



Scientific letter

New evidences that discard the possible vertical transmission of SARS-CoV-2 during pregnancy*

Nuevas evidencias que descartan la posible transmisión vertical del SARS-CoV-2 durante la gestación

To the Editor:

On 31st December 2019, the Wuhan Municipal Health Commission (Hubei province, China) reported on a group of 27 cases of pneumonia of unknown aetiology, with a common exposure to a wholesale market. On 7th January 2020, a new coronavirus, SARS-CoV-2, was identified as the causal agent of the outbreak. The disease caused by this new germ has been called COVID-19 by international consensus.

Given its recent occurrence, our current knowledge about the possible implications of COVID-19 disease during pregnancy is very limited.¹ From the data available, it does not appear that pregnant women are more susceptible to infection, nor that in the event of infection, respiratory complications are more severe than in the general population.¹ On the other hand, in the few cases reported so far of COVID-19 in the peripartum, no evidence of intrauterine transmission of SARS-CoV-2 has been found.² The objective of this series of cases is to provide objective information on this matter.

Using real-time polymerase chain reaction techniques for SARS-CoV-2 nucleic acids, the possible presence of this germ in the vaginal fluid and amniotic fluid of 3 pregnant Caucasian patients affected by acute mild cases of COVID-19 was studied. All cases corresponded to pregnant women in their second trimester of pregnancy who underwent an amniocentesis for the diagnosis of chromosomal diseases and who suffered at the time of the invasive technique a confirmed active SARS-CoV-2 infection of less than 10 days of progression. The passage of SARS-CoV-2 from the infected mother to the amniotic fluid was in no case observed. Its presence in vaginal secretions could not be proved either.

The clinical course was favourable in all cases, with none of the pregnant women requiring hospitalization or drug therapy other than the administration of antipyretics and analgesics. At present, 3 weeks after amniocentesis, pregnancies are within normal conditions, with persistent PCR positive results for SARS-CoV-2 in the nasopharyngeal swab in one of the cases.

Although the presence of type 2 angiotensin converting enzyme in placental cells has been described,³ at the moment, no increased risk of pregnancy loss, preeclampsia, or premature rupture of membranes has been found in pregnant women affected by COVID-

19.⁴ Cases of premature birth^{1,4} associated with the disease have been described, but most were secondary to the need to end the pregnancy early in the mother's interest. A case of delayed intrauterine growth has also been reported, but this occurred in a pregnant woman suffering from a very severe systemic condition, which makes it difficult to discern whether the pregnancy complication was secondary to infection or to maternal deterioration itself.⁵

Before SARS-CoV-2, another 6 species of coronavirus capable of causing infection in humans had already been described. Of these, the best known in their interaction with pregnancy are SARS and MERS, which show an important structural analogy with SARS-CoV-2.¹ So far, observational studies with coronaviruses have not identified a single undisputed case of vertical transmission.^{1–5}

The best evidence for intrauterine transmission of SARS-CoV-2 would be confirmation of its presence and replication in foetal lung tissue, but this is technically unfeasible. For this reason, viral isolates made from placenta, amniotic fluid and cord blood are considered indirect but reliable indicators of congenital transmission, provided that these samples are collected during pregnancy or under conditions that limit the risk of contamination.

The main contribution of our series is to evaluate the possible vertical transmission of SARS-CoV-2 during the second trimester of pregnancy, which is still unknown.

Although the sample studied is limited and comes exclusively from mild COVID-19 conditions, at the moment there is no evidence of vertical transmission of SARS-CoV-2 in the second trimester of pregnancy. In any case, it will be time and rigorous observation of the cases that clarify the real influence that SARS-CoV-2 exerts on pregnant women and their offspring, as well as the factors that modulate the disease.

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Relationship between obesity, diabetes and ICU admission in COVID-19 patients[☆]



Relación entre obesidad, diabetes e ingreso en UCI en pacientes COVID-19

To the Editor:

Based on initial evidence about this pandemic, the older population and/or those with associated chronic pathology (high blood pressure, diabetes, obesity. . .) have been identified as being more likely to develop more severe clinical forms of the infection. Obesity as a risk factor and predictor of COVID-19 infection severity is being reported by some studies, but there is still a great lack of evidence. Even so, it has been postulated as an independent risk factor for COVID-19 since it was recognized as such during the 2009 H1N1 pandemic. Our objective is to study the relationship between obesity, the need for oxygen therapy with a reservoir (non-rebreather) mask, and the need for ICU, as well as to analyse the cardiovascular profile of patients who have required hospital admission for COVID-19 pneumonia.

