELISA tests were confirmed by westernblots in one third cases. So it is suitable to

check every positive serum (tested by ELISA) by blotting methods for the right diagnosing. Tests which confirm Lyme disease are meaningful eight weeks after the penetration of bacteria. It is necessary to consider clinical manifestation as well as laboratory results during the diagnostics. Lyme borreliosis also have cross- reactions with some other pathogens as Herpes viruses, autoimmune or rheumatic diseases.