



Advantages of neuraxial anesthesia for cesarean delivery

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To the Editor:

We read with great interest the article “Perinatal outcomes comparison between neuraxial and general anesthesia in pregnant women with placenta accreta spectrum: a multi-center retrospective study by Chenmian Liu and colleagues [1].

This retrospective study is notably because it investigates the impact of anesthesia techniques for cesarean delivery in patients with placenta accreta spectrum (PAS). Placenta accreta is a pathologic condition of placentation associated with a high-risk during delivery of massive obstetric haemorrhage that is among the leading causes of severe maternal outcomes [2]. The Authors investigated the influence of neuraxial (NA) or general (GA) anesthesia on perinatal outcomes in women with PAS undergoing cesarean delivery and collected data from 425 patients treated with either NA or GA. To optimize group matching, the Authors eliminated several confounding factors ultimately selecting 2 groups of 81 comparable patients and concluded that patients treated with NA had a significantly: lower periprocedural bleeding, less need for packed red blood cells (PRBC)

transfusion, shorter operation time and postoperative length of stay ($p < 0.05$). No difference was recorded on neonatal outcomes.

Despite the interest of presented data, there are some aspects that deserve better clarification, these include: more details on the anesthetic drugs used for NA or GA; data on neonatal and maternal adverse events; clarity on inclusion criteria and group (NA or GA) assignment; standard used to estimate procedural blood loss and surgical/pharmacologic hemostatic interventions;

The choice of drugs used for NA or GA, especially considering the possible use of opioids, is extremely relevant. The Authors cite the study by Ratnayake [3] about the implication of opioids and general anesthesia for mother and fetus, they affirm that they did not find a significant impact of general anesthesia on neonatal score, ICU transfer rate or mortality and they attributed this to the short duration of GA exposure. Nevertheless, they do not provide information regarding the time between induction of anesthesia, incision and birth of the baby as well as not describing the anesthetic drugs used, especially the type and dosage of opioid. Opioid use in obstetric patients can have implication on fetus and newborn such as respiratory depression, inhibition of neonatal reflexes associated with infant’s suckling and effects on fetal heart rate and Apgar score [4–7].

Regarding maternal adverse events, it would have been interesting if the authors had monitored the possible onset of maternal respiratory depression related to the use of neuraxial opioids as ASA and American Society of Regional Anesthesia and Pain Medicine recommends [8]. It may therefore be reasonable in obstetric patients to consider an opioid-free approach to cesarean delivery [9].

Group assignment criteria, the Authors report that among patients treated with NA were also included some that subsequently converted to GA. Specifically, nine patients were switched to GA due to hemodynamic instability and another three due to the performance of hysterectomy. We wonder

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whether leaving the patients switched to GA in the NA group could have influenced the results.

It is not clear how blood loss is estimated and consequently how the authors can state that they found a lower intraoperative blood loss and less units of PRBC transfused in the NA group in comparison to GA group. They did not explain how they estimated blood loss. To obtain a reliable quantitative measurement of the amount of blood lost there are direct measurements such as estimation of suction bottles, weight of blood-soaked gauze and drapes and also visual estimation of blood on the floor considering that blood is mixed with amniotic fluid. Amniotic fluid abnormalities as Polyhydramnios and Oligohydramnios can lead to an overestimation or underestimation of total blood loss and these factors are not specified in the characteristics of the patients under study.

Furthermore, there are a wide variety of surgical and anesthetic hemostatic interventions that affect intraoperative blood loss but in this study the Authors did not describe the measures used to prevent and control bleeding.

Considering the relevance of the treated issue, it would be extremely important to access the most detailed information to appropriately guide clinical decision making in patients with PAS.

Declarations

Conflict of interest The authors have no conflicts of interest.

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