COMPARISON OF EARLY HOSPITAL OUTCOME IN EARLY VERSUS DELAYED (2 VS. 8 HOURS) ORAL FEEDING IN FEMALES AFTER CEASAREAN SECTION UNDER REGIONAL ANESTHESIA

ABSTRACT

INTRODUCTION: The recommendation oforal feeding (OF) after 2 hours of the c-section (CS) under regional anesthesia (RA) should be encouraged as it results in quick postoperative recovery and lessen the time of hospitalization. Routine OF (just after hearing the bowel sounds through inspection) after CS under general anesthesia (GA) must be the final option.

OBJECTIVE: This study's objective is to compare early hospital outcomes in early versus delayed (2 vs. 8 hours) oral feeding in females after cesarean section under regional anesthesia.

MATERIALS AND METHODS

This randomized controlled trial was used which was completed in 6 months (August 12, 2017, until February 12, 2018). This study included 800 patients after getting informed consent form patients/attendants who met the inclusion criteria. Data was collected from the Department of Gynaecology& Obstetrics, Lady Aitchison Lahore. Females undergoing C section were randomly divided into 2 groups (group-A and Group-B) using a random number table. In Group-A and Group-B, females were fed early (within 2 hours) or delayed (after 8 hours) as per operational definition, respectively. Short-term hospital outcome time to bowel movement, time to Passage of flatus, abdominal distension, and hospital stay was measured.

RESULTS: The mean hospital stay in the early feeding group was 31.82 ± 11.01 hours and in the delayed feeding group was 37.24 ± 9.34 hours. The mean time to bowel sound in the early group was (15.72 ± 4.67 minutes) and in the delayed group (16.84 ± 4.58 minutes). The mean

time to Passage of flatus in the early and delayed group was 24.06 ± 5.60 minutes and 29.66 ± 5.36 minutes. The mean hospital stay, mean time to bowel sound, and mean time to Passage of flatus in the early group were statistically lower than the delayed group, p-value < 0.001. In early feeding group a total of 78(19.5%) cases had abdominal distension, and in the delayed feeding group 129(32.2%) cases had abdominal distension, with statistically lower abdominal distension in early group p-value < 0.001.

CONCLUSION: Through the findings of this study it was found that the frequency of abdominal distension, time to Passage of flatus, time interval to bowel sounds and Hospital stay was less in early feeding group as compared to delayed groups. So, in future by introducing early feeding we may reduce the hospital stay and can gain more females' satisfaction.

KEYWORDS: Caesarean section, satisfaction, postoperative early feeding, delayed feeding

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INTROUCTION

Cesarean section (CS) is one of the most commonly executed surgeries in which fetus delivery is assisted via incising abdomen and uterus.[1]It is usually indicated in the scenario where typical vaginal birth poses life-threatening risk for fetus or mother. [2] In developed countries, CS is successfully conducted to deliver approximately 25% babies. [2] The rate of CS has become so high in the last few decades with[3] reliable results however the chances of maternal as well as neonatal morbidity was considerably higher than vaginal birth. [2-4] Oral feeding (OF) after CS is essential as it tends to reverse mucosal atrophy because of starvation and assist in an increment of anastomotic collagen, which is good for healing of wound.[5, 6]

The results of the latest high-level research regarding early or delayed OF after CS are fairly debatable.[7, 8] In recent times, a study encouraged OF right after 2 hrs of CS under RA for quick recovery after surgery and short duration of hospitalization. Routine OF (just after hearing the bowel sounds through inspection) after CS under general anesthesia (GA) must be the final option.[9]

Izbizky G reported related outcomes in their study concerning abdominal distension, such as it was seen in 16 (17%) among delayed feeders, whereas in 16(16%) among early feeders, p-value > 0.05. [10] On the contrary, other studies reported quite controversial results such as 4.28% and 20% in early. They delayed feeding gatherings, respectively, p-value < 0.05.[11] Bowel movement time was seen to be increased among in delayed group 11.7±5 whereas it was reported as 7.8±2.9 hrs in early feeders, p-value < 0.0001. [11]Moreover, studies are debatable regarding their result among early and delayed gatherings such as 12±11 early and 15±11 in delayed groups, and p-value >0.050. [10]

In another study, the average time of hospitalization was 48.7±6.3 hrs among delayed OF gathering, whereas it was reported as 48.3±3.6 hrs in early OF gathering, p-value > 0.05. [11] Comparable results were demonstrated by Izbizky G; duration of hospitalization was 2.4 ± 0.5 and 2.5 ± 0.5 , in early and delayed feeders, respectively, (p-value > 0.05). [10] Furthermore, on average the flatus passing timing was comparable in both groups, 13.6 ± 6.8 hrs and 15.4 ± 5.8 hrs; in early and delayed feeding, respectively, (p-value > 0.05). [11] In another study, the average flatus passing timing was almost similar in both groups such as; 22 ± 14 and 23 ±12 in the

early and delayed feeding group, respectively, p-value > 0.05. [10] The results in terms of duration of hospitalization and flatus passing timing were comparable in two studies detailed above.

