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UNIVERSAL SCREENING FOR CONGENITAL CYTOMEGALOVIRUS (C-CMV) USING REAL-TIME POLYMERASE CHAIN REACTION (RT-PCR) FROM UMBILICAL CORD BLOOD

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Objectives: C-CMV infection affects 0.4-2% of newborn infants in Israel, most of whom are asymptomatic. Of these, 10-20% will subsequently develop hearing impairment and might have benefitted from early detection by universal neonatal screening.

Methods: We retrospectively analyzed the results of a universal screening C-CMV program using RT-PCR from umbilical cord blood, carried out at the Sheba Medical Center, Israel over a 1-year period. C-CMV was confirmed by urine CMV culture (Shell-vial assay). All confirmed cases were further investigated for C-CMV manifestations by means of head ultrasound, complete blood count, liver enzyme measurement, ophthalmology examination and thorough hearing investigation and follow up.

Results: From June 1, 2009 to May 31, 2010, 11,022 infants were born at the Sheba Medical Center, 8,105 of whom (74%) were screened. Twenty three (0.28%) samples were positive for CMV and all except one were confirmed by urine culture. Two more infants, who had not been screened, were found positive after clinical suspicion. All 24 infants were further investigated, and three (12.5%) were found positive for central nervous system involvement (including hearing impairment) and offered intravenous ganciclovir for six weeks. Of these 24 infants, 18 (82%) infants would not otherwise have been diagnosed.

Conclusion: The relatively low incidence of C-CMV detected in our screening program probably reflects the low sensitivity of cord blood screening. Other screening methods using urine or saliva should be further investigated. Nevertheless, this screening program detected a non-negligible number of infants that could benefit from early detection.