Research paper

Results of an universal screening for SARS-CoV-2 in women admitted for delivery in a geographical area with low incidence of COVID-19 infection

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Dear Editor,
SARS-CoV-2 is the coronavirus responsible for the associated respiratory infection termed COVID-19.
At present, more than 213 countries all over the world are affected of COVID-19 but numbers are rising daily. By the end of September 2020, there were in the world more than 23 millions confirmed COVID-19 cases and more than 900.000 deaths, with significant numbers occurring in Italy, Spain and USA [1].
SARS-CoV-2 has similar genomic sequences to other coronaviruses [2], such as SARS-CoV-1 (79% analogy) and MERS-CoV (50% analogy) although the viruses show differences in clinical manifestations and mortality rates. During pregnancy SARS and MERS were both associated with more severe respiratory infection. Approximately, 30% of pregnant women infected with SARS died, compared to less than 10% of the general population and 60% of pregnant women required intensive care, compared to 20% of the general population. Although limited data available for MERS, a more severe disease with a higher mortality and more frequent need for intensive care admission are reported [3]. Severe respiratory infections (like pneumonia) in pregnancy are usually associated with adverse outcomes for women and babies, these including an increase in maternal mortality, eclampsia, stillbirth, low birth weight and preterm birth. So, it is important to check the presence of the virus in pregnant women and to understand the possible influences on pregnancy and delivery as well as the possibility of transmission to the newborn. In addition, it must be considered that pregnant women have multiple interactions with the health system; for this reason, their possible role in virus spread should not be neglected.
On the other hand, current evidence suggests that COVID-19 is not associated with a significantly increased risk for pregnant women [3]. Also, no definitive evidence of vertical transmission exists at present [4]. However, these observations are limited and do not allow to draw any definitive conclusion. It is thus important to monitor pregnant women and their outcomes. With this letter we present the preliminary results of our ongoing study, aimed to evaluate SARS-CoV-2 circulation among pregnant women in Foggia (Apulia Region, South Eastern Italy). 974 women were enrolled in the study, between April the 1st and August 20th, referring to Institute of Obstetrics and Gynecology, University of Foggia for delivery, ranging from 18 to 45 years (mean age 25.3 years). All of them, regardless the presence of signs or symptoms of infection, were subjected at the admission to nasopharyngeal swab for SARS-CoV-2 RNA.
For this purpose, Viral RNA was extracted within 2 hours from sample collection using the STARMag 96 X 4 Universal Cartridge kit with the Microlab NIMBUS IVD instrument according to the manufacturer's instructions (Seegene Inc. Seoul, Korea). Amplification and detection of target genes (N, E and RdRP) were performed using the commercially available kit AllplexTM 2019-nCoV Assay (Seegene Inc. Seoul, Korea) with the CFX96TM instrument (Bio-Rad, Hercules, CA). Results interpretation was performed with the Seegene Viewer software [5].
If the result of the nasopharyngeal swab was negative, in the clinical suspicion of SARS-CoV-2 infection a second swab was performed after 24-48 hours.
16 women had symptoms compatible with COVID-19 infection (10 had fever, 1 pneumonia, 3 diarrheas, 2 cough). None of the women were positive for SARS-CoV-2 among the patients enrolled in the study, regardless the presence of symptom.
The results from our study, performed in a region of Italy with a relatively low incidence of COVID-19 infection [5], allow probably a cautious optimism regarding the relevance of COVID-19 infection in pregnancy, at least in our geographical area; however a prudential strict screening of pregnant women, possibly with a wide use of serological test in addition to biomolecular tests, will help in the future to draw more definitive conclusions about the relationships between SARS-CoV-2 and pregnancy.

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Conflict of interest statement

The authors declare no conflict of interest.

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Authors' contributions

JRF, LN and FA supervised the project and the manuscript preparation, FS and FG collected data and clinical information and contributed to manuscript preparation, MDS, GF, ML AND RDN did care about laboratory work and contributed to manuscript writing.

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