Mini Review
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The controversy over the length of second stage of labor: prolonged second stage of labor has yet to be proven safe

Abstract

The rate of cesarean deliveries has increased over recent decades and this has raised significant concerns over the increased risks in subsequent pregnancies. A concerted effort has been underway by many researchers, the NIH and many clinicians to reduce the rate of primary cesarean sections in hopes that this will reduce the rate of total cesarean deliveries. A recent RCT presented a significant reduction (>50%) in the rate of primary cesarean sections by allowing laboring women to push for longer periods. Although such findings appear impressive, there are serious questions raised that make this study's conclusions invalid and potentially dangerous.

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According to CDC national statistics,[1] total cesarean section rates (primary and repeat) have increased by almost 60% and peaked at 32.8% in 2010 while the rate of primary cesarean section was 21.5% in 2012. There has been a concerted effort in recent years to reduce the rate of primary cesarean section; health professionals believe that reducing the primary cesarean section rate might reduce cesarean section rates overall because one cesarean section increases the likelihood of subsequent cesarean sections.[2] In a recent study[3] Dr. Gimovsky reported findings of a clinical randomized study on the effects of prolongation of the second stage of labor on the rate of cesarean section for women giving birth for the first time. Traditionally, doctors have advised women laboring for the first time to push for up to two hours if they did not receive epidural anesthesia, or up to three hours if they did. Dr. Gimovsky reported that allowing women to push the baby for more than the traditional two to three hour period led to a reduction in the cesarean section rate by a little over 50%. In other words, the group of patients who pushed for only two to three hours after full cervical dilation experienced a higher cesarean section rate of 43.2%, while patients who pushed for at least one hour more experienced a lower cesarean section rate of 19.5%.

This achievement looks impressive at first glance but a proper and careful analysis of the findings raises serious concerns about the conclusions. First, the 78patients studied represent a very low number for such a subject under investigation; the authors acknowledged in their conclusion that the study was underpowered in its ability to detect maternal and fetal risks associated with the intervention. This is an understatement, considering the magnitude of negative implications of any misinterpretation of the study's results! It is a surprise that they chose only to study such a low number of subjects for such a serious issue that can affect undeservedly maternal as well as neonatal wellbeing. Second, the rate for primary cesarean section was 21.5% in 2012 in the USA, the latest reported by CDC.[1] In the study reported by Dr. Gimovsky the rate of primary cesarean section was 43.2%; this is more than twice the average rate of primary cesarean section in the USA. This severe discrepancy raises serious questions about the quality of this RCT. Is there something wrong with the control subjects they had enlisted? Is there something wrong in the way they managed the labor in their control group and the ease of proceeding with a cesarean section? The authors have not made any comment in their article regarding this severe discordance between their control subjects and the average primiparous USA pregnant woman. They must have certainly missed this discrepancy because any other assumption would raise serious ethical and scientific concerns.

Finally, by the authors' admission, their study was underpowered and consequently unable to evaluate the safety of the procedure they used to achieve the highly questionable reduction in primary cesarean section rates. Such actions violate our Hippocratic Oath: the authors delayed the birthing process in order to reduce the primary cesarean section rate but were unable to assure the safety of the mothers and their babies. By the authors' admission, their study could not evaluate the safety of second stage prolongation. Why did the authors not enlist enough subjects in order to be able to evaluate the safety of their intervention? The inherent assumption that all RCTs provide valid and clinically useful conclusions is fallacious. Many clinicians, who might not be familiar with the science behind such a study, might be compelled to advise their patients to extend the second stage of labor longer at the potential detriment of their babies and themselves, just because this study has the aura of an RCT and it was published in one of the preeminent obstetrical journals. Based on current and better evidence, extending the second stage of labor is dangerous.[4] In other words, we expose our patients to additional risk without any measurable benefit. This is not what we should do, and more obstetricians should take a closer look at this study and evaluate its conclusions properly.

This study is an example of why despite the fact that we have performed hundreds or even thousands of Randomized Clinical Trials in past decades, obstetrical outcomes have not only failed to improve, but have instead deteriorated, in some complications such as preterm labor, maternal mortality, and fetal demise. Physicians who claim to practice evidence-based obstetrics based on such low quality RCTs must be careful not to expose their patients to unwarranted risks. Before any one of us changes the way we manage the second stage of labor, we must wait for high quality RCTs that have the power and proper design to provide robust and indisputable results.

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Conflict of interest

The author declares no conflict of interest.

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