ORIGINAL ARTICLE

Early versus Delayed Feeding in Uncomplicated Primary Caesarean Section - A Comparative Study at Shree Birendra Hospital

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Abstract

Introduction: Conventionally, oral feeding is delayed after Caesarean section fearing delayed bowel motility. This study is designed to compare early oral feeding within six hours versus our conventional delayed 24 hours of oral feeding for women at term undergoing primary Caeserean section.

Methods: A prospective, comparative study was conducted over a six months period at Shree Birendra Hospital, Kathmandu, Nepal. All pregnant ladies undergoing uncomplicated Caeserean section at 37 to 42 weeks of gestation were randomly placed in two groups: (A) Early feeding group (Oral fluids within six hours) (54) and (B) Delayed feeding group (Oral fluids after 24 hours) (56). The patients were noted for symptoms of nausea, vomiting, abdominal distension, return of bowel sound, passing of flatus, duration of stay in hospital and total IV fluid requirements.

Results: The passage of flatus was significantly earlier in Group A compared to Group B (12.54 hours vs 15.38 hours - $p < 0.05$). Appearance of bowel sounds was also earlier in Group A (8.85 hours vs 12.63 hours - $p < 0.05$). The mean IV fluid requirement was comparatively less in Group A (4.15 litres vs 5.71 litres - $p < 0.05$). The average hospital stay was also significantly less in Group A (2.89 days vs 4.16 days - $p < 0.05$).

Conclusion: Early feeding in patients undergoing uncomplicated primary Caesarean section is safe, generally well tolerated with early return to bowel functions, less intravenous fluid requirements and reduced duration of hospital stay.

INTRODUCTION

Worldwide, Caesarean section is one of the most common abdominal surgical procedures carried out. In the past, as with all abdominal surgeries, it was believed that bowel motility was delayed after Caesarean section. It was a common belief that the bowels needed rest after all abdominal surgeries, and feeding will interfere with the function of resting bowels. Hence, patients were kept nil per orally and feeding started only after the bowel sounds were heard and patient had passed flatus. Masood et al reported that 61.6% of the doctors in Obstetrics and Gynecology believed that early feeding leads to ileus and wound dehiscence, with 3.4% fearing burst abdomen. This traditional practice of with-holding oral feed for the fear of nausea, vomiting and abdominal distension was not evidence based.

In recent years, with the development of enhanced recovery after surgery (ERAS) protocols, the safe and effective promotion of the recovery of gastrointestinal function after surgery and prevention of postoperative complications have caused widespread adoption of early feeding over traditional delayed oral feeding. Studies have shown that early post-operative feeding is associated with faster recovery, feeling of well being, faster wound healing

and less hospital stay.[7] Since Caeserean section, if done meticulously, requires little bowel manipulation and has a shorter span of surgery, early feeding and subsequently quicker recovery can be achieved. The importance of early feeding post-operatively is based upon the fact that food intake is able to stimulate a reflex causing a coordinated propulsive activity and hence increasing the secretion of gastrointestinal hormones. These effects cause an overall positive effect on intestinal movement decreasing the duration of postoperative ileus.

Searching through the literature, we could not find any study conducted from Nepal comparing early vs delayed feeding after Caesarean section. Only one study assessed patient satisfaction after implementing an ERAS protocol for elective Caesarean sections and reported a very high satisfaction rate. Hence, this study is designed to assess the impact of early oral feeding within six hours versus our conventional delayed 24 hours of oral feeding for women at term undergoing primary uncomplicated Caeserean section.

