Maternal mortality by COVID-19 in Brazil

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Abstract

SARS-CoV-2, the new coronavirus of severe acute respiratory syndrome, which causes a predominantly respiratory disease called COVID-19, quickly caused a pandemic, due to its high transmissibility, leaving a trail of deaths around the world. Initially, the pregnancy puerperal cycle was not associated with complications and mortality, only later was recognized as a risk group. As the disease progressed, the maternal mortality rate by COVID-19 increased, Brazil is responsible for an important portion. This rate may be even higher due to underreporting, difficulties in performing laboratorial tests and possible false negative results and depends on the health policies adopted by each region or country. It is important to carry out studies on maternal mortality so that the prognostic factors can be recognized and so avoid them.

Palavras-chave *Maternal mortality, COVID-19*

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Introduction

In late December 2019, World Health Organization (WHO) was notified that a new virus was circulating in Wuhan, in Hubei Province, China, which was called SARS-CoV-2, causing a predominantly respiratory disease that was later named COVID-19.[1] Unfortunately due to its high transmissibility, affecting a huge number of countries and territories, on March 11, 2020 the state of the pandemic was declared.[2]

SARS-CoV-2 is a beta-coronavirus, the seventh coronavirus to infect the human species,[3] and it is not the most lethal virus discovered, but it presents a very high morbidity and mortality potential, as for more than one million people lost their lives.[3,4] Due to several problems, among which the potential transmission, the lack of preparation to combat, mainly hospital supplies and intensive care beds, and the politicization of the disease by governments of several countries. Unfortunately, in Brazil, the government adopted a negative and insensitive narrative, minimizing the risks of the disease and returning the economic activities, being the target, even, of editorial of the prestigious journal, The Lancet, one of the biggest impact factors of the world: "So what?",[5] referring to the expression "*E dai*?", when Brazil exceeded five thousand deaths and the total number of deaths by COVID-19 in China.[6]

The COVID-19 pandemic has caused several consequences worldwide, in the three sectors of society, state, market and civil society, causing economic, social, ethical, moral, educational, religious, security and especially health crises, not only for sick individuals.[7] However, when it comes to health, death is undoubtedly the final consequence and without any return for the affected individual. For all the consequences, unrelated to health, disastrous as they may be, there will be a new chance to return to the pre-pandemic state. Indirectly these other consequences may trigger long-term increases in mortality from other causes, such as hunger, drugs, violence, and other diseases, but there will be a time for the development of public policies to combat them. Thus, we must act immediately to reduce mortality by COVID-19 and act in a controlled manner in other sectors, without compromising the resources and supplies for the pandemic.[3] In order to reduce the serious consequences of COVID-19, groups at risk for complications and death were identified, such as the elderly, those with chronic diseases, obesity, pneumopathy, health professionals and afterwards, pregnant women. At the beginning of the pandemic, studies did not define pregnant women as a risk group for complications and death, probably due to the low frequency of pregnant women in China. The first country to be affected by the disease, as well as in Asian countries where the epidemic spread, were: Japan, South Korea and Singapore. Even when the Europeanization of the disease occurred, the countries initially most affected were Spain and Italy and are the countries with low birth rates and few pregnant women. This explains why the initial series published included few pregnant women and even systematic reviews published in the first months of the pandemic hardly had enough numbers to identify deaths and serious complications of the disease.[8]

On the other hand, some researchers, our group included, have always been concerned that there was an increased risk for pregnant women, which can be justified by the anatomical and physiological alterations of the pregnancy in various systems, such as, cardiovascular, respiratory, immunological and coagulation. These changes make the pregnant woman more susceptible to viral pneumonia, as it has occurred a little over 10 years ago with the H1N1 virus and more recently with SARS-CoV and MERS-CoV.[9]

The Brazilian Group of Studies on COVID-19 and Pregnancy has been publishing since April several articles in the national literature alerting the risk of maternal death by COVID-19.[10-15] In a widely disseminated study analyzing data from the spreadsheet of the *Sistema de Informações de Vigilância Epidemiológica da Gripe* (SIVEP Gripe) (Influenza Epidemiological Surveillance Information System), available from the Ministry of Health found that 978 pregnant women and puerperal were diagnosed with Severe Acute Respiratory Syndrome (SARS) by COVID-19 and of these 124 died (lethality rate of 12.7%). Although an association of death with co-morbidities such as obesity, diabetes and cardiovascular diseases had been found, what attracted more attention in this study were the serious failures of care: 15% of the women had not received any type of ventilatory assistance, 28% did not have access to an intensive care unit (ICU) bed and 36% were not intubated or received mechanical ventilation.[12]

