

Effect of Early Postoperative Feeding on Gastrointestinal Tract Motility after Cesarean Section

Mohammed M. Anwer ^{1*} M.B.B.Ch, Fahd A. El-Omda ¹ MD and
Maged M. Labib ² MD.

Obstetrics &
Gynecology

*Corresponding Author:

Mohammed M. Anwer

omarsugar1503@gmail.com

Received for publication April 20, 2022; Accepted October 22, 2022;
Published online October 22, 2022.

doi: 10.21608/aimj.2022.133259.1922

Citation: Mohammed M. , Fahd A. and Maged M. Effect of Early Postoperative Feeding on Gastrointestinal Tract Motility after Cesarean Section. AIMJ. 2022; Vol.3-Issue10 : 55-59.

¹Chairman of Obstetrics and Gynecology Department, El-Maady Armed Forces Hospital, Cairo, Egypt.

²Obstetrics and Gynecology Department, Faculty of Medicine, Al-Azhar University Cairo, Egypt.

ABSTRACT

Background: Cesarean section is a delivery of the baby by an abdominal and uterine incision. It is considered one of the most frequently surgical intervention performed in the world about from 37% to 67%. Cephalopelvic disproportion, repeat cesarean section, fetal distress, Malpresentation and multifetal gestation are the most common indications for cesarean section.

Aim of the work: To detect the effect of early postoperative feeding on patient satisfaction and gastrointestinal function after cesarean delivery.

Patients and methods: A randomized controlled study included 200 women admitted to the labor ward in Al-Hussein and Sayed Galal Hospitals, Al-Azhar University during the period from March 2021 to December 2021 Study group: 100 cases, early feeding irrespective hearing bowel sounds and Control group: 100 cases, delayed oral semisolid foods after bowel opening.

Results: There were non-significant differences between both groups as regard BMI, gestational age, and duration of surgery, blood loss, and ambulation. There were statically significant difference between the two groups regarding age, bowel sounds, and bowel opening. In the early group, return of bowel sounds and movement of bowel are earlier. Concerning nausea and vomiting are less in early group but with no significant difference. The study group had much satisfaction than group B with statically significant differences between both groups.

Conclusion: Early oral feeding after uncomplicated cesarean section is much better, early feeding without hearing bowel sounds, after 6 hours after operation has many advantages; it resulted in more rapid return in bowel functions, more satisfaction, less vomiting and nausea.

Keywords: Early postoperative feeding; Gastrointestinal function; Cesarean section.

Disclosure: The authors have no financial interest to declare in relation to the content of this article. The Article Processing Charge was paid for by the authors.

Authorship: All authors have a substantial contribution to the article.

Copyright The Authors published by Al-Azhar University, Faculty of Medicine, Cairo, Egypt. Users have the right to read, download, copy, distribute, print, search, or link to the full texts of articles under the following conditions: Creative Commons Attribution-Share Alike 4.0 International Public License (CC BY-SA 4.0).

INTRODUCTION

The practice of obstetrics and gynecology has undergone many changes in the past century and one of these changes is an increase in the frequency of cesarean section. In fact, cesarean section has become one of the commonest major surgical procedures in some countries. Cesarean section rates ranging from 36.96%-64.7% have been reported. ¹

"Early oral eating after CS increases recovery to bowel function and does not increase the incidence of postoperative complications," according to a recent meta-analysis of trials comparing between early oral feeding and delayed oral feeding following Cesarean section. ²

Solid food was traditionally withheld for the first 24 hours after a caesarean section in the idea that this

would prevent gastrointestinal issues. Early feeding, on the other hand, has been found to be as safe as delayed progress in multiple clinical trials and a comprehensive review. approach to save money Furthermore, several other advantages have been documented, including a faster audible intestinal sounds and a more regular oral feeding , also less hospital stay. ³

Despite the fact that data on the safety of early oral feeding following a CS appears to be conclusive, the effect of various postoperative feeding regimens on patient satisfaction has not been adequately investigated, with the only available data coming from one quasi-randomized trial. ⁴

After a caesarean delivery, women's needs for hydration and nutrition are critical. Traditionally, post-operative hydration after a caesarean section

entailed administering 2–3L of intravenous fluids throughout the first 12–24 hours to compensate for fluid loss during surgery as well as maintenance needs. In the absence of nausea and noticeable bowel motion, oral intake is normally permitted after 24 hours. After flatus has passed, a regular diet is started.⁵

Some studies now feel that after a low-risk caesarean delivery, women can start drinking oral liquids as soon as they are awake. They can also acquire a regular diet sooner than with the old way.⁶

In a study by Mehta et al., early oral feeding was shown to be safe and well tolerated. When compared to delayed feeding, they discovered that early postoperative feeding resulted in a better outcome. It resulted in a better rate of patient satisfaction while causing no substantial increase in post-operative morbidity or mortality.⁴

The aim of this work was to detect the effect of early oral feeding after cesarean section on gastrointestinal function and patient satisfaction.

