Obstetric anesthesia has seen many advances in the past 20 years. Identifying publications that have substantially influenced not only the practice of obstetric anesthesia but also that of medicine, have relied upon analyses of bibliometric data or cited references, or a nomination process by select experts or panelists. This study sought to use the Delphi method to identify the most influential publications in the field of obstetric anesthesia.

This was a prospective, sequential survey study involving the 20 expert obstetric anesthesiologists, who had delivered the Gerard W. Ostheimer Lecture at the annual meeting of the Society for Obstetric Anesthesia and Perimatology between 1998 and 2017. The Ostheimer lecture is a review of the publications of note from the preceding year. To achieve consensus among the experts, the Delphi method was used and involved sending consecutive rounds of questionnaires to the experts, with each iteration building upon the responses of the previous questionnaire. Surveys were sent between July 2018 and June 2019, and three rounds were conducted. The first round asked each expert to identify the top 3 highly influential publications cited in their lecture and 3 more publications from 1998 to 2017. The second round asked the experts to select 10 publications from the list produced from round 1. For the third round, the selections from round 2 were grouped by the number of votes and the list produced from round 1. For the third round, the selections from round 2 were grouped by the number of votes and the experts were asked to identify the most influential publications from this list.

All 20 of the Ostheimer lecturers between 1998 and 2017 participated in the study. The first round yielded 82 publications, the second round generated 57 publications with at least 1 vote, and the third round identified 22 publications with 9 or more votes. Response rates were 100%, 95%, and 100%, respectively.

The 22 highly influential publications ultimately identified by the expert obstetric anesthesiologists were notable because they changed traditional views, prompted meaningful practice change or additional research on an important topic in the field and held their significance over time. The publications identified can be used as resources in education, clinical practice and research.

Obstetric Anesthesia During the Coronavirus Disease 2019 Pandemic

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When caring for obstetric patients infected with coronavirus disease 2019 (COVID-19), there are a number of factors to consider to safeguard the pregnant or postpartum woman and health care workers. The goal of this review was to provide recommendations based on evidence or expert opinion for anesthesiologists caring for pregnant women in the age of COVID-19.

COVID-19 may be overlooked as a possible diagnosis, because the signs and symptoms of COVID-19 may be similar to that of pregnancy and labor. Universal screening can be helpful to not only protect health care workers, but also to inform the steps needed to prevent vertical transmission. The pregnant woman’s infection status and any updates to that status should be disclosed to her health care providers.

Labor and delivery units should create and put in place protocols to support the infected or potentially infected obstetric patient. This includes designating an operating room within the unit that is equipped with the supplies and drugs necessary to perform both neuraxial analgesia and cesarean delivery. This helps to minimize potential contamination of equipment and workstations and the need to transport patients.

Collaboration among a multidisciplinary team of providers should include discussions on the administration of magnesium for neuroprotection and indomethacin for tocolysis, as these medications may worsen COVID-19 infection. Efforts should be made to reduce the need for general anesthesia in pregnant women with known or potential infection because of the risk of aerosolization during intubation and extubation. Monitoring of these patients should include continuous pulse oximetry with a goal of ≥95% oxygen saturation and measurements for fluid restriction. Arterial blood gas analysis for women needing supplemental oxygen should be frequently reassessed. Early labor epidural is recommended to avoid exacerbating respiratory symptoms associated with labor pain and to minimize the risk of cesarean delivery requiring general anesthesia. Ventilator management for acute respiratory distress syndrome in infected patients includes low tidal volumes and plateau pressure, and the combined use of reduced FiO2 to maintain a PaO2 of 65 to 90 mm Hg. For pregnant women, the recommended PaCO2 is 28 to 32 mm Hg with ventilation to supplement off-loading of oxygen to the fetus.

With concurrent COVID-19 infection, neuraxial analgesia is recommended because the procedure does not generate aerosol. Before placement of neuraxial analgesia, a platelet count is suggested. Platelet counts of 70,000 x 10^9/L or above are considered safe, and lower platelet counts may be considered to reduce the risk of respiratory compromise with general anesthesia. The risk of encephalitis or meningitis due to insertion of a needle into the epidural or subarachnoid space is very rare. The use of nitrous oxide (Entonox) for labor analgesia and high-flow oxygen for fetal distress are not recommended due to the risk of aerosolization. Little evidence supports the vertical transmission of COVID-19 infection; however, a case of possible in utero infection has been reported.

Postpartum care for women with COVID-19 infection includes the usual management of postpartum issues, fluid management and respiratory decompensation surveillance; subspecialty care may also be involved. The infected mother and her infant should be appropriately isolated. There may be a risk for bronchospasm in infected patients with postpartum hemorrhage. Because of this risk, oxytocin and methylergonovine may be considered as second-line treatment. Nonsteroidal anti-inflammatory drugs may continue to be used in asymptomatic or mildly symptomatic women to manage postpartum pain.