This study aims to compare early hospital outcomes in early versus delayed (2 vs. 8 hours) oral feeding in females after cesarean section under regional anesthesia. International data is controversial regarding abdominal distension and time to Passage of flatus in early and delayed feeding methods. [10, 11] This study is necessary to be conducted to find the optimum time of feeding for better short-term hospital outcomes such as time to bowel movement, time to Passage of flatus, abdominal distension, and hospital stay. If we prove early feeding (with 2 hours) as a good approach, we can alter our practice of mother feeding after c-section.

MATERIALS AND METHODS

STUDY DESIGN: Randomized controlled trial was used

DURATION OF STUDY: Study was completed in 6 months (August 12, 2017 till February 12, 2018)

SAMPLE TECHNIQUE: Non-probability consecutive sampling

SETTING: The study was conducted at Department of Gynaecology& Obstetrics, Lady Aitchison Lahore

SAMPLE SIZE: 800 females in each group (a total of 400 cases) were taken. Sample size is calculated using mean hospital stay 2.5±0.5 days in delayed group and 2.4±0.5 days in early group [11] using 95% confidence level, 5% level of significance and 80% power of study.

SAMPLE SELECTION:

Inclusion criteria

- All females aged 18-35 years planned for elective C section with regional anesthesia of any parity

- Term singleton pregnancies (was assessed on ultrasound having gestation 37-40 weeks)

Exclusion criteria:

Patients was excluded having

- Females with previous abdominal surgery (was assessed clinically)
- If females during C section have blood loss ≥ 500ml (was calculatedin the form of volume of blood loss by measuring the difference between pre weight and socked packs and suction bottle where 1 gm = 1 ml blood loss by both these methods was added to get the total blood loss.)
- Infectious conditions such as Chorioamnionitis (if foul swelling vaginal discharge and fever > 100 F^0)

DATA COLLECTION PROCEDURE:

In this study we included 800 patients after getting informed consent form patients/attendants who met the inclusion criteria. Prior permission from the hospital ethical committee was taken. Data was collected from the Department of Gynaecology& Obstetrics, Lady Aitchison Lahore. Necessary demographical such as name, age and address and gestational history were taken. All surgeries were done under regional anesthesia and C section was performed by senior consultants having at least 5 years experience after post graduation. Females undergoing C section were randomly divided into 2 groups (group-A and Group-B) using computer generated random number tables. In Group-A and Group-B females were fed early (within 2 hours) or delayed (after 8 hours) Early vs. delayed feeding was considered when oral liquid feed was given within 2 hours of C/section and delayed feeding was considered when oral liquid feed was given after 8 hours of C/section. Early hospital outcome contained time to return of bowel sounds, hospital stay, time to Passage of flatus and abdominal distension

Time to return of Bowel sounds: it was calculated as time in hours for the return bowel sounds (that was heard using stethoscope by placing at the abdomen of the patient for 1 minute).

Mean Hospital stay: It was calculated as a time for a patient's stay in ward that is calculated from the point when patients are shifted toward till her discharge, was calculated in hours. Patients were discharged when they were able to take oral solid food and go to the washroom.

Time to Passage of flatus: It was measured in terms of total time required measured from C-section to time needed passing flatus in hours.

Abdominal Distension: It was defined when substances, such as air (gas) or fluid, accumulate in the abdomen causing its outward expansion beyond the normal girth of the stomach and waist.The patinas were requested to tell if it happens. Patients were discharged if they tolerate solid food without vomiting.

DATA ANALYSIS PROCEDURE

All data was analyzed using SPSS (version 20). Quantitative data like age, gestational age, time to bowel movement, time to Passage of flatus and hospital stay was presented as mean ± S.D. Abdominal distension being qualitative data was presented in the form of f(%). Independent sample t-test was used for comparison of quantitative variables (time to bowel movement, hospital stay and time to Passage of flatus) in both study groups. Chi-square test was applied to compare frequency of abdominal distension in both study groups, p value ≤ 0.05 was taken as significant.

