A healthy newborn born to a mother with Crimean-Congo hemorrhagic fever: is there protection from transplacental transmission?

We read with great interest the recent paper by Yilmaz et al. on the epidemiology of Crimean-Congo hemorrhagic fever (CCHF) in Turkey. We have recently experienced a birth of a baby born to a mother with CCHF and wish to discuss the effect of the virus on pregnancy and the fetus.

The transmission of CCHF to humans is through tick bite or by direct contact with blood or tissues of infected humans or viremic animals. Nosocomial transmission and horizontal transmission of the infection from a mother to her child have also been reported. Vertical transmission during pregnancy is theoretically possible, but effects of maternal disease on the fetus have not been reported to date. We report herein a healthy newborn with a maternal history of CCHF and aim to discuss transplacental transmission of the virus.

A 2300 g male infant was born at 37 weeks of gestation to a 29-year-old mother. The pregnancy was uneventful up until 30 weeks of gestation, when the mother experienced malaise and fever (39°C). Although the mother had a history of recent travel to Çankırı, a city where CCHF is endemic, no evidence of tick bite was noted. Laboratory investigation revealed pancytopenia with a white blood cell count of 2.9 x 10^9/l, hemoglobin 8.5 g/dl, platelet count 75 x 10^9/l, and elevated liver enzymes, creatine phosphokinase, and lactate dehydrogenase. The activated partial thromboplastin time was 45 s. Reverse transcriptase-polymerase chain reaction (RT-PCR) for CCHF virus was positive. The mother was discharged on day 8 of hospitalization with totally normal clinical and laboratory findings.

The baby was born small for gestational age, but all other findings were normal. He was admitted to our neonatal intensive care unit (NICU) and isolated because of the maternal history of CCHF. He did not develop any signs or symptoms of CCHF during his one week follow-up in the NICU. Hematological and laboratory findings were normal. He was admitted to our neonatal intensive care unit (NICU) and isolated because of the maternal history of CCHF. He did not develop any signs or symptoms of CCHF during his one week follow-up in the NICU. Hematological and biochemical tests were normal and RT-PCR for CCHF virus was negative.

There are no data in the literature about the fetal effects of maternal CCHF acquired at any time during pregnancy. In the present case, the mother had acquired the disease at 30 weeks of gestation, just 7 weeks before delivery, and there was no evidence of transplacental transmission. The timing of the infection during pregnancy is important for disease manifestations. Viral infections acquired in the first trimester usually lead to abortion or spontaneous abortion. In the last trimester, vertical transmission of the viral infection leads to disease manifestations in the neonatal period or later in infancy. The timing of the infection might have been a protective factor for the fetus in our case. To the best of our knowledge this is the first case with maternal CCHF during pregnancy.

One thousand eight hundred and twenty CCHF cases were diagnosed between 2002 and 2007 in Turkey and the crude fatality rate has been calculated to be 5%. This is much lower than previously reported, with figures of 30–50% from Africa, Asia and Europe. This may be related to the lower virulence of the virus circulating in Turkey. Our case's mother had a benign disease course and recovered completely in a week. We believe that the severity of the maternal disease in addition to the lower virulence of the virus circulating in Turkey may be important factors affecting transmission to the fetus.

Conflict of interest: No conflict of interest to declare.

References


Ozge Aydemir*, Omer Erdeve, Serife Suna Oguz, Ugur Dilmen
Neonatal Intensive Care Unit, Dr. Zekai Tahir Burak Maternity Hospital, Ankara, Turkey

*Corresponding author
E-mail address: drozgegenc@yahoo.com.tr (O. Aydemir)

Corresponding Editor: William Cameron, Ottawa, Canada
4 February 2009