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Commentary

Cytomegalovirus Congenital Infection in Children of Seropositive Women with Symptoms

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DESCRIPTION

Cytomegalovirus (CMV) is the most common congenital virus infection in the world. Congenital CMV (cCMV) transmission is most likely in seronegative women who contract primary CMV infection during pregnancy. Secondary CMV infections in pregnant women with preconceptual immunity (either through reactivation of latent virus or re-infection with a new strain of CMV) appear to contribute to a much higher proportion of symptomatic cCMV than previously thought. We present a case of symptomatic cCMV infection in a newborn born to a woman who had proven immunity prior to pregnancy. CMV PCR from amniotic fluid and foetal MR imaging confirmed the diagnosis. The newborn displayed typical cCMV symptoms such as jaundice, hepatosplenomegaly, cholestasis, petechiae, small head circumference, and sensorineural hearing loss, which is the most common neurologic sequela. CMV was detected by PCR in infant blood and urine, and intravenous ganciclovir was started and continued orally for 6 weeks. Apart from the persistent right-sided deafness, the child's neurological development was normal until the last follow-up at 4.5 years. To date, hygiene counselling for women of childbearing age is the most effective strategy for preventing vertical CMV transmission, which, in our case and in accordance with recent literature, applies to both seronegative and seropositive women. There are no established procedures to reduce the risk of transmission or therapeutic options for the foetus with signs of infection once an expecting mother shows seroconversion or signs of an active CMV infection. Ganciclovir can be given to symptomatic infants after birth to prevent viral replication and improve hearing and neurodevelopmental outcomes. A thorough review of the literature, including our case study, reveals the most up-to-date and significant diagnostic and treatment options. Finally, the triad of maternal hygiene counselling, postnatal hearing screening of all new-borns, CMV PCR in symptomatic infants, and antiviral therapy in infants with symptomatic cCMV provides an outline of best practise for reducing the burden of CMV transmission sequelae.

Cytomegalovirus (CMV) is a common infectious agent in the general population, with seropositivity rates ranging from 40% (in most European countries) to 90% (in most African and Asian countries) in adult women. Previously, it was thought that symptomatic congenital CMV (cCMV) infection occurred almost exclusively after primary infection of the mother during pregnancy, and that preexisting maternal CMV immunity protected the unborn child from infection in the case of maternal recurrent infection. This suggests that populations with higher seroprevalence rates may be less likely to contract primary maternal CMV infection and, as a result, have lower rates of symptomatic cCMV. Data from populations with low socioeconomic status and high seropositivity rates in women of childbearing age, on the other hand, typically have higher overall rates of cCMV infection (1%-2%) than the global average (0.4%-0.7%). Up to 10% of these infections cause symptomatic congenital disease, while the same proportion of children are asymptomatic at birth but develop permanent sequelae later in life.

Currently, the most important strategy for reducing the risk of cCMV infection in pregnant women is hygiene counselling. There are no established procedures to reduce the risk of transmission to a child if an expecting mother shows seroconversion or signs of an active CMV infection. Similarly, there are no therapeutic options for a foetus showing signs of infection. Antiviral treatment in symptomatic infants after birth can reduce the risk of hearing loss, the most common neurological sequelae, as well as the risk of neurodevelopmental delay in infancy. However, due to a lack of randomised controlled trials, strategies for determining the best route and duration of treatment vary greatly.

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