PRZEGL EPIDEMIOL 2008; 62: 503 - 504

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CMV VACCINE - DEMANDS AND CONCERNS

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Słowa kluczowe: CMV, szczepionka
Key words: CMV, vaccine

Cytomegalovirus (CMV) is the main cause of congenital infections in human. Moreover, infection with mild course in immunocompetent persons, in state of immunocompromision caused threat for patients' life. Therefore vaccine for CMV could provide the magnificent control tool.

Defining the target groups and benefits of vaccinations are important steps for any vaccine design. In case of CMV, prevention of congenital infection seems the most important aim, particularly from a public health point of view. The protection of transplant recipients is the second goal while vaccination as a prophylactic strategy in general population is discussed.

The specific goals for CMV vaccine development create the basis for consideration of immunological response elements that should be stimulated. It was demonstrated that neutralizing antibodies are crucial for protection against primary infection and transmission *via utero*, so antibodies are the most important element in protection against congenital infection. However, despite the presence of these antibodies, the secondary infection could take place. It was clear that vaccine should stimulate the response for broad spectrum of CMV strains. Although antibodies are essential in the prevention of CMV infection, immunoglobulins alone are not sufficient to protect immunocompromised patients. It was stated that cellular immune response, particularly level of virus-specific cytotoxic lymphocytes, correlated with protection against symptomatic CMV infection. Furthermore, the stimulation of helper lymphocytes is necessary for long-lasting cellular as well humoral response.

Knowledge about immune response components which should be stimulated by vaccine makes possible to design antigenic composition. This is however complicated by the fact of unusual complexity of cytomegalovirus, coding for 200 proteins. Proteins considered as vaccine candidates are surface glycoproteins, tegument phosphoprotein pp65 as well as nonstructural immediate-early protein - IE1. This time several different vaccine as live attenuated, recombinant, subunit, peptides, vectors, DNA as well as incomplete particle use, are in preclinical and clinical state of development.

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SZCZEPIONKA CMV – PERSPEKTYWY I PROBLEMY

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