

Comment

Dear Reader,

special issue of "Progress in Medicine" consisting of 3 original and 5 review articles has been dedicated to selected, but current and emerging problems in the field of virology and mycology.

The largest ever epidemic of Ebola hemorrhagic fever, which affected West African countries in 2014 and caused more than 10,000 deaths (acc. to the WHO report of 01.04.2015), now turned into its second phase, characterized by slowing the spread of infections and their gradual silencing. However, reported cases of disease and even deaths in Europe and the United States drew attention to the real risk associated with possible spread of the disease outside Africa. On this background, the proper diagnosis of hemorrhagic fever, a disease with such a heterogeneous etiology, becomes currently an extremely important new challenge for the Polish health care system. In this matter an article presented by Dr. Orzechowska from Wrocław may be helpful. The author discusses the pathogenesis of viral hemorrhagic fevers of different etiology, including their epidemiology and differences in the clinical presentation. Taking into account the changes in the environment, global warming and the possibility of rapid migration of people and animals from distant climate zones, in any situation of atypical symptoms of hemorrhagic fever the possibility of infection transferred from tropical countries or areas of its endemic occurrence cannot be excluded. In the second paper particularly dedicated to Ebola virus, the authors – Professor Wróblewska and Dr. Pancer from Warsaw, not only describe the pathogenicity, pathomechanism and the epidemiological situation in different African countries, but also pay attention to the possibility of limiting the infection through proper decontamination of contaminated environment, and new strategies for immunoprophylaxis or therapy. An article by Dr. Pyrc, Assistant Prof. from Krakow, on human coronaviruses fits well with the theme of new threats to human. Recent studies using methods of molecular biology have led to the discovery of new species of coronaviruses. On their example it has been demonstrated that, analogously to the Ebola virus, bats could be an important reservoir of human coronaviruses. Further, as a result of breaking the species barrier, the new threat agents, such as SARS-CoV, and now MERS-CoV, arose.

A paper on infection with Epstein-Barr virus is devoted to diagnostic problems. The authors in a comprehensive manner discussed the development of the disease pathomechanism and stimulation of immunity to primary infection, and presented various possibilities of laboratory diagnosis of infectious mononucleosis. Therefore, this article can be a valuable clue for pediatricians for routine diagnosis of febrile illness in children.

The most severe consequences of human cytomegalovirus infection are observed in immunodeficient patients. On the example of patients after organ and hematopoietic stem cells' transplantations, the direct and indirect impact of cytomegalovirus have been shown, focusing on its role in the pathogenesis of graft rejection, development of vascular disease and autoimmune processes, as well as on efforts to reduce the productive replication of the virus during the time-course of intensive immunosuppressive therapy.

The problem of fungal infections, mainly with invasive yeast-like in seriously ill persons, that often are immunocompromised, hospitalized in intensive care units and nourished parenterally, was the subject of three original studies. The use of molecular methods in the diagnosis of these infections allowed for differentiation of distinct *Candida* spp. isolates, which enabled tracking their clonal spreading in a hospital environment (article of M. Sikora et al.) or, in contrast, ruled out such a possibility by demonstration of their high genetic diversity (article of Tsimbalari E et al.). The authors of the third article (Jarzynka S et al.) have tried to assess the virulence of different clinical strains of *C. albicans*, *C. parapsilosis*, and *C. glabrata* isolated during catheter-related fungal infections on the basis of their phenotypic and genotypic properties: enzymatic activity, presence of particular proteases' isozymes and the ability to form biofilms. The latter capability of yeast-like fungi with potent impact on their virulence is very interesting not only because of cognitive purposes, but also as an important starting point for development of new forms of therapy, since destroying the structure of the biofilm should allow for better penetration of the antifungal agents.

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