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High pre-delivery maternal blood pressure associated with low Apgar scores

*Research suggests high blood pressure in mother
may negatively impact health of newborn baby*

SAN FRANCISCO – Women who experience high blood pressure prior to labor may be more likely to deliver babies with a lower Apgar score, a measure of a newborn’s physical health, suggests new research presented at the [ANESTHESIOLOGY® 2018 annual meeting](#).

“A multitude of studies have examined maternal blood pressure disorders, but typically medical professionals are more concerned with low blood pressure in the mother during cesarean delivery, a common side effect immediately following spinal anesthesia,” said Rovnat Babazade, M.D., assistant professor of anesthesiology at the University of Texas Medical Branch, Galveston. “We know the complications low blood pressure can potentially cause in mothers and their babies, but there has been no previously published data to reveal if high blood pressure experienced prior to cesarean delivery is critical to the baby’s health after birth. Our research aimed to specifically study the effect of pre-delivery maternal blood pressure on Apgar scores.”

High blood pressure, the most common medical disorder occurring during pregnancy, accounts for 16 percent of maternal deaths and approximately 25 percent of all hospital admissions during pregnancy. Pregnancy complications due to high blood pressure include preeclampsia, eclampsia and damage to major circulatory organs (i.e., the heart, kidneys, brain and eyes), which can lead to complications or death in the mother and unborn baby.

The Apgar score is a scoring system used to assess the physical health of newborns one minute and five minutes after they’re born. It is obtained by adding points (0, 1 or 2) for heart rate, respiratory effort, muscle tone, response to stimulation and skin coloration. A score of 10 represents the best possible condition.

In the study, data was collected from 5,499 women who had elective cesarean section under spinal anesthesia between 2013 to 2016. Researchers analyzed all recorded blood pressure measurements from admission to the hospital up to the cesarean delivery of the baby to determine if there was an association between average blood pressure and Apgar scores. Women whose recorded blood pressure was high could have resulted from preeclampsia, been pregnancy-induced, or the woman could have already been hypertensive prior to pregnancy.

Researchers found every one-point increase in average pre-delivery blood pressure experienced by the mother resulted in a 0.0085 reduction in the Apgar score taken during the first minute after delivery. Additionally, every one-point increase in average pre-delivery blood pressure was associated with a 0.0034 reduction the Apgar score taken five minutes post-delivery.

“Overall, our research found higher pre-delivery blood pressure is associated with lower Apgar scores,” said Amir Jafari, D.O., anesthesiology resident at the University of Texas Medical Branch, Galveston. “We need to conduct further nationwide research, but this finding has the potential to change protocol. Currently, there are very strict minimum blood pressure guidelines detailing what to do if the mother’s blood pressure falls too low. Ultimately, our research could lead to the maximum blood pressure guidelines being lowered to protect the health of the baby. Additionally, patients should more closely monitor their blood pressure during pregnancy and aim to keep it down with diet, exercise and prescription medication, if necessary.”

THE AMERICAN SOCIETY OF ANESTHESIOLOGISTS

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