PATIENTS AND METHODS

During the period March 2021 to December 2021, 200 women were admitted to the labour wards of Al-Hussein and Sayed Galal Hospitals, Al-Azhar University, after a decision to perform a caesarean section due to obstetric indications. Only elective caesarean sections were included in the study.

Patients with a maternal age of 20 to 40, an elective CS, spinal anaesthesia, and a singleton pregnancy were included in the study.

While woman with Medical illnesses like hypertension, diabetes, liver or kidney disease, emergency caesarean section, general anaesthesia, multiple pregnancies and age more than 40 or less than 20 were excluded from this study.

All caesareans were performed under spinal anaesthesia with a spinal needle no. 25 injecting heavy Marcaine. Every step of the caesarean was conducted by an obstetrics-gynecology resident following hospital guidelines, including suturing the uterus in two layers, delicate tissue manipulation, and an operative period of 30-129 minutes. The operation period was the period from the start of the surgery until the skin closure was completed.

PATIENTS: This study included 200 patients who were randomly assigned to one of two groups: The

study group (Group A) consisted of 100 patients who were given oral fluids and semisolid food within 6 hours of surgery, regardless of intestinal noises, flatus, or faeces. A total of 100 patients made up the **control group (Group B)**. Patients should resume drinking oral fluids after 6 hours, but no solid or semi-solid food should be consumed until flatus or stool has passed..

Methods:

All patients were asked about their personal history: age and parity, their medical history: a history of medical disorders, history of cesarean section: the exact indication of the section, operative time, gestational age, postoperative feeding: either early or late, after or before passage of flatus, self-satisfaction, gastrointestinal symptoms such as nausea, vomiting and distention.

Patients examined every hour by resident in first 6 hour and postoperative data were registered during a standard questionnaire. They were examined for signs of ileus, time of return of bowel sounds, time of ambulation and satisfaction of the patient.

Ethical considerations

Study protocol was submitted for approval by the Ethical Committee of Faculty of Medicine – AL-Azhar University – Ethical committee of the Obstetric and Gynecology Department. Informed verbal and written consent was obtained from each participant sharing in the study after explanation of the purpose and procedures of the study, personal privacy and confidentiality were respected in all levels of our study.

Statistical analysis:

When appropriate, data were statistically reported using mean, range, standard deviation (SD), frequencies (number of cases), and percentages. The one-way analysis of variance (ANOVA) test was used to compare numerical variables between research groups, with posthoc multiple 2-group comparisons. When comparing two groups, the paired t test was used to compare numerical variables within each group.

The Chi square (χ^2) test was used to compare categorical data. When the anticipated frequency is less than 5, the exact test was utilised instead. Statistical significance was defined as a P value of less than 0.05.

RESULTS

In the present study, different points of comparison were studied between group A (early feeding) and group B (delayed feeding)The experimental data were collected; spastically analyzed according To factorial experiment in a completely randomized design to study the effect of the individual factors as well as the interactions. Data were computed in order to ascertain that the observed effects were real and discernable from chance effect.

Descriptive data was summarized as means and standard deviations (\pm SD), differences were considered significant when P value \leq 0.05 and were considered Non-significant when P value \geq 0.05.

