

## **SARS-CoV-2 infection discovered at the time of delivery: pregnancy and neonatal outcomes**

Libretti A, Cappello A, Casarotti C, D'Amato A T, Dallarda G, Ghio M, Nicosia A, Ricci D, Savasta F, Sonzini M, Villa D, Troia L, Remorgida V  
University Hospital Maggiore della Carità, Novara, Italy

### **Objective**

Although knowledge on SARS-CoV-2 infection/COVID-19 disease effect on pregnancies has greatly improved, there is still a lack of information on its role in the later stages of pregnancy, especially in case of a/paucisymptomatic women. Moreover, the necessity of SARS-CoV-2 screening during hospital admission is under debate. The aim of this study is to investigate whether SARS-CoV-2 infection discovered at the time of the delivery is associated with any obstetric complications or adverse neonatal outcomes.

### **Methods**

A retrospective case-control study was conducted at Department of Gynaecology and Obstetrics, University Hospital Maggiore della Carità, Novara, Piedmont, Italy from March 2020 to March 2023. All women admitted at the time of delivery were tested for SARS-CoV-2 by nasopharyngeal swabs analyzed by isothermal amplification. 168 pregnant women resulted positive for SARS-CoV-2 were included in this study: all patients were a/paucisymptomatic and did not require any further assistance regarding the COVID-19 disease. A group of 170 pregnant women, admitted to the department in the same period and tested negative for SARS-CoV-2 was selected as control group. Demographic and anamnestic characteristics of the mothers together with the pregnancy, labor, and neonatal outcomes were evaluated.

### **Results**

Patients SARS-CoV-2 positive were more likely to have pregnancy complications such as gestational diabetes (13.7% vs 5.3%,  $p=0.00093$ ) and the incidence of preterm deliveries was higher (8.3% vs 4.1%,  $p=0.00012$ ). At the time of delivery, SARS-CoV-2 positive patients required less frequently intrapartum analgesia (11.3% vs 27%,  $p=0.0003$ ), the need for augmentation (7.3% vs 16.5%,  $p=0.0109$ ), and post-partum hemorrhage rate was lower (13.7% vs 22.9%,  $p=0.0347$ ). A shorter length of first ( $82,35 \pm 8,614$  vs  $114,1 \pm 12,36$  minutes;  $p=0.0404$ ) and second stage of labor ( $20,14 \pm 2,539$  vs  $29,52 \pm 3,431$  minutes;  $p=0.0321$ ) occurred in SARS-CoV-2 positive patients' group, especially in multiparous women. There were no statistically significant differences between the two groups regarding the mode of delivery and neonatal outcomes.

### **Conclusion**

In this subset of SARS-CoV-2 positive patients shorter labor curves and a lower incidence of postpartum hemorrhage was observed. The need for less obstetric interventions, including intrapartum analgesia and oxytocin augmentation, might explain these results. The finding of an increased rate of gestational diabetes with its known susceptibility to infection and SARS-CoV-2 infection per se could be the responsible for the prematurely activated pathways leading to labor. This event however does not seem to be associated with an increase of cesarean sections' rate, other obstetric complications and adverse neonatal outcomes in this group of patients.