RESULTS

The mean age of cases in the early and delayed group was 26.80 ± 5.09 years and 26.25 ± 5.19 years respectively. The minimum and maximum age in both groups was 18 and 35 years. The mean gestational age in the early group was 38.72 ± 1.06 weeks and in the delayed group was 38.65 ± 1.01 weeks. The minimum and maximum gestational age was 37 and 40 weeks. The mean hospital stay in the early feeding group was 31.82 ± 11.01 hours and in the delayed feeding group was 37.24 ± 9.34 hours. The mean hospital stay in the early group was statistically lower as compared to delayed group, p-value <0.001.The mean time to bowel sound in the early group was statistically lower (15.72 ± 4.67 minutes) as compared to the delayed group (16.84 ± 4.58 minutes), p-value < 0.05. The mean time to Passage of flatus was statistically lower in the early group (24.06 ± 5.60 minutes) as compared to the delayed group (29.66 ± 5.36 minutes), p-value < 0.001. In the early feeding group a total of 78(19.5%) cases had abdominal distension and in delayed feeding group 129(32.2%) cases had abdominal distension, with statistically lower abdominal distension in early group, p-value < 0.001.

Table-1: Comparison of Age (years), gestational age, hospital stay (hours), time to bowel sound (minutes), time to Passage of flatus, (minutes) in both study groups

	Groups	Mean	S.D	Minimum	Maximum	t-test	p-value
Age (years)	Early	26.80	5.09	18.00	35.00	1.51	0.131
	Delayed	26.25	5.19	18.00	35.00		
Gestational age (weeks)	Early	38.72	1.06	37.00	40.00	0.99	0.322
	Delayed	38.65	1.01	37.00	40.00		
Hospital stay (hours)	Early	31.82	11.01	14.00	50.00	7.50	<0.001**
	Delayed	37.24	9.34	20.00	50.00		
Time to bowel sound (minutes)	Early	15.72	4.67	10.00	25.00	3.42	0.001**
	Delayed	16.84	4.58	10.00	28.00		
Time to passage of flatus (minutes)	Early	24.06	5.60	12.00	35.00	-14.42	<0.001**
	Delayed	29.66	5.36	12.00	36.00		

**. Highly significant

Table-2: Comparison of Abdominal distension in both study groups

		Study groups		Total
		Early	Delayed	
Abdominal distension	***Yes***	78(19.5%)	129(32.2%)	207(25.9%)
	No	322(80.5%)	271(67.8%)	593(74.1%)
Total		400(100.0%)	400(100.0%)	800(100.0%)

Chi-square 16.951, p-value <0.001

DISCUSSION

Conventionally, the utilization of two to three liters of I.V fluid in the 1st (12 to 24 h) was the usual practice of feeding after CS. Oral food was only permitted after 24 hs if there is no postoperative nausea in the presence of bowel movement on examination. After Passage of flatus, regular food is started in order to prevent gastric problems like abdominal distention, nausea or vomiting. Currently, many clinicians recommend that in case of uncomplicated CS, oral fluids can be initiated after the patient has recovered from anesthesia and solid food can be started as soon as the patient experiences thirst unlike the conventional routine [12].

Belching was reported in a study after resuming early oral fluid and early feeding after surgery. It relieved abdominal distension as well as flatulence because of upward gas movement via the esophagus and stomach and ultimately gas elimination from mouth. The frequency of flatulence tends to decrease in the patients who start early solid food that further fasten the peristaltic activity and averts the gaseous retention in the colon [13]. Early intake of oral fluid showed less frequency of flatulence on the 2nd and 3rd postop day according to a study conducted by

ShamaeianRazavi[14]. On the other hand, many trials also revealed that early OF possessed no significant effect on abdominal distension and flatulence [15]. In fact a study conducted by Teoh et al. reported that early intake of solid food could enhance the chances of nausea and vomiting after surgery [16].

In the current study the mean hospital stay in the early feeding group was 31.82±11.01 h and in the delayed feeding group was 37.24±9.34 h. The mean hospital stay in the early group was statistically lower as compared to delayed group, p-value < 0.001. Another examination revealed no difference in the results as we found, i.e. average duration of stay in the hospital in the delayed OF group was 48.7±6.3 h and in the early group it was 48.3±3.6 h, p-value > 0.05. [11] Comparable results were demonstrated by Izbizky G; duration of hospitalization was 2.4 ± 0.5 and 2.5 ± 0.5 , in early and delayed feeders, respectively, (p-value > 0.05). [10] We found less mean hospital stay in early feeding methods.

In the current study the mean time to bowel sound in the early group was statistically lower (15.72 ± 4.67 minutes) as compared to the delayed group (16.84 ± 4.58 minutes), p-value < 0.05. In another study bowel movement time was seen to be increased among in delayed group 11.7±5 whereas it was reported as 7.8±2.9 hrs in early feeders, p-value <0.0001. [11]Moreover studies (as we found) are debatable regarding their result among early and delayed gatherings such as 12±11 early and 15±11 in delayed groups, and p-value >0.050. [10]

In the current study the average time of flatus passage was statistically lower in early group (24.06 ± 5.60 minutes) as compared to the delayed group (29.66 ± 5.36 minutes), p-value

<0.001. Moreover passing of flatus was also the same in groups, 13.6±6.8 hrs in early OF and 15.4±5.8 hrs in delayed OF, p-value > 0.05. [11] The average flatus passing timing was almost similar in both groups such as; 22 ± 14 and 23 ±12 in the early and delayed feeding group, respectively, p-value > 0.05. [10] The results in terms of duration of hospitalization as well as and flatus passing timing was comparable in two studies.

