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Pregnant vs nonpregnant severe acute respiratory syndrome coronavirus 2 and coronavirus disease 2019 hospital admissions: the first 4 weeks in New York

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Pregnant vs nonpregnant severe acute respiratory syndrome coronavirus 2 and coronavirus disease 2019 hospital admissions: the first 4 weeks in New York



OBJECTIVE: On March 2, 2020, the New York Times reported the first confirmed case of an infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the state of New York to be a woman from Manhattan.¹ In the United States, as of April 2, 2020, New York has become the state with the most SARS-CoV-2 infections and deaths. By the end of April, 2020, there have been nearly 300,000 SARS-CoV-2 infections and over 17,000 deaths in the state of New York. This study aimed to investigate the number of pregnant and nonpregnant SARS-CoV-2 and coronavirus disease 2019 (COVID-19) cases during hospital admissions in the state of New York.

STUDY DESIGN: This study focused on pregnant and nonpregnant SARS-CoV-2 and COVID-19 cases during hospital admissions. We used data that were collected at a large hospital group (14 hospitals) in the state of New York between March 2, 2020, and March 29, 2020. Routine SARS-CoV-2 testing was not performed. Data included week of admission, pregnancy status of the patient, and SARS-CoV-2 status (positive or negative). Subjects were diagnosed with SARS-CoV-2 on admission, during hospital stay, and after delivery. The institutional review board (IRB) determined that this study did not meet the definition of human subject research and that no IRB review was required.

RESULTS: The [Table](#) and [Figure](#) show the SARS-CoV-2—positive cases by pregnancy status and weeks. A total of 21,980 admissions at 14 hospitals during the 4-week period was noted. Among those admissions, 3064 were pregnant or postpartum patients, and 18,916 were nonpregnant patients.

The SARS-CoV-2 infection status for pregnant and postpartum patients increased from 0.14% of all hospital admissions in week 1 to 5.65% of all hospital admissions in week 4 (relative risk [RR], 14.81; 95% confidence interval [CI], 2.07–107.38). The SARS-CoV-2 status for nonpregnant patients increased from 1.21% of all hospital admissions in week 1 to 56.79% of all hospital admissions in week 4 (RR, 46.99; 95% CI, 36.72–60.15).

CONCLUSION: In our study, after the first New York diagnosis of a SARS-CoV-2 infection, we reported a sudden influx of pregnant and nonpregnant patients with SARS-CoV-2 in a large hospital group (14 hospitals) during the first 4 weeks in the state of New York. There have been multiple publications describing the first approaches and management of pregnant women with COVID-19 and SARS-CoV-2 infection.^{2–5} In general, there was a significant increase in COVID-19 infection cases in all hospital admissions, from 1.08% in week 1 to 49.79% in week 4. SARS-CoV-2—diagnosed cases were significantly higher among nonpregnant patients (RR, 46.99) than among pregnant patients (RR, 14.81). Furthermore, pregnant women with SARS-CoV-2 and COVID-19 had a significantly lower admission percentage than nonpregnant patients with similar infection status. The lower rate of COVID-19 infection among pregnant patients has previously been reported and is likely because of several factors. First and foremost, testing for the SARS-CoV-2 virus causing COVID-19 infection is still not universal and is reserved for symptomatic patients. Because pregnant women are younger and are less likely to contract the

TABLE
COVID-19—positive cases by pregnancy status and week

Date	Not pregnant	Pregnant	Total
March 2–8	1.21% (63/5213)	0.14% (1/737)	1.08% (64/5950)
March 9–15	8.17% (409/5009)	0.83% (7/845)	7.11% (416/5854)
March 16–22	31.46% (1295/4116)	1.72% (13/756)	26.80% (1306/4872)
March 23–29	56.79% (2600/4578)	5.65% (41/726)	49.79% (2641/5304)
Total	23.10% (4367/18,916)	2.02% (62/3064)	20.14% (4427/21,980)

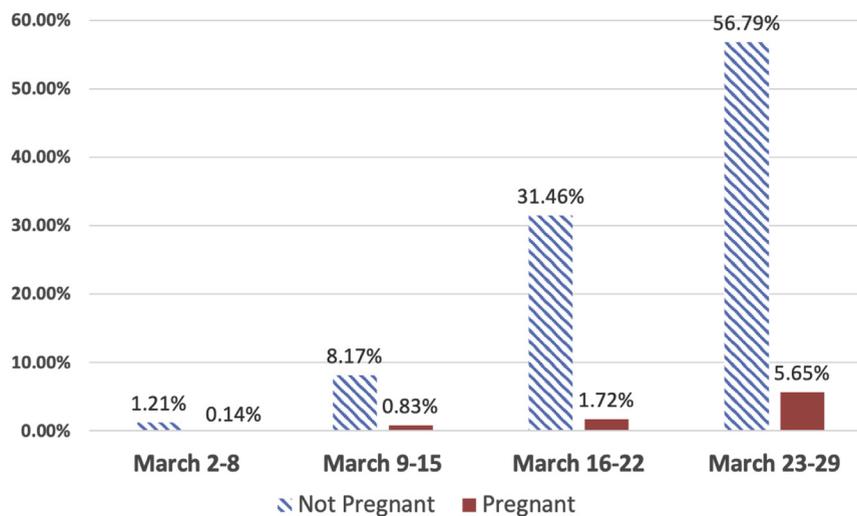
Values are presented as n (%) (n/N).

COVID-19, coronavirus disease 2019.

Tekbali. Pregnant vs nonpregnant SARS-CoV-2 and COVID-19 hospital admissions in New York. *Am J Obstet Gynecol* 2020.

FIGURE

Percentage of COVID-19—positive cases during hospital admissions by status and weeks in March



COVID-19, coronavirus disease 2019.

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infection and show typical symptoms, they are less likely to get tested. In addition, hospital admissions for nonpregnant patients were for those with symptoms, whereas admissions for pregnant patients were usually for labor and delivery and not because of COVID-19 symptoms. Considering the rapid increase in SARS-CoV-2 and COVID-19 cases and the significant difference in hospital admissions between SARS-CoV-2—positive asymptomatic nonpregnant patients and SARS-CoV-2—negative asymptomatic pregnant women, hospitals may want to consider the proposal of Britain’s most senior midwife that maternity services be “ringfenced” during this crisis to ensure women’s health services continue to provide safe care and pregnant and postpartum women and their newborns continue to receive safe care without compromise. The term “ringfencing” originates from the term ring-fence, a structure built to keep farm animals in and predators out. In finance, a ring-fence is a virtual barrier that segregates a portion of an individual’s or company’s financial assets from the rest. Human and material maternity resources should be ringfenced from redeployment, to avoid impairing the capacity of labor and delivery units and to ensure that pregnant and postpartum patients and their newborns continue to receive the safest possible care. ■

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