Variable	Group A		Group B		P Value
	Mean	\pm S.D.	Mean	\pm S.D.	
Age	25.05	4.490	27.26	4.551	.001
GA	38.24	1.033	38.28	0.944	.800
BMI	30.30	5.039	29.11	4.318	0.076

Table 1: Demographic data of both groups

The mean age for group A (early feeding) was 25.05years, while the mean age for group B was 27.26years, the mean gestational age for group A was 38.24 weeks while it was 38.28weeks for group B. The mean BMI for group A was 30.30, while it was 29.11 for group B. (Tables 1&2). There were non-significant statistical differences between both groups as regarding gestational age and BMI

Variable	Group A		Group B		P value
	Mean	±S.D.	Mean	±S.D.	
Operation time	1.19	0.471	1.07	0.433	0.058
Blood loss in milliliters	451.46	99.621	476.19	89.739	0.067

Table 2: Operative details in both groups

Duration of surgery was recorded for all patients, the mean duration for group A(early feeding)was 1.19 hours, while mean duration for group B (late feeding) was 1.07 hours. Blood loss was recorded for all patients; the mean blood loss for group A (early feeding) was 451.46 ml, while mean blood loss for group B (late feeding) was 476.19ml. There was non-significant statistical difference between both groups regarding operative time and blood loss.

Variable	Group A		Group B		P value
	Mean	±S.D.	Mean	±S.D.	
Start of feeding (hrs)	6	0.000	10.65	2.15	0.000
Bowel sounds(hrs)	6.07	1.600	7.32	2.156	0.000
Bowel opening(hrs)	8.53	1.550	10.56	2.156	0.000
Ambulation(hrs)	6.67	1.110	6.92	1.663	0.206
Discharge(hrs)	34.24	1.330	36.39	1.562	0.320

Table 3: Postoperative follow up in both groups

The mean time of start of oral feeding in group A was after 6 hours, while mean time of start of oral feeding in group B was after 10.65 hours. The mean bowel sounds for group A (early feeding) were heard after 6.07 hours, while mean bowel sounds for group B (late feeding) were heard after 7.32 hours. The mean bowel opening for group A (early feeding) was after 8.53 hours, while mean bowel opening for group B(late feeding) was after 10.56 hours. . Ambulation were recorded for all patient, the mean ambulation for group A(early feeding)was after 6.67 hours, while mean ambulation for group B(late feeding) was after 6.92 hours. Discharge time were recorded for all patients, the mean discharge for group A (early feeding) was after 34.24 hs, while the mean discharge for group B (late feeding) was after 36.39 hs .

Statistically significant difference was recorded between the two groups regarding start of oral feeding, bowel sounds and bowel movements, but there was statically non-significant difference between both groups regarding ambulation time and discharge time.

Satisfaction	No	Count	Group		Total
			Early	Late	
		6	23	29	
		% within Satisfaction	20.6%	79.3%	100.0%
		% within Group	6%	23%	14.5%
	Yes	Count	94	77	171
		% within Satisfaction	54.9%	45.1%	100.0%
		% within Group	94%	77%	85.5%

Table 4: Satisfaction in both groups

Satisfaction was recorded for all patients, regarding satisfaction for early feeding group A 94 patients of 100 tested patients had the feeling of satisfaction with a percent 94%, while 77 patients of 100 patients had a feeling of satisfaction with a percent 77%, statistically significant difference was recorded between both groups

Neusea	No	Count	Group		Total	P value
			Early	Late		
		87	79	166		
		% within Neusea	52.4%	47.6%	100.0%	0.186
		% within Group	87%	77%	83.0%	
	Yes	Count	13	21	34	
		% within Neusea	38.2%	61.8%	100.0%	
		% within Group	13%	21%	17%	

Table 5: Nausea in both groups

Regarding the effect of early feeding (group A) on nausea 13 patients of 100 tested patients had the feeling of nausea with a percent 13%, while in late feeding (group B), 21 patients of 100 patients had nausea with a percent 21% (Table 5).

Vomiting		Count	Group		Total	P value
			Early	Late		
No		93	87	180	0.278	
	% within Vomiting	51.7%	48.3%	100.0%		
	% within Group	93%	87%	90.0%		
	Count	7	13	20		
	% within Vomiting	35%	65%	100.0%		
	% within Group	7%	13%	10.0%		
Yes		7	13	20	0.278	
	% within Vomiting	35%	65%	100.0%		
	% within Group	7%	13%	10.0%		
	Count	7	13	20		
	% within Vomiting	35%	65%	100.0%		
	% within Group	7%	13%	10.0%		

Table 6: Vomiting in both groups

Regarding the effect of early feeding (group A) on vomiting only 7 patients of 100 with a percent 7% while in late feeding (group B) 13 patients of 100 had vomiting with a percent 13%.stastically non-significant difference between both groups (Table 6).