METHODS

This was a prospective randomized, comparative hospital based interventional study conducted over a six months period from Oct 2020 to March 2021 in the Department of Obstetrics and Gynaecology at Shree Birendra Hospital, Chhauni, Kathmandu, Nepal. Ethical approval was taken prior to study from the Institutional Review Committee. All pregnant women, who had undergone primary uncomplicated emergency and elective Caeserean section in the maternity ward of Shree Birendra Hospital at 37 to 42 weeks of gestation were enrolled for this study. Patients with previous Caeserean sections, medical comorbidities, multiple pregnancies, transverse lie, obstructed labor, previous major abdominal surgeries or with intra-operative complications were excluded from the study. After taking informed consent, women included in the study, were randomly placed in two groups - early feeding group (A) (Within six hours) or delayed feeding group (B) (After 24 hours). Simple randomization was done by asking the subject to draw a card from a box containing two cards with A or B written. Patients' data were collected in a structured performa kept at the maternity ward. Demographic profile of the patients was recorded. All patients received IV Ondansetron 4 mg, just prior to spinal anesthesia. Indication of Caeserean section, whether elective or emergency, the duration and time of completion of the surgery were recorded. Intra - and post -operative blood transfusion, if required, was taken into account. Any bowel manipulation, difficulty in performing the procedure was also taken into account. Total duration of surgery was noted. In group A, oral fluids were started within six hours of surgery. Initially sips of plain water around 50 ml was given and progressed gradually to liquid diet followed by soft diet. In group B, oral fluids were started only after 24 hrs of surgery followed by soft diet after another 24 hrs. The patients were watched for symptoms of nausea, vomiting, abdominal distension, vitals, abdominal girth, bowel sounds, input output charting were recorded every four hours for 24 hours. Participants were given a sheet of paper to note the time they passed flatus, and time of their first tolerated solid diet. She was encouraged for mobilization and transferred to the ward. If the patient developed nausea, vomiting and abdominal distension, she was kept nil per orally for another six hours, managed with IV fluids and then restarted on oral fluids. In case of increasing abdominal distension, NG tube was inserted. Patients were considered fit for discharge if they were tolerating solid food without vomiting, afebrile, ambulating with minimal post operative pain controlled with oral analgesics. The duration of postoperative ward stay, return of bowel sound, passing of flatus, duration of stay in hospital, any NG tube intubation, wound infection and any other post operative complications were also duly noted. The recorded data were then analyzed using SPSS for Windows version 23.

RESULTS

A total of 110 patients fulfilling the criteria were enrolled in this study. Fifty four patients were randomly selected for group A and 56 patients were enrolled in group B. Majority of the women were of the age group 21 to 30 years in both the groups.

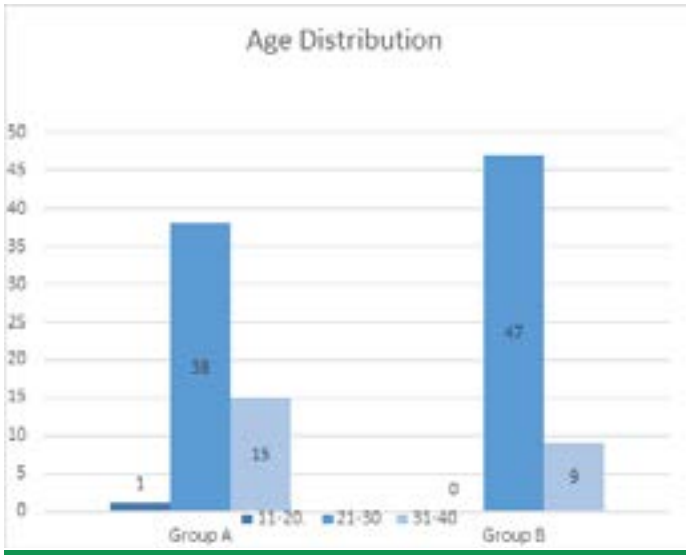

Fig 1: Age distribution in both groups

Majority were primi-gravidas in both the groups.

