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A NEW APPROACH TO DIAGNOSIS OF CONGENITAL TOXOPLASMOSIS IN NEWBORNS

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Objectives Diagnosis of congenital toxoplasmosis at birth, even with the most sensitive serological test, is only possible for 70-80 % of newborns whose mothers were treated during pregnancy. They must be followed until 1 year old; furthermore treated infants could be serologically negative if they are under treatment. In order to improve and shorten diagnosis we set up a serological and immunological diagnostic protocol.

Methods From January to December 2011, 132 newborns born from mothers with certain (serocoversion) or suspected (not high avidity) Toxoplasmosis in pregnancy and treated with spiramycin, were serologically and immunologically tested . All the mother newborn paired samples were tested at birth with LIAISON® Toxo IgG / IgM CLIA , ELISA Toxo IgA (Diasorin Saluggia Italy) ISAGA Toxo IgM (Biomerieux Marcy l'Etoile France), Interferon Gamma Release Assay (IGRA-Quantiferon – ELISA Cellestis Australia) and Immunoblot Toxo IgG/ IgM. A 1mL blood sample in Litium Heparine to perform Interferon Gamma Release Assay (IGRA) with Toxoplasma antigen kindly provided by DiaSorin was also required. The follow -up was continued monthly for the first three months and then every two months until one year of age.

Results At the end of one year follow up, 10 newborn were found congenitally infected. IGRA test was performed in 74 newborns and in 9 out of the ten congenitally infected babies. Only 4 of the congenitally infected newborns were positive at birth for IgM and/or IgA antibodies , 9 were positive in WB and all of them were positive in IGRA test during the first three months of life. No congenitally infected baby resulted negative in IGRA test when serologically negative under treatment. In two cases diagnosis was made because of a positive PCR on amniotic fluid and confirmed by IGRA in the first three months.
Conclusion Following this diagnostic protocol it was possible make the diagnosis of congenital toxoplasmosis in almost all the infected newborn during the first three months of life. All the congenitally infected babies were immediately treated and clinically followed. This protocol avoids mothers anxiety and unnecessary therapy in the newborn.