In the current study in the early feeding group a total of 78(19.5%) cases had abdominal distension and in delayed feeding group 129(32.2%) cases had abdominal distension, with statistically lower abdominal distension in early group, p-value < 0.001. Related outcomes were reported by Izbizky G in their study with respect to abdominal distension such as it was seen in 16 (17%) among delayed feeders whereas in 16(16%) among early feeders, p-value > 0.05.[10] The findings are not in agreement to our statistics On the other hand similar results (as we found) about abdominal distension were reported by Jalilian N, i.e. 20% in delayed and 4.28% in early group, p-value < 0.05.[11]

Recently a comparative study was performed to find out the outcome of early OF regarding its tolerability, acceptance, side effects and complications. The study group showed shorter time of flatus and bowel sounds (34.5 and 21.6h, respectively) in comparison with control group (49.2, and 31.7h, respectively). The study reported no other adverse effect and complications of early OF. Thus, delayed OF showed no significant superiority over early OF and early OF must be started as it has no adverse effects. The benefits such as quick recovery after surgery and greater patient contentment can be expected from early OF [17].

Guo et al. performed a study in 2015, on early OF and delayed OF results after CS regarding their efficacy and safety. The study's primary results have demonstrated that through 20 reports, total 4584 females undergoing CS were included. The rates of complications after surgery and the satisfaction of the patient were similar in both groups. Early OF group showed fast recovery of bowel sound and movement, flatus, and regular diet (P <0.001). Moreover, time for I.V fluids, duration of hospitalization, and time to 1st breastfeeding were shorted in the early OF group (P< 0.001 for all). Thus, the study has concluded that delayed OF is not superior than early OF after CS as early OF promised many short-term advantages [18].

In 2015, another comparative study was designed which evaluated the results of early and delayed OF after CS. Delayed OF (24 hours) was initiated in Group A while early OF (6 hours) in Group B. The bowel movements were recovered in group B in 6.13 this time was 9.29 hrs in group A. Similarly, in group B, time to regular diet was 11.39hrs however in group A, it was 18.06 hrs. Average duration for IV fluid was 22.33 hrs for group A while it was 7.86 hrs for group B. The length of hospital stay as well as gastric complications after surgery were comparable in both groups. Hence, recovery time for bowel movements, regular diet, and I.V fluid time were lesser in the early group (6 h) in comparison with delayed group (24 h). Gastrointestinal problems after surgery were not different in both gatherings [19]. These findings are similar to our findings too.

Moreover a local comparative study was performed in which early and delayed methods of feeding were compared after CS. Females were randomly allocated in 2 groups as per receiving early oral food (after 2 hrs) or delayed (after 18 hrs). The study measured mother ambulatory recovery, her satisfaction, gastric recovery, and duration of stay in the hospital. The result has

shown that in the final examination total, 1174 females (n= 587 in each group) were recruited. There was no considerable difference in gastric issues among 2 gatherings. Early OF groups experienced lesser hunger or thirst and their satisfaction was also high; P<0.05). About 53.8% of females showed ambulatory function in less than 15 hrs after surgery in early feeding gathering whereas this percentage was only 27.9% in the delayed group. Other complications such as wound infection, requirement of readmission, or febrile morbidity, were also not so noteworthy. Thus, it can be concluded that early OF after CS had good results in terms of ambulatory recovery, mother satisfaction, and duration of stay in the hospital, without any short or long term complication which make this regime fairly economical [20].

Similarly another research was done in which unfavorable gastric effects after CS were compared among females who had their 1st food early and who had 1st food delayed (8 h vs 24 h). Randomization of 151 pregnant females into 2 groups was done who had no surgical, medical, or gyne related issues, 75 in early while and 76 in the delayed group in the year 2003. The result has shown that demographic variations were same yet the blood loss during surgery was significantly different together with utilization of Foley catheter, IV fluid resuscitation and timing of 1st sound of bowel. These factors were observed to be decreased among the earlygroup, however no substantial differences were reported regarding gastric issues after operation. So, concluded by this study, there were no unfavorable gastric effects after CS were seen in early groups; 8 h when contrasted with delayed groups;24 h [21].

CONCLUSION

Through the findings of this study it was found that the frequency of abdominal distension, time to Passage of flatus, time interval to bowel sounds and Hospital stay was less in the early feeding group as compared to delayed groups. So, in future by introducing early feeding we may reduce the hospital stay can gain more females' satisfaction.

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