Passive Immunization During Pregnancy for Congenital Cytomegalovirus Infection


PURPOSE OF THE STUDY. To investigate the effectiveness of cytomegalovirus (CMV)-specific hyperimmune globulin for primary CMV infection during pregnancy as a preventive therapy for lethal CMV infection.

STUDY POPULATION. One hundred fifty-seven pregnant women from 8 Italian cities with a primary CMV infection diagnosed via serologic testing.

METHODS. Women were placed in 1 of 2 groups. The therapy group comprised women who underwent amniocentesis and whose amniotic fluid contained either CMV detected by culture or CMV DNA detected by polymerase chain reaction. The group was offered intravenous CMV-specific hyperimmune globulin at a dose of 200 U per kg of maternal weight. Additional intravenous, intraumbilical-cord, or intra-amniotic doses were administered if evidence of persistent fetal involvement was present on ultrasound. Women with CMV-positive amniotic fluid who declined to receive hyperimmune-globulin infusions were followed as a comparison group. Those in the prevention group, consisting of women with a recent primary infection before 21 weeks’ gestation or who declined amniocentesis, were offered monthly hyperimmune globulin (100 U/kg intravenously). Pregnant women who declined monthly administration of hyperimmune globulin were followed as a comparison group.

RESULTS. In the therapy group, 31 women received hyperimmune globulin, only 1 (3%) of whom gave birth to an infant with symptomatic CMV disease, compared with 7 (50%) of 14 women who did not receive hyperimmune globulin. Thus, hyperimmune-globulin therapy was associated with a significantly lower risk of congenital CMV disease (adjusted odds ratio: 0.02; 95% confidence interval: −∞ to 0.15; P < .001). In the prevention group, 37 women received hyperimmune globulin, 6 (16%) of whom had infants with congenital CMV infection, compared with 19 (40%) of 47 women who did not receive hyperimmune globulin. Thus, hyperimmune-globulin therapy was associated with a significantly lower risk of congenital CMV infection (adjusted odds ratio: 0.32; 95% confidence interval: 0.10 to 0.94; P = .04). No adverse effects resulted from CMV-specific hyperimmune globulin administration.

CONCLUSIONS. Treatment of pregnant women with CMV-specific hyperimmune globulin is safe, and the findings of this nonrandomized study suggest that it may be effective in the treatment and prevention of congenital CMV infection. A controlled trial of this agent may be appropriate.

Information Leaflet and Antibiotic Prescribing Strategies for Acute Lower Respiratory Tract Infection: A Randomized, Controlled Trial

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*Pediatrics* 2006;118;S54

DOI: 10.1542/peds.2006-0900

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