Sociedade Brasileira de Anestesiologia

Brazilian Journal of ANESTHESIOLOGY

LETTER TO THE EDITOR

The impact of early feeding on optimizing gastrointestinal recovery after cesarean section: a non-randomized, open-label, clinical trial

Dear Editor,

Gastrointestinal disorders, such as nausea, vomiting, distension, and dry mouth have negative impacts such as pain, difficulties in nutrition, and increased susceptibility to infections.

In this non-randomized open-label clinical trial conducted at the Unimed Maceió Hospital from May to October 2022, 132 postpartum women were included in the study with n = 66 in the control group (following the standard early feeding protocol of the obstetrics service) and n = 66 in the intervention group (receiving an industrialized liquid preparation within 1 hour after surgery).

The trial included parturient aged between 18 and 45 years who underwent cesarean section under spinal anesthesia using an aseptic technique. Exclusion criteria encompassed patients with twin pregnancies, emergency procedures and comorbidities related to pregnancy.

All study participants were visited at 24 and 48 hours after the anesthetic procedure. During these visits, they were asked about various gastrointestinal aspects, including the presence of nausea/vomiting (considered as the primary outcome), elimination of flatus within 24 hours, occurrence of bowel movements within 48 hours, and the sensation of dry mouth (considered as secondary outcomes).

This clinical trial was registered in ReBEC (Registro Brasileiro de Ensaios Clínicos), number RBR-78gvj3g, and was approved by the Ethics and Research Committee with Human Beings — Brazil Platform of the Federal University of Alagoas, CAAE 55504221.1.0000.5013, number: 5,389,994.

The mean age of participants was 30.1±3.9 years and the mean gestational age was 38.6±1.6 weeks. Most participants had completed higher education (n = 93; 70.5%), whilst the rest had completed high school (n = 39; 29.5%). The average duration of preoperative fasting among the participants was 9.2±3.3 hours, with no significant difference between the intervention and control groups. The patients in the control group had an average fasting duration of 14.7±3.7 hours (including preoperative and postoperative fasting), following the standard hospital feeding protocol. On the other hand, the participants in the intervention group had an average fasting duration of 10.38±3.7 hours, and this difference was statistically significant ($p < 0.001$). After performing logistic binary regression adjusted for age and gestational age (Table 1), the results revealed a significant impact of early feeding on the recovery of puerperal women.

The analysis showed a lower presence of nausea and vomiting (OR = 27.1; 95% CI 3.4—215.4; $p = 0.002$), a higher occurrence of flatulence rate in 24 hours (OR = 0.8; 95% CI 0.3—0.2; $p < 0.001$) and evacuation in 48 hours (OR = 0.1; 95% CI 0.05—0.3; $p < 0.001$), as well as a reduced incidence of dry mouth sensation (OR = 24.4; 95% CI 5.4—109.7; $p < 0.01$). These findings demonstrate the beneficial effects of early feeding on gastrointestinal symptoms and highlight its potential for enhancing postoperative recovery in puerperal women.

The participants in the intervention group reported no discomfort related to the administered supplement. All participants who agreed to take part in the study successfully completed the assessment.

The restoration of postoperative gastrointestinal function, a topic extensively discussed in studies such as Saad et al.[1] and a recent meta-analysis by Li et al.[2] consistently highlights the favorable effects of early feeding in facilitating the recovery of puerperal women. These findings collectively highlight the protective role of early feeding in the postoperative period and its alignment with both national and international guidelines advocating for abbreviated fasting approaches.

Cesarean section introduces a substantial volume of blood and amniotic fluid into the peritoneal cavity, requiring abdominal cavity cleaning, which can trigger intestinal disorders,[2] and consequently pain, abdominal distension, and difficulties in initiating adequate breastfeeding.[3] Previous research has demonstrated that early feeding post-cesarean section, by mitigating nausea and vomiting and promoting more frequent bowel movements, plays a vital role in the recovery of patients.[4]

In our study, the provision of early feeding significantly improved gastrointestinal signs and symptoms among puerperal women, contributing to a more effective and expedited recovery. It is worth noting that maintaining metabolic health in the body relies on the delicate balance between caloric intake and utilization, encompassing processes such as nutrient absorption, metabolism, transportation, and

https://doi.org/10.1016/j.bjane.2023.11.002

Table 1 Association between gastrointestinal signs and symptoms and early pre-elective cesarean feeding in puerperal women.

Gastrointestinal signs and symptoms	OR	95% CI	*p*-value[a]
Nausea and vomiting	27,125	3,416– 215,365	0.002
Flatulence rate in 24 h	0.790	0.300 – 0.209	< 0.001
Evacuation in 48 h	0.130	0.053 – 0.315	< 0.001
Dry mouth sensation	24,421	5,438 – 109,669	< 0.001

[a] Binary logistic regression, adjusted to age and gestational age.

storage. Surgical procedures often lead to physiological disruptions, which can involve autonomic system impairment (particularly the parasympathetic division), inflammatory processes, and potential interactions with drugs and opioids, especially in a surgery that involves extensive manipulation in the intestinal region.[5]

Despite the limitations present in this study, such as its non-randomized and non-double-blind nature and being conducted in a single private center where participants have a high level of education, our study's findings have significant implications for pregnant women and puerperal patients. The results we have obtained are of considerable importance, offering valuable insights into the care of pregnant women. Specifically, our research underscores the critical role of early feeding in the context of spinal anesthesia with opioids during cesarean sections.

These findings are anticipated to drive improvements in maternal care. By emphasizing the importance of early feeding, our research can potentially influence the development of protocols within maternity services. This emphasis on early feeding not only optimizes the recovery process but also enhances the overall well-being of this demographic. The outcomes of our study thus serve as a fundamental cornerstone in the ongoing endeavor to enhance the care and experience of pregnant women and puerperal patients.

Declaration of Competing Interest

The authors declare no conflicts of interest.

Support

Programa de Pós-Graduação em Ciências Médicas (PPGCM)/ UFAL and Hospital UNIMED de Maceió

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Received 11 July 2023; accepted 7 November 2023
Available online 14 November 2023