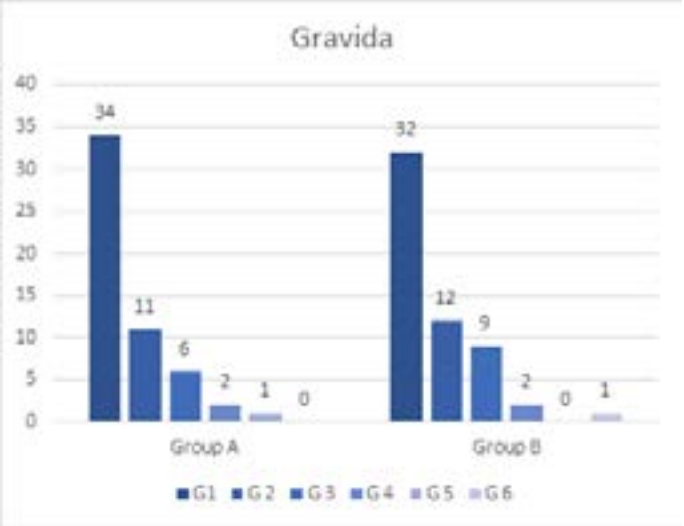

Fig 2: Gravida in both groups

In early feeding group, 14 women had undergone emergency Caesarean section and 40 women had undergone elective Caesarean section. Whereas 13 women had undergone emergency Caesarean section and 43 had undergone elective Caesarean section in delayed feeding group.

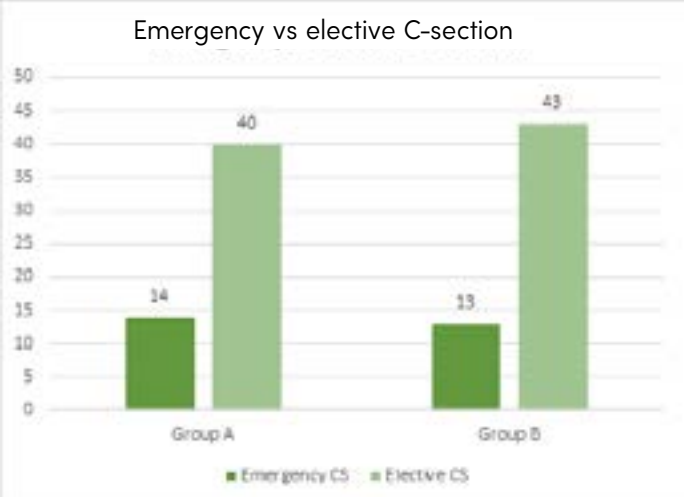

Fig 3: Emergency vs elective Caeserean section in both groups

The most common indication for Caesarean section was fetal distress in both the groups.

Table 1: Indications for Caeserean section in both groups

	Group A	Group B
Fetal distress	20	18
Non progress of labor	8	5
Primary subfertility	1	0
Cephalo-pelvic disproportion	2	2
Oligohydramnios	4	8
Contracted pelvis	2	1
Failed induction	2	7
Breech	3	4
Premature rupture of membrane	1	2
Deep transverse arrest	1	1
Prolonged 2nd stage	1	1
Others	9	7

Regarding paralytical symptoms, 13 women of group B experienced nausea while only seven in group A had nausea. Nine women had postoperative vomiting in delayed group, whereas only three had vomiting in early feeding group. Mild abdominal distension was noted in two women in early feeding group, while six patients experienced it in delayed feeding group.

Table 2: Post operative complications in both groups

	Group A	Group B
Post op nausea	7	9
Post op vomiting	3	3
Abdominal distension	2	1
Spinal headache	0	1

Only one woman in delayed feeding group experienced spinal headache. None of the women from both the groups were readmitted for any other cause. The average time taken for flatus passage in early feeding group was 12.54 hours while the average time taken for flatus passage was 15.38 hours in the delayed feeding group. The difference was statistically significant (p value < 0.05)

It took around 8.85 hours for the appearance of bowel sounds in the early feeding group whereas it took 12.63 hours in delayed feeding group which was also statistically significant (p value < 0.05). In the early feeding group the mean IV fluid requirement was 4.15 litres whereas the mean IV fluid requirement in delayed group was 5.71 litres, the difference being statistically significant (p value < 0.05). The average hospital stay in early feeding group was 2.89 days compared to 4.16 days in delayed feeding group. The difference was also statistically significant (p value < 0.05).

