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Obstetric critical care: Performance of the Obstetric Early Warning Score in critically ill patients

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Introduction

Every day, around 830 women die from preventable causes associated to pregnancy and childbirth around the world. Based on the identification of specified aberrant values in vital signs or laboratory markers, obstetric early warning scores have been proposed as a potential tool to reduce maternal morbidity and mortality by generating a prompt and effective medical response. Several early warning ratings for obstetrical patients have been created, although the vast majority are based on clinical consensus rather than statistical assessments of clinical outcome markers (ie, maternal deaths). The first statistically verified early warning scoring system for pregnant women was published in 2013 by the Intensive Care National Audit and Research Center Case Mix Program. The goal of this study was to see how well the Intensive Care National Audit and Research Center Obstetric Early Warning Score predicted death among pregnant women who needed to be admitted to the intensive care unit. Pregnant women admitted to a tertiary referral center's intensive care unit with direct and indirect obstetric-related disorders from January 2006 to December 2011 in Colombia, a poor country, were included in this retrospective cohort study. Data obtained during the first 24 hours of intensive care unit admission was used to calculate the Obstetric Early Warning Score. The Obstetric Early Warning Score is based on systolic and diastolic blood pressure, respiration rate, heart rate, fraction of inspired oxygen (FiO2) necessary to maintain an oxygen saturation of 96 percent, temperature, and degree of awareness. The area under the receiver operator characteristic curve was used to assess the performance of the Obstetric Early Warning Score. The following outcomes were chosen: maternal death, the need for artificial ventilation, and/or the necessity for surgery. There were 50,897 births documented during the study period. There were 724 obstetric admissions to critical care, yielding a rate of 14.22 per 1000 deliveries in the intensive care unit. The study covered a total of 702 women, with 29 (4.1%) maternal deaths and a mortality rate of 56.98 deaths per 100,000 live births. Direct obstetric-related problems were the most common reason for admission (n = 534; 76.1 percent). Nonsurvivors had a considerably higher Obstetric Early Warning Score than survivors. Women who had normal Obstetric Early Warning Score values had a 0% death rate, while those who had high Obstetric Early Warning Score values (>6) had a 6.3 percent mortality rate. In the discriminating of maternal death, the area under the receiver operator characteristic curve of the Obstetric Early Warning Score was 0.84. (95 percent confidence interval, 0.75-0.92). When the major reason for admission was directly connected to pregnancy or the postpartum state, the Obstetric Early Warning Score had a higher overall predictive value. The score's area under the receiver operator characteristic curve in conditions directly related to pregnancy and postpartum was 0.87 (95 percent confidence interval, 0.79-0.95), while the area under the receiver operator characteristic curve in conditions indirectly related to pregnancy and postpartum was 0.77 (95 percent confidence interval, 0.79-0.95). The Obstetric Early Warning Score obtained upon admission to the intensive care unit can predict survival in conditions directly connected to pregnancy and postpartum, while there are potential for improvement. The use of early warning scores in obstetrics could be a very beneficial tool for identifying women who are at a higher risk of dying. Obstetric problems account for the vast majority of cases admitted to the critical care unit. In all regions of the world, they account for about half to eighty percent of admissions during pregnancy and puerperium. Pre-eclampsia and its consequences, haemorrhage, and sepsis account for more than 80% of these admissions. Non-obstetric problems in pregnancy vary a lot depending on where you live. Tropical and other infectious diseases, such as malaria, leptospirosis, dengue fever, viral hepatitis, influenza, tuberculosis, rheumatic valvular heart diseases, cerebral sinus venous thrombosis, and endocrine disorders, complicate critical illness in pregnancy more frequently in South-East Asian countries, including India (diabetic keto-acidosis). Pneumonia, bronchial asthma, trauma, malignancies, drug addiction, severe urinary infections, preexisting autoimmune disorders, chronic pulmonary illness, endocrine disorders, and pulmonary thromboembolism are all common causes of death in affluent countries. Furthermore, as medicine improves in both developing and developed countries, intensive care units (ICUs) are increasingly confronted with a unique minority of pregnant women who have conditions such as surgically corrected complex congenital heart disease and organ transplant. Pregnant women with these disorders have a higher risk of morbidity and require more medical attention. Pregnant women are susceptible to critical illness due to common circumstances that worsen or make them vulnerable to critical illness. Organ malfunction or failure in a critically unwell parturient differs depending on whether the cause is obstetric or non-obstetric. The lung is

the most often implicated organ, according to multiple studies and our institute's experience, followed by the haematological, cardiovascular, renal, and central neurological systems, as well as the multiorgan dysfunction syndrome. depicts the trend of organ dysfunction in sick parturients admitted to our unit. The goal of organ transplantation should be to "provide the best to both lives" (mother and the foetus). Organ support for critically unwell parturients should not just focus on the mother's aims, but also on the well-being of the foetus. There are subtle variations that the physician should be aware of, but the main line is that what is good for the mother is also good for the unborn.