DISCUSSION

Cesarean delivery is one of the most prevalent surgeries in modern obstetrics all around the world. Because of the risk of postoperative complication, oral intake is normally restricted for the first day after a caesarean section (CS). In spite of all the evidences of the benefits and safety of early oral feeding following Cesarian section, this practice continues to be practiced in clinical settings.⁸

This study was performed to detect the effect of early postoperative feeding on patient satisfaction and gastrointestinal motility folowing cesarean sections. It also compared the results between early and late feeding after cesarean delivery.

Concerning demographic data, the case group and control group was similar regarding most background variables, except our study group is younger than control group. The mean age for group A (early feeding) was 25.05 years, while the mean age for group B was 27, 26 years (Table1). Our patients, in general, were young.

The demographic, obstetrics, and surgical features of the trial participants in the two groups did not differ statistically significantly. the mean age was 30.23 ± 4.7 for early group against 30.81 ± 4.7 for delayed group , $P = 0.458$, and the mean parity was 2.01 ± 1.1 for early group versus 2.39 ± 1.3 for delayed group , $P = 0.061$. STUDY DONE BY Adamu, Ogbadua, et al.³

Concerning postoperative follow up:

In our study the mean bowel sounds and bowel opening for group A (early feeding) were after 6.07/8.53. Hours, while mean bowel sounds and bowel opening for group B (late feeding) were after 7.32/10.56 hours. A statistically significant difference was recorded between the two groups. (Table 3). These results are in accordance with the study,⁹ they found audible bowel sounds and passage of flatus were earlier in early feeding group (21.6h and 34.5 h, respectively) as compared with delayed feeding group (31.7h and 49.2 h, respectively). Huang et al.¹⁰ calculated a sample size of 152 women (76 women for each group of the study) and found that the early feeding group had a faster development of bowel sounds, a faster passage of flatus post-surgery, and a faster bowel movement (faeces), which is consistent with earlier research. Women in the feading study group had a

considerably shorter time to acquire bowel sounds than women on delayed control group ; 7.3 hours versus 11.5 hours (P value = 0.005). The early study group had a shorter mean duration of initial flatus passage than the late control group (30.7 hours versus 37.5 hours) (P = 0.009).

The early feeding study group (group A) had a statistically significant shorter mean interval in return of bowel movement as shown by passage of faeces than the late feeding control group (group B) , 62.6 hours against 69.9 hours (P = 0.035).

Patients in The early feeding study group (group A) had a shorter duration of IV fluid intake , 18.9 h versus 25.0 h (P value< 0.001) which also in accordance with our study. But result in study done by Masood et al.¹¹ The time to first appearance of bowel sounds after 17.09hs with p value<0.19, and time of passage of flatus after 19.78 hs with p value <0.25 which show statically non-significant difference. This due to study on 1176 and early oral feeding start from 2 hours to 12 hours.

In the present study, ambulation showed a statically non-significant difference between both groups. The mean ambulation for group A (early feeding) was after 6.67 hours, while mean ambulation for group B (late feeding) was after 6.92 hours. In controversy with study Da Silva et al.,¹² 53.8% of the early feeding group were able to ambulate after 15 h post surgery while 27.9% of the control group were able to ambulate after the same time . Intensities of thirst and hunger were significantly higher in the CF group (P<0.001 for both measures) which show stastically significance.

In our study nausea and vomiting had no statically significant difference which in accordance with Guo et al.⁸ which studied on 100 cases, Early oral feeding group start oral feeding as early as 2 hours to 12 hours post operatively,All found to have no statistical significant difference in post-operative gastrointestinal complications e.g. nausea, paralytic ileus, vomiting.

In our study Satisfaction was recorded for all patients, regarding Satisfaction for early feeding group A 94 patients of 100 tested patients had the feeling of satisfaction with a percent 94%, while 77 patients of 100 patients had a feeling of satisfaction with a percent 77%, statistically significant difference was recorded between both groups which in accordance Razmjoo et al.¹³ which showed: The