Another study of this same group, at the same time, analyzed all deaths published by COVID-19 in the world and found 160 deaths recorded in the international literature, so that of every 10 deaths by COVID-19 in the world, eight occurred in Brazil.[15] Also, it is worth mentioning that this article evaluated the disproportionate impact of structural racism

on maternal deaths by COVID-19. This study found that black women were hospitalized in worse conditions, such as higher prevalence of dyspnea and lower oxygen saturation, in addition to a higher rate of intensive care unit (ICU) admission and assisted mechanical ventilation, and a risk of death almost twice as high in black women when compared to white women.[13] This enormous social, racial and gender inequality was also described in the United States of America (USA), mainly related to the access to health services.[16]

It is interesting to compare the results of Brazilian studies with international studies, because finally, after the pandemic spread and reached more pregnant women around the world, American studies such as the Centers for Diseases Control and Prevention (CDC),[17] the Swedish study[18] and studies in Belgium and France[19] began to demonstrate increased risk of complications and ICU admission, and greater need for mechanical ventilation for pregnant women, but not maternal death. Maternal deaths seem, in fact, more frequent in low and middle income countries and would result from serious health system failures allied to the social determinants of the health-disease process. This has also been seen in other Latin American countries,[10-15] especially Mexico, which maintains an efficient reporting system.[20]

The studies of a group also show a higher frequency of death in the puerperal period[11,12] and suggest that the higher mortality in pregnant women in Brazil is due to chronic problems of women's health care in the country, such as insufficient resources, low prenatal quality, available beds less than the real necessity, difficulty to access the services, racial disparities and obstetric violence. The policy of the Ministry of Health has also been criticized, which so far has not implemented universal testing for admission to maternity hospitals using molecular tests (RT-PCR).[10-15]

It is also important to highlight the speed of transmission in the world and the consequent increase in the maternal death rate in Brazil. By September 27, 2020 there were 32,925.668 million people infected and 995,352 deaths worldwide by COVID-19, nine months after the first reported case. On the same day, in Brazil, there were 4,718.488 infected and 141,441 deaths.[4,6] Using the same database already mentioned by SIVEP Influenza, we found 684,423 patients diagnosed with SARS between December 29, 2019 and August 31, 2020, being 681,215 cases identified from the first case of COVID-19 registered in Brazil on February 26, 2020. We observed that the majority of the patients reported severe acute respiratory syndrome (SARS) when the pandemic occurred, 3,208 (0.5%) approximately two months before the pandemic hit Brazil and 99.5% in 6 months after its onset.

During the same period, 9,609 cases of SARS were reported in pregnant women and those who had recently given birth, of which 4,230 (44.0%) were considered positive for COVID-19. Of these, 553 pregnant women and puerperal died, and 354 (64.0%) lives were lost by COVID-19. When comparing the frequency of SARS patients without and with COVID-19, a mortality rate of COVID-19 (8.4%) is observed and that it is higher than SARS, from other causes or not determined (3.7%). This rate may be even higher due to factors such as underreporting, difficulties in performing laboratorial tests and possible false negative results.

In view of this, the concern with care of pregnant women and puerperal is essential, mainly because this population presents difficulties to access the quality of prenatal care, which worsened even more during this period of pandemic. Not only prenatal, but all women's health care has been affected by the pandemic, either by the fear of some pregnant women seeking health care due to uncertainties and the fear of leaving home, increasing the frequency of signs and symptoms of anxiety and depression, or by severe and very frequent failures of women's care in the cities, prioritizing care to COVID-19 treatment.[21] In several places in the country, prenatal consultations have been suspended and with the whole system reorganized around COVID-19, it is predictable that the already existing care problems will worsen and more cases of maternal death from non-COVID-19 causes may occur, which unfortunately we will only be able to prove in the vital statistics published in the coming years. Maternal death committees are fragile, and many are not functioning during the pandemic. In an article published in The Lancet, Roberton *et al*.[22] already estimated in projection models a predictable increase in maternal mortality in low and middle income countries due to both lack of investment and the disorganization of services and reorganization around COVID-19.

Authors' contribution

Conception: Souza ASR; Obtaining articles: Souza ASR, Amorim MMR; Database: Souza ASR; Evaluation and interpretation of the articles and manuscript writing: Souza ASR, Amorim MMR; Review and approval of the final version of the manuscript: Souza ASR, Amorim MMR.

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