

The enigma of defining “symptomatic” CMV babies according to neuroradiological findings

Giulia Polleri ^{1,*}, Alessandro Parodi ^{1,2}, Diego Minghetti ¹, Domenico Tortora ³, Mariasavina Severino ³, Andrea Rossi ³, Emilio Cristina ⁴, Elio Castagnola ⁴, Luca Antonio Ramenghi ^{1,2}

¹ Neonatal Intensive Care Unit, Department of Mother and Child, IRCCS Istituto Giannina Gaslini, Genoa, Italy.

² Department of Neurosciences, Rehabilitation, Ophthalmology, Genetics and Maternal and Child Health (DiNOGMI), IRCCS Istituto Giannina Gaslini, University of Genoa, Genoa, Italy.

³ Department of Neuroradiology, IRCCS Istituto Giannina Gaslini, Genoa, Italy.

⁴ Infectious Diseases Unit, IRCCS Istituto Giannina Gaslini, Genoa, Italy.

DOI: 10.36129/jog.2022.S146

Objective. Brain Magnetic Resonance Imaging (MRI) is not widely used as a gold standard for categorizing minor abnormalities (like diffuse excessive hypersignal signal intensities, DEHSI) as a sign of late in pregnancy CMV infections highlighting inflammation of white matter. We consider DEHSI as a sign of CMV “symptomatic” infections together with germinolytic pseudocysts as we cannot exclude that these babies may develop long-term neurological sequelae. Our analysis aims to track the prevalence of these abnormalities and observe our attitude in offering drug treatment.

Materials and Methods. This was a retrospective cohort study of CMV infections referred between 2012 and 2022.

Results. We included 54 full-term infants; 34/54 (62.9%) were defined “symptomatic” and offered antiviral treatment. Severe brain abnormalities were present in 11/34 of symptom-

atic newborns (32.3%), while in the remaining 23/34 cases (67.6%) only mild abnormalities were detectable. Minor neuroradiological changes were in 24% (13/54) of newborns as the sole sign of disease moving us to offer treatment. Antiviral treatment was accepted by parents in only 3 of the aforementioned 13 cases. Overall, antiviral therapy was performed in 17/34 symptomatic cases (50%).

Conclusions. We showed a surprisingly high number of babies “named” symptomatic for CMV infections thanks to the mild US or MRI detectable brain abnormalities. We remain uncertain of the reasons for the high number of parents not accepting antiviral therapy. We believe we should offer antiviral treatment via a multicenter prospective trial with different groups of “symptomatic” babies, one based on US compared to MRI to diagnose mild abnormalities (respectively germinolytic pseudocysts *vs* DEHSI).