Table 3: Significant results comparison in both groups

	Group A	Group B	p value
Flatus passage (Mean)	12.54 hrs	15.38 hrs	< 0.05
Bowel sounds appearance (Mean)	8.85 hrs	12.63 hrs	< 0.05
IV Fluid requirements (Mean)	4.15 litres	5.71 litres	< 0.05
Hospital stay (Mean)	2.89 days	4.16 days	< 0.05

DISCUSSION

The traditional approach of withholding oral feed postoperatively for more than 24 hours, for the fear of nausea and vomiting has now been challenged in a number of studies.[-8] A recent meta analysis of 11 studies showed that early oral feeding was associated with a significantly shorter time to return of bowel motility compared to delayed oral feeding.[7] Hence this study was conducted in our institute to compare the effects of early vs delayed feeding in patients undergoing uncomplicated caesarean section. In our study the sample population in both the groups were comparable in terms of age and parity. Both the groups in our study, had comparable paralytical symptoms like nausea, vomitimg and abdominal distension which showed that early feeding is definitely tolerable. Similar findings were reported in other studies conducted by Mawson et al and Bar et al.[4,] However the study by Teoh WHL et al, had increased nausea in the early feeding group. Since the feeding was started after only 30 minutes after surgery, probably this explains the increased symptoms of nausea. In spite of this, maternal satisfaction was clearly higher in this group ($p < 0.0001$).

In the present study, IV fluid requirement in the early feeding group requirement was significantly less than in the delayed feeding group providing the additional benefit of less discomfort and less risk of phlebitis in the early feeding groups. This observation is similar to study conducted by Kathpalia SK et al, which had significantly less number of IV fluids requirement in the early feeding group (4.2 ± 1.2 vs 6.1 ± 0.8).

In our study, women in early feeding group had early return to bowel functions as the average time taken for flatus passage and passage of bowel sounds were significantly less compared to delayed feeding group. A meta analysis of 11 RCTs by Huang H et al published in 2016 also showed that early feeding was significantly associated with the shorter time to return of bowel motility compared with delayed feeding (7.3 h for passage of flatus; 8.75 h for bowel sounds).[7] Saad AF et al also reported shorter time to pass flatus and time to have bowel sounds ($p < 0.001$) in early fed group.

This study also showed that the early fed group had less days of hospital stay compared to the delayed fed group. This will reduce the financial burden to both the patients and the hospital. Similiar finding was noted in the studies by Teoh WHL et al, Masood SN et al, Mehta S et al and Arif N et al.[10-13] However in the study conducted by Kathpalia SK, there was no significant difference in total length of hospital stay in both the groups.[11] This can be attributed to the fact that no attempt was made to change the hospital policy of discharging the patient and the fact that the studies were conducted among different populations in different areas. Although the present study encourages early feeding post Caesarean section, it is a small scaled, single-center study catering only to uncomplicated Caesarean sections. Hence, generalization of the findings may not be appropriate. The present study also relies on assessment of various subjective parameters like nausea, pain abdomen, passage of flatus which may have led to potential biases. However, the present findings should be corroborated with further larger, multi centric studies in the future.

CONCLUSION

Based on the results of this study, it can be concluded that initiating early feeding in patients undergoing uncomplicated primary Caesarean section is safe, generally well tolerated with early return to bowel functions, less intravenous fluid requirements, faster patient mobilization and reduced duration of hospital stay.

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CONFLICT OF INTEREST: None

REFERENCES

1. Masood SN, Siddiqui IA, Masood MF, Masood Y, Mumtaz SN. To assess the practices about initiation of oral maternal feeding after cesarean section under regional anesthesia. Pak J Med Sci. 2011; 27(5): 996-1000.

