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## Intensive care unit admissions for pregnant and nonpregnant women with coronavirus disease 2019

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## Intensive care unit admissions for pregnant and nonpregnant women with coronavirus disease 2019



**OBJECTIVE:** Early reports indicate that pregnant women are not at an increased risk for coronavirus disease 2019 (COVID-19) or for a worse disease course if infection occurs.<sup>1-3</sup> This study aimed to review our experiences with intensive care unit (ICU) admissions of women of reproductive age with COVID-19, and to determine whether pregnant women are more likely to be admitted to the ICU than nonpregnant women.

**STUDY DESIGN:** We evaluated data from a large hospital system in New York State between March 2, 2020, and April 9, 2020. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) testing was performed on acutely symptomatic patients presenting with characteristic respiratory signs and symptoms.<sup>4</sup> Nasopharyngeal specimens were obtained, and microbiologic diagnosis was made on the basis of a positive result on SARS-CoV-2 real-time reverse transcription polymerase chain reaction (RT-PCR) assay. We included only patients of reproductive age (15–49 years) who were admitted to 1 of 7 hospitals in our system and who received a diagnosis of COVID-19 by RT-PCR on

admission, during the hospital stay, or during the postpartum period. Data analyzed in this study included age (5 age groups between 15 and 49 years), pregnancy status, and admission to an ICU. We excluded patients with incomplete data. The incidence of ICU admission was compared between pregnant and nonpregnant women with COVID-19 in each age group. Patients were admitted to the ICU at the discretion of the consulted critical care attending physician. Other clinical characteristics, including medical comorbidities, were not evaluated and not necessarily the same. The institutional review board determined that this study did not meet the definition of human subjects research and was exempt from formal review.

**RESULTS:** Among all patients between the ages of 15–49 years admitted at 7 hospitals within our health system between March 4, 2020, and April 9, 2020, there were 1168 symptomatic patients who received a diagnosis of COVID-19. Of these, 754 (64.6%) were male, 332 (28.4%) were nonpregnant females, and 82 (7.0%) were pregnant females. During this time period, 2971 pregnant patients were admitted, primarily

**TABLE**

**ICU admissions by age group in pregnant and nonpregnant women with COVID-19**

Age group, y	Pregnant women (n = 82)	Nonpregnant women (n = 332)	P value
<25	1/11 (9.1)	3/7 (42.9)	.09
25–29	0/17 (0)	5/40 (12.5)	.16
30–34	2/33 (6.1)	5/44 (11.4)	.46
35–39	3/15 (20.0)	9/55 (16.4)	.73
40–49	2/6 (33.3)	28/190 (14.7)	.28
Total	8/82 (9.8)	50/332 (15.1)	.22

Values are presented as n/N (%).

COVID-19, coronavirus disease 2019; ICU, intensive care unit.

Blitz. ICU admissions for pregnant and nonpregnant women with COVID-19. *Am J Obstet Gynecol* 2020.

for delivery. In some cases, symptomatic patients with a diagnosis of COVID-19 (2.8%) were admitted for obstetrical indications and only had mild respiratory disease. In all, 50 nonpregnant females (15.1%, 50 of 332) and 8 pregnant females (9.8%, 8 of 82) were admitted to the ICU for worsening respiratory status, with no statistically significant difference ( $P=.22$ ). ICU admissions by age group are presented in the [Table](#).

**CONCLUSION:** Among hospitalized women who received a diagnosis of COVID-19, pregnant women were not at an increased risk for ICU admission compared with nonpregnant women. This finding is consistent with the overall lower hospital admission rate of pregnant women with COVID-19 that we previously reported.<sup>5</sup> Pregnant women are considered to be at a greater risk of severe morbidity and mortality from other respiratory infections such as influenza.<sup>6</sup> Admission to the ICU signifies a more severe course of disease. Therefore, our findings are reassuring and indicate that pregnant women with COVID-19 may not experience more severe disease progression than nonpregnant women. ■

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The authors report no conflict of interest.

This communication has been published in the middle of the COVID-19 pandemic and is available via expedited publication to assist patients and healthcare providers.

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## Universal severe acute respiratory syndrome coronavirus 2 testing of pregnant women admitted for delivery in 2 Italian regions



**BACKGROUND:** Since the early days of the coronavirus disease 2019 (COVID-19) pandemic, substantial undocumented infection has been thought to contribute to the dissemination of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2),<sup>1</sup> with estimated percentages of undocumented infections of 72%–90%.<sup>1–3</sup>

Italy has been the first western country to be massively hit by the pandemic. On March 11, the Italian government ordered the country lockdown, which is still in place as of this writing. This led to a flattening and eventually a reduction of the pandemic curve.

Starting by the end of March, several hospitals have begun universal SARS-CoV-2 screening in all admitted patients. Women admitted for delivery represent a peculiar population and a unique source of information, because

they come to hospitals independent of illness and of their own decision. They can therefore provide useful estimates of the circulation of the virus in the general population, despite a possible different social behavior, especially near delivery.

**OBJECTIVE:** This study aimed to estimate the “true” SARS-CoV-2 infection rate among women admitted for delivery and estimate the burden of undocumented infections in this population.

**METHODS:** We studied 2 neighboring Italian regions, North of Tuscany and Liguria, both considered at medium risk of infection compared with the Northern regions. All 6 hospitals of Azienda USL “Toscana Nord Ovest” (ATNO, Tuscany) and