early feeding study group shows higher maternal satisfaction than the late feeding control group. This was consistent with the findings of other investigations. The favourable benefits of early ambulation, early discharge from hospital, benefits of early recovery, and financial benefits could explain the higher satisfaction indicated by the early feeding study group. The mothers' satisfaction was higher in the early group than in the late group, 96.4 versus 90.7 (P value 0.001) on a VAS scale of 0–100. However, the difference was statistically significant. However, a research by Teoh, Teoh et al.¹⁴ included trials that utilised multiple metrics to assess women's happiness, but only studies that employed the VAS were included in the current analyses, as EOF was often defined as any oral intake beginning within 12 hours following surgery. There were 4584 women who had had a caesarean section. Because the study had a large number of mothers, early oral feeding within 12 hours, and was conducted in Pakistan, no significant variations in patient satisfaction were discovered. We conclude that early oral feeding is feasible and well tolerated and is associated with reduced postoperative discomfort, gastrointestinal complications (e.g. nausea, vomiting and paralytic ileus) and increase patient satisfaction, we recommend early oral feeding to be routine in uncomplicated caesarean section under regional anaesthesia. In the future we plan to perform the same design to compare early oral feeding in patients whom caesarean section is done under regional anaesthesia versus patients in whom caesarean section is done under general anaesthesia on postoperative tolerance of early oral feeding.

CONCLUSION

Cesarean section is considered the most common surgical intervention done by Obstetricians. This study showed that intake of oral feeding after uncomplicated caesarean section is much better, early feeding without hearing bowel sounds, after 6 hours after operation has many advantages, it resulted in more rapid return in bowel functions, more satisfaction, less vomiting and Nausea.

Conflict of interest : none

REFERENCES

- Betrán AP, Ye J, Moller AB, Zhang J, Gülmezoglu AM, Torloni MR. The increasing trend in caesarean section rates: global, regional and national estimates: 1990-2014. *PloS one*. 2016; 11(2): e0148343.
- Mawson AL, Bumrunghuet S, Manonai J. A randomized controlled trial comparing early versus late oral feeding after caesarean section under regional anaesthesia. *International journal of women's health*. 2019; 11:519-24.
- Ogbadua AO, Agida TE, Akaba GO, Akitoye OA, Ekele BA. Early versus delayed oral feeding after uncomplicated cesarean section under spinal anesthesia: A randomized controlled trial. *Nigerian Journal of Surgery*. 2018; 24(1):6-11.
- Kathpalia SK. Early maternal feeding versus traditional delayed feeding after cesarean section: a pilot study. *The Journal of Obstetrics and Gynecology of India* .2017;67(3):178-82.
- Kominiarek MA and Rajan P. Nutrition recommendations in pregnancy and lactation. *Medical Clinics*. 2016; 100(6): 1199-215.
- Ahmed HA, El-Shahawy AA, Sammour HM. Effect of immediate versus early oral hydration on caesarean section postoperative outcomes: a randomized controlled trial. *The Egyptian Journal of Hospital Medicine*. 2018;72(8):5072-8.
- Mehta S, Gupta S, Goel N. Postoperative oral feeding after cesarean section—early versus late initiation: a prospective randomized trial. *J Gynecol Surg*. 2010; 26(4):247–50.
- Guo J, Long S, Li H, Luo J, Han D, He T. Early versus delayed oral feeding for patients after cesarean. *Int J GynaecolObstet*. 2015; 128:100 5.
- Barat S, Esmailzadeh S, Golsorkhtabaramiri M, Khafri S, Recabdarkolae MM. Women's satisfaction in early versus delayed postcaesarean feeding: A one-blind randomized controlled trial study. *Caspian Journal of Internal Medicine*. 2015;6(2):67.
- Huang H, Wang H, He M. Early oral feeding compared with delayed oral feeding after cesarean section: A meta-analysis. *J Matern Fetal Neonatal Med*. 2016; 29:423 9.
- Masood SN, Masood Y, Naim U, Masood MF. A randomized comparative trial of early initiation of oral maternal feeding versus conventional oral feeding after cesarean delivery. *International Journal of Gynecology & Obstetrics*. 2014 Aug 1;126(2):115-9.
- Da Silva HB, Sousa AM, Guimarães GM, 2015. Does previous chemotherapy-induced nausea and vomiting predict postoperative nausea and vomiting? *Acta Anaesthesiol Scand*. 2015; 59:1145.
- Adeli M, Razmjo N, Tara F, Ebrahimzadeh S. The effect of early post cesarean feeding on women's satisfaction. *Journal of Family and Reproductive Health*. 2010:79-82.
- Teoh WH, Shah MK, Mah CL. A randomised controlled trial on beneficial effects of early feeding post-Caesarean delivery under regional anaesthesia. *Singapore medical journal*. 2007;48(2):152.