

LETTER TO THE EDITOR

Maternal Deaths with Covid19: a different outcome from mid to low resource countries?

Authors:

Melania Maria Ramos Amorim, MD, PhD (<https://orcid.org/0000-0003-1047-2514>)

Maíra Libertad Soligo Takemoto, CNM, PhD (<https://orcid.org/0000-0002-7016-2879>)

Eduardo Borges Fonseca, MD, PhD (<https://orcid.org/0000-0001-8855-8145>)

*BRAZILIAN GROUP OF COVID-19 AND PREGNANCY

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Physiological adaptations in normal pregnancy increase the susceptibility of mothers to microorganisms (bacteria and viruses) and their products. Specifically, activation of the innate limb of the immune response is thought to increase generation of reactive oxygen radicals by granulocytes and monocytes¹, and predisposes to a cytokine storm. This has been invoked to explain the increased fatality rate of pregnant women affected by severe acute respiratory syndrome (SARS), Middle East Respiratory Syndrome (MERS), Ebola, Influenza, and H1N1^{2,3}. During the H1N1 pandemic, pregnancy, childbirth and the postpartum period were considered risk factors for disease worsening and for maternal death. In Brazil, H1N1 influenza was the main cause of indirect maternal death in 2009-2010.³ However, in the case of COVID-19 and on the basis of a few case series from China, Europe and the USA, it is thought that pregnant women may not be more likely than the general population to develop severe symptoms from this disease and there were no reported maternal deaths.² A new picture may now be emerging from Brazil, Iran and Mexico raising the possibility of increased risk of maternal death from COVID-19; in Brazil there is evidence of five maternal deaths out of 1,947 total deaths from COVID-19, in Iran 2 of 3,800⁴ and in Mexico 2 of 486 (Table 1). It is therefore possible that in developing as opposed to developed countries high birthrates and limited resources for healthcare provision will uncover the increased risk for maternal death due to COVID-19 and emphasize the need for the appropriate measures to be taken for adequate prenatal and postnatal care of these women. At the present time, professional organizations have not emphasized that pregnant women exposed to the virus SARS-CoV-2 may be at an increased risk for adverse outcome; however, it is important that obstetricians and gynecologists be aware that data from countries other than the U.S. and Europe appear to suggest an increased risk to pregnant mothers. We hope that the scientific community remains open-minded and vigilant about this.

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Table 1. COVID-19-related maternal deaths worldwide until April 10, 2020

Country	Maternal deaths	Symptoms onset	Moment of death	Comorbidities	Source
Iran	2 of 3,800 reported total deaths	Pregnancy	Postpartum	Not reported	Karimi-Zarchi et al 2020
Brazil	5 of 1,947 reported total deaths	Not reported	Postpartum ⁺	Not reported	Brazilian Ministry of Health
		Not reported	Postpartum ⁺	Not reported	Brazilian Ministry of Health
		Postpartum (6 days post, elective cesarean section)	Postpartum (7 days)	Absent	Local media*
		Pregnancy (admitted 32 weeks, emergency CS 2 days latter)	Postpartum (2 days)	Absent	Local media**
		Pregnancy (admitted 32 weeks, emergency CS)	Postpartum	Absent	Local media***
Mexico	2 of 486 reported total deaths	Pregnancy (35 weeks)	Postpartum	Obesity, hypertension	Local media****
		Not reported	Not reported	Obesity, gestational diabetes	Mexico Ministry of Health

⁺ Mode of delivery: elective cesarean section. * <https://www.folhadelondrina.com.br/geral/mulher-de-28-anos-morre-por-covid-19-sete-dias-apos-parto-na-bahia-2985448e.html>. **<https://epoca.globo.com/brasil/gravida-morre-de-covid-19-em-recife-bebe-sobrevive-24353787>. ***<https://www.agazeta.com.br/brasil/no-rio-mulher-morre-de-covid-19-dez-dias-apos-dar-a-luz-prematuramente-0420>. ****López-Gatell: Desafortunadamente mueren dos embarazadas por covid-19 | CNN [Internet]. 2020 [cited 2020 Apr 10]. Available from: <https://cnnespanol.cnn.com/video/mueren-mujeres-embarazadas-covid-coronavirus-mexico-gatell-informe-sot-perspectivas-mexico>