IN

NEURODEVELOPMENTAL EFFECTS ON CHILDREN BORN FROM COVID-19-AFFECTED PREGNANT WOMEN

IN-CNR – URT Humanitas
IN-CNR: Michela Matteoli, Elisabetta Menna, Irene Corradini, Maria Luisa Malosio
Collaboratori esterni: Davide Pozzi, Humanitas University

Stato del progetto: è in corso il reclutamento delle pazienti

The wide spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) disease COVID-19, recently classified as pandemic, already affected over 100 countries in a matter of weeks, with Italy as one of the major sufferers [1]. Although gravest concern regards the acute respiratory failure of patients affected by the virus, attention should be also devoted to the possible long-term effects of the pandemic. In particular, the long-term neurodevelopmental effects on children born from COVID-19-affected pregnant women needs to be thoroughly investigated. Although current evidence suggests that cases of COVID-19 pneumonia in pregnant women are mostly mild and intrauterine vertical transmission of SARS-CoV-2 virus does not seem to occur [2,3], SARS-CoV-2 infection is characterized by high plasma levels of IL6, IL10, lactate dehydrogenase (LDH), and c reactive protein [4]. Association between inflammation in pregnancy and increased risk of neurodevelopmental disorders, like autism, for the offspring is well established, indeed we and others have demonstrated that immune molecules may affect directly the process of synapse formation and refinement [5-7]. More interestingly, we have clear evidences that transient maternal IL-6 elevation induces a hyper-connectivity profile in the offspring, accompanied by behavioral defects (Mirabella et al., under revision).
Based on this rationale, we will recruit and clinically characterize a cohort of pregnant women (Sars-CoV-2-infected and healthy controls). A deep immune profiling of these patients will be performed. We will next collect the blood from COVID-derived and healthy control newborns to evaluate the immune response of the babies which will be correlated with neuropsychiatric and functional outcome of the children.

References:

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