

STUDIES ON CYTOMEGALOVIRAL (CMV) INFECTIONS IN NEWBORN CHILDREN

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Additional infections during pregnancy tend to higher mother and neonatal morbidity and mortality if compared to other perinatal complications. Based on bibliography about 2% of all children are intrauterinally infected and another 10% during labour or immediately after it. In other words, placental barrier could be overcome by primary mother infection or after reactivation of latent infection during pregnancy. The inborn transmissible diseases TORCH (toxoplasmosis, rubella, CMV and herpes) are considered to be basic reason for innate mental insufficiency. Between 0,5% and 2% of USA children have inborn CMV-infection. According to Kibrick et Loria CMV has greater importance for central nervous system (CNS) disorders with consequent delay in mental and motor functions and development, to compare them to rubella and toxoplasmosis taken together.

Infectious disease of pregnant women could not be diagnosed only by clinical signs. Subclinical course and unclear symptoms require from the specialist (obstetrics and gynecology) to analyse laboratory parameters, too. For example, clinical signs of TORCH-infections tend to diagnostic mistakes in 95% of cases with primary CMV-infection due to the fact that majority of intrauterinally infected newborn children are practically healthy after birth and only 10% of them show well expressed signs of the disease.

Newborn children with abnormalities, their mothers, as well as control group of clinically healthy babies, all examined in departments and labs of Medical University-Varna.

Period of investigation - March/September 1991. Our aim is to analyse the relative part of CMV for perinatal morbidity and mortality.

Indirect micro-ELISA test for detection of specific anti-CMV IgM and IgG antibodies (Organon Teknica) is applied. IgM-antibody detection suggests an acute, most probably primary infection and if IgM are registered in umbilical blood serum, it is very possible that this infection is innate one. The test is suitable because of the necessity of only one single serum sample for diagnosis.

IgG-anti CMV-antibodies usually suggest an infection of the

adults. As for the newborn those IgG allow a presumption for a transplacental passive immune response (from mother to embryo) to defence the baby in early postnatal period. Primary infection could be confirmed by using this test only if 4-time increase of antibody titres in double serum sample (2-week interval) is registered.

From all 1000 newborn children 19 (1,9%) show different abnormalities and 6 (0,6%) are still-born. If parallel study of mother serum (immediately after labour) and umbilical serum of newborn is carried out the result is 14 positive cases of transfer of IgG antibodies. Higher antibody titres in newborn serum are registered in 2 of the cases, in another 2 the titre is twice lower. One of the babies shows 4-time lower titre. The results of the controls do not differ considerably. Our results coincide to those of other authors.

IgM-antibodies are found in one child only (0,1%); mother serum carries no IgM-antibodies and titre 1:400 of IgG-antibodies. It is known that unlike to rubella, CMV-infection in a latent state in a women with immunity showing no change of antibody titres could be transferred to the population. Majority of cases shows no symptoms of infection in adults, tending to subclinical course; if reactivation of the virus is registered there are no IgM-antibodies detected in patients. Laboratory data of acute CMV-infection are objectively confirmed by pulmonary findings and hypoplasia of cerebellum. This child (case-report from our study) has a lethal issue; age 3-months, diagnosis: genetic abnormality - syndrome of Marfan. Therefore, in this case it is most probably that this is a genetic disorder combined with acute CMV-infection.

We could conclude that CMV is an often reason for intrauterine infections, regardless to high frequency of antibody detection in adults. Recidives of CMV-disease during pregnancy in individuals with high titre immunity, as a result of reactivation of latent infection, are rather characteristic if compared to reinfections. Therefore, it is obligatory to plan a screening of all pregnant women with "high risk" and to register in due time a possible intrauterine infection of newborn with CMV.

References can be kindly requested from the authors.