Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Thus, the expected denominator would be something in the order of 8104 deliveries in this pool during the study period. This denominator would yield a rate of severe COVID-19 of approximately 0.07% among pregnant patients, not 15%.

In these days of rapid learning and a near tsunami of COVID-19 updates to our clinical and epidemiologic knowledge base, I believe it is important that all authors strive to be precise and factual in these important communications. Lokken et al[1] detailed the specifics through their abstract and manuscript in both their Methods and Results sections. However, they have done a disservice to busy clinicians and readers of *American Journal of Obstetrics and Gynecology* when they summarized incorrectly in their conclusion that "Nearly 15% of pregnant patients developed severe COVID-19." We must all strive to mitigate, not exacerbate, the many unintended consequences of this pandemic. ■

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REPLY

Check for updates

We thank Dr Norman for the call for precision in reporting results, particularly during the coronavirus disease 2019 (COVID-19) pandemic[1]; we could not agree more. Pregnant women and clinicians need such data to make informed and evidence-based decisions during this stressful time. The objective of our case series of 46 pregnant patients with confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections was to report the clinical outcomes of COVID-19 among these patients.[2] Our aim was not to provide population-health estimates on the rate of infection or severe disease among all pregnant patients during this time, as estimated by Dr Norman. Although a rigorous assessment of the population-based risk in pregnancy is important, a key estimate for obstetricians right now is the likelihood that a patient infected with SARS-CoV-2 will experience severe disease or adverse pregnancy outcomes. We believe that our report stating that 15% of pregnant patients with COVID-19 had severe disease is accurate (6 of 46 patients with COVID-19; 6 of 43 symptomatic patients). As obstetricians, we aimed to understand the effect of COVID-19 on our own patients to counsel them to the best of our ability.

Our case series reported all known cases from 6 large hospital systems contributing 40% of the annual deliveries in Washington State. This was a key strength of our manuscript because we captured confirmed infections in pregnancy across all trimesters, independent of severity. Our abstract and manuscript clearly reported outcomes on 46 pregnant women with SARS-CoV-2 infections with study results targeted to these patients. We did not attempt to make larger population-wide conclusions across Washington State. Although the rate of SARS-CoV-2 infections and severe COVID-19 disease among all pregnant women in Washington State is low, our case series indicates that we cannot discount the potential for severe disease among pregnant individuals who acquire SARS-CoV-2 infections. In particular, we highlight factors that may increase the risk of severe COVID-19 in pregnancy, such as obesity and asthma, which may affect counseling or medical management after SARS-CoV-2 diagnosis; these factors deserve further study.

There are many ways to leverage data to estimate the effects of a disease on individuals and on the population, each of which is appropriate for different purposes and audiences. For our manuscript, the goal was to provide obstetrical care providers with key clinical insights into disease outcomes among pregnancies affected by SARS-CoV-2 specifically to urgently inform clinical care. ■

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Diagnosis of coronavirus disease 2019 pneumonia in pregnant women: can we rely on lung ultrasound?

Check for updates

TO THE EDITORS: In the case report by Inchingolo et al,[1] the authors recommend lung ultrasound (US) examination as a diagnostic imaging tool for pregnant women with suspected coronavirus disease 2019 (COVID-19). The typical US findings of COVID-19 pneumonia, described by authors, are as follows: (1) a patchy distribution of interstitial artifactual signs (single or confluent vertical artifacts, small white lung regions), (2) an extended distribution of the previously mentioned interstitial artifactual signs to multiple areas of the lung surface, and (3) small subpleural consolidation (not described in this case report[1]). In this regard, we feel the need to clarify some points and raise some doubts.

The evaluation of the extent of pulmonary involvement is limited by incomplete accessibility of the lung with US: less than 70% of the pleural surface of lung is visible. The vertical artifacts (B-lines) are an "error of image" generated when sound waves interact with gas microbubbles, which in turn causes the fluid film trapped between them to resonate. These artifacts have been described in fluid-filled dilated bowel loops, in the normal lung, and even in the residual cavity of a post-pneumonectomy and are totally absent in intraoperative lung US scan of patients with interstitial lung diseases on account of their nature of imaging errors being related to the difference in acoustic impedance of superficial or deeper structures.[2] An increased number of B-lines, single or confluent, indicate the presence of an underlying unspecific pleuropulmonary disease. Indeed, this sonographic pattern is not pathognomonic of COVID-19, but it is shared by most other lung diseases (acute respiratory distress syndrome, heart failure, nephrotic syndrome, pneumonia, minimal pleural effusion, hydropneumothorax, fibrosis, emphysema, exacerbations of chronic obstructive pulmonary disease, and lymphangitis).[2,3]

The authors did not compare the US findings in their documented patient with COVID-19 with the gold standard (computed tomography scan). Therefore, the number and type of lesions present in the patient's lung are not known. In this case report, focal and sporadic ground-glass opacity (GGO), interlobular and intralobular septal thickening, patchy or extensive peripheral GGO, and peripheral dense pulmonary consolidation not adherent to the pleural surface have not been assessed: this is not the best diagnostic practice for appropriate therapy.

With the exception of US-guided procedures and interventions, the use of US in COVID-19 pneumonia is very restricted and sometimes can be confusing because of the nonspecific findings.[4] The use of US in the diagnosis of COVID-19 pneumonia must be firmly discouraged to avoid needless exposure of medical staff and because it may be misleading. ■

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