A retrospective and descriptive cohort study of 49 consecutive patients admitted to the Internal Medicine hospital ward for COVID-19 infection at the Toledo Hospital Complex was conducted from 23rd March to 14th April 2020. Variables were collected on cardiovascular disease, need for a reservoir (non-rebreather) mask and admission to the ICU. According to the body mass index (BMI), overweight was defined for values from 25.0 to 29.9 kg/m² and obesity for BMI >30.0 kg/m².

57.14% were male, the mean age was 60.30 years (SD 11.88) and the mean BMI of 28.40 kg/m² (SD 3.34). 59.2% were overweight and 24.5% were obese. The prevalence of hypertension was 48.98%, that of dyslipidaemia was 38.78% and that of diabetes mellitus was 18.37%. 38.78% required a mask with a reservoir and 28.57% were admitted to the ICU. The mean BMI of the patients who required a reservoir mask was 28.74 kg/m² (SD 3,169), compared to 28.19 kg/m² (SD 3.493) in those who did not need it, resulting in a difference of 0.98, with a CI 95% between ↓2.54 and 1.43. Regarding the patients who required admission to the ICU, a mean BMI of 28.16 kg/m² (SD 3,240) was obtained, compared to 28.50 kg/m² (SD 3.432) of those who did not require one, resulting in a difference of 1.06, with a 95% CI between ↓1.80 and 2.49. No statistically significant relationship was obtained between the need for a reservoir mask and the variables BMI, hypertension, dyslipidaemia, and diabetes. Regarding the need for admission to the ICU, its association was statistically significant with diabetes mellitus (p=0.037), but not with the rest of the variables analysed (multivariate analysis).

According to the literature, higher mortality has been observed in a diabetic population with COVID-19 over 65 years of age. The largest study reported from China (72,314 cases) showed an increased incidence of mortality in diabetic patients with COVID-

19 (2.3% over 7.3%).¹ Our study also found a significant relationship between diabetes and the need for admission to the ICU. Regarding obesity, several studies carried out in China, Italy and the United States have demonstrated that this population is more likely to be infected by the virus and more likely to develop more serious pneumonia, complications and death, as well as a greater risk of developing a more virulent strain and prolonging the time of infection to the rest of the population.² Similar data have been obtained in France, demonstrating that a BMI ≥35 kg/m² is an independent factor of severity in COVID-19 infection.³ However, there are conflicting results on obesity. Our sample did not show a greater need for oxygen therapy with a reservoir mask nor a greater need for ICU admission for subjects with a higher BMI, in accordance with studies such as those by Li et al. and Qingxian et al., that do not establish a link between obesity and the severity of COVID-19 pneumonia.^{4,5} A limitation of this study is the high prevalence of overweight in the population under study, which provides us with a very homogeneous sample with little dispersion (BMI 28.40 kg/m² [SD 3.34]) (Fig. 1) and that can lead to contradictory findings.

To conclude, this study has not been able to establish obesity as a factor influencing COVID-19 infection, in terms of requiring admission to the ICU and/or the need for oxygen therapy supplementation with a reservoir (non-rebreather) mask, but an association between diabetes and admission to the ICU has been demonstrated.

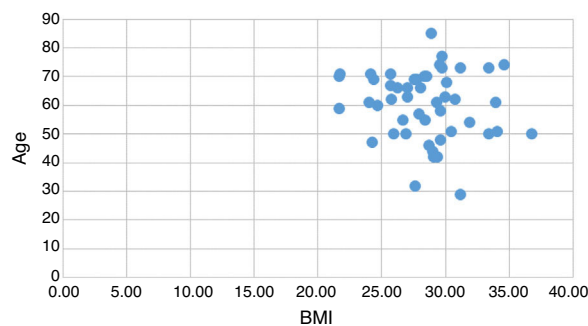


Figure 1. Dispersion table of BMI and age variables in the sample. The homogeneity of the sample is observed, with little dispersion.

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Conflict of interests

The authors declare no conflict of interest.

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