2. Andersen HK, Lewis SJ, Thomas S. Early enteral nutrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications. Cochrane Database Syst Rev 2006;(4):CD004080.
DOI: 10.1002/14651858.CD004080.pub2
PMID: 17054196

3. Mangesi L, Hofmeyr GJ. Early compared with delayed oral fluids and food after caesarean section. Cochrane Database Syst Rev 2002; Issue 3, Art. No.: CD003516.
DOI: 10.1002/14651858.CD003516
PMID: 12137699 PMCID: PMC8715854

4. Mawson AL, Bumrungphuet S, Manonai J. A randomized controlled trial comparing early versus late oral feeding after cesarean section under regional anesthesia. Int J Womens Health 2019:11 519-525.
DOI: 10.2147/IJWH.S222922
PMID: 31686920 PMCID: PMC6751764

5. Karki D, Saha R. Assessment of patient satisfaction after implementing an Enhanced Recovery After Surgery (ERAS) protocol for elective Caesarean sections. J Kathmandu Med Coll. 2021;10(4):188-93.
DOI: 10.3126/jkmc.v10i4.43859

6. Adeli M, Razmjoo N, Tara F, Ebrahimzade S. Effect of early post cesarean feeding on gastrointestinal complications. Nurs Midwifery Stud. 2013;2(2):176-81.
DOI: 10.5812/nms.10184
PMID: 25414855 PMCID: PMC4228559

7. Huang H, Wang H, He M. Early oral feeding compared with delayed oral feeding after cesarean section: a meta-analysis. J Mater Fetal Neonatal Med. 2016;29:423-9.
DOI: 10.3109/14767058.2014.1002765
PMID: 25754213

8. 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. Niger J Surg. 2018 Jan-Jun;24(1):6-11.
DOI: 10.4103/njs.NJS26_17
PMID: 2964372 PMCID: PMC5883854

9. Bar G, Sheiner E, Lezerovizt A, Lazer T, Hallak M. Early maternal feeding following caesarean delivery: a prospective randomised study. Acta Obstet Gynecol Scand. 2008;87:68-71.
DOI: 10.1080/00016340701778849
PMID: 18158630

10. Teoh WHL, Shah MK, Mah CL. A randomised controlled trial on beneficial effects of early feeding post-Caesarean delivery under regional anaesthesia. Singapore Med J. 2007;48:152-157.
PMID: 17304396

11. Kathpalia SK. Early maternal feeding versus traditional delayed feeding after cesarean section: a pilot study. J Obstet Gynecol India. 2017;67:178-182.
DOI: 10.1007/s13224-016-0949-0
PMID: 28546664 PMCID: PMC5425639

12. Saad AF, Saoud F, Diken ZM, Hegde S, Kuhlmann MJ, Wen TS, et al. Early versus Late Feeding after Cesarean Delivery: A Randomized Controlled Trial. Am J Pernatol. 2016;33(4):415-9.
DOI: 10.1055/s-0035-1565918
PMID: 26479169

13. Masood SN, Naim U, Masood MF. A randomized comparative trial of early initiation of oral maternal feeding versus conventional oral feeding after cesarean delivery. Int J Gynecol Obstet. 2014;126:115-119.
DOI: 10.1016/j.ijgo.2014.02.023
PMID: 24856433

14. Mehta S, Gupta S, Goel N. Postoperative oral feeding after cesarean section: early versus late initiation: a prospective randomized trial. J Gynecol Surg. 2010;26:247-250.
DOI: 10.1089/gyn.2009.0092

15. Arif N, Ahmed RQ, Arif A, Zafar B, Shehzad F. Impact of early vs delayed oral feeding on hospital stay after cesarean section under regional anaesthesia. PAFMJ 2020; 70 (4): 1138-42.