Early versus Late Oral Hydration after Cesarean Section; A Randomized Controlled Trial

Thesis

Submitted for Fulfillment of master degree
in Obstetrics and Gynecology

By

Mai Abdelnaser Abdelzaher
M.B.B.Ch. 2009

Under Supervision of

Prof. Karam Mohamed Bayoumy

Professor of Gynaecology and Obstetrics
Faculty of Medicine, Ain Shams University

Dr.Amr Helmy Yehia

Lecturer in Gynecology and Obstetrics Department
Faculty of Medicine, Ain Shams University

Faculty of medicine
Ain Shams University
2016

سورة البقرة الآية: ٣٢

Acknowledgments

First and foremost, I feel always indebted to **Allah,** *the Most Beneficent and Merciful.*

I would like to express my sincere appreciation and deepest gratitude to **Professor/ Karam Mohamed Bavoumy,** *Professor of Gynaecology and obstetrics Faculty of Medicine ,Ain Shams University, for his valuable help, kind supervision and continuous encouragement. Without his care, this work could never be within hands.*

I am also grateful and I would like to express my endless gratitude and appreciation to **Dr. Amr Helmy Yehia,** *lecturer in Gynaecology and obstetrics Faculty of Medicine ,Ain Shams University, for his valuable advices and kind supervision. His honest assistance and patience make me truly indebted to him.*

I would like to express my gratitude and appreciation to **Professor Kareem Wahba,** *Professor of Gynaecology and obstetrics Faculty of Medicine, ,Ain Shams University, for his valuable help and great effort to finish this work.*

Finally,1 would also seize the opportunity to dedicate this thesis to all my family members, my dear parents, my husband ,my brothers, my beloved son for their valuable support.

Candidate

Mai Abdelnaser Abdelzaher

List of Contents

List of Abbreviations

Abbr.	Full-term
AAGBI	: Association of Anaesthetists of Great Britain and Ireland
ACOG	: American College of Obstetricians and Gynecologists
BMI	: Body mass index
C.S	: Caesarean section
CNS	: Central nervous system
DM	: Diabetes mellitus
ENS	: Enteric nervous system
ER	: Enhanced recovery
ERAS	: Enhanced recovery after Surgery
GIT	: Gastrointestinal tract.
HES	: Hospital Episode Statistic
HTN	: Hypertension
I.V	: Intravenous
LSCS	: Lower segment Cesarean section
MMC	: Migrating motor complex
NHS	: National health service
NICE	: National Institute for Health and Clinical Excellence
NO	: Nitric oxide
NSAIDs	: Non-Steroidal Anti Inflammatory Drugs
POI	: Postoperative ileus
RCOG	: Royal College of Obstetricians and Gynecologists

List of Tables

List of Figures

Early versus late oral hydration after Cesarean Section; A Randomized Controlled Trial

A Protocol for Thesis submitted for
Fulfillment of master degree
In Obstetrics and Gynecology

By

Mai Abdelnaser Abdelzaher

M.B.B.Ch. 2009

Under supervision of

Prof. Karam Mohamed Bayoumy

Professor of Gynaecology and Obstetrics
Faculty of Medicine, Ain Shams University

Dr.Amr Helmy Yehia

Lecturer in Gynecology and Obstetrics
Faculty of Medicine, Ain Shams University

Faculty of Medicine
Ain Shams University

2014

Introduction

Caesarean delivery is defined as the birth of a fetus through incisions in the abdominal wall (laparotomy) and the uterine wall (hysterotomy) ***(Pieter, 2009),*** it is the most common major hospital surgical procedure performed in the industrialised world, accounting for more than one-fourth of all deliveries in the USA in 2003 ***(Hamilton et al., 2003),*** its rates are around 25–40% in some of the large Asian countries such as China, India, South Korea and Thailand ***(Kambo et al., 2002).*** Even higher rates have been reported in Latin America. An increasing number of women are, therefore, being exposed to this procedure ***(Villar et al., 2006).***

Traditionally, women who had a caesarean section had solid food withheld for the first 24 hours in the belief that this would prevent gastrointestinal complications. However, several clinical trials and systematic reviews have shown that early feeding is as safe as the traditional progressive approach. Moreover, some additional benefits have been reported such as a more rapid return of bowel sounds and regular oral diet and a shorter hospital stay ***(Patolia et al., 2001).***

Patients who were fed 6-8 hours after cesarean deliveries had a shorter time interval from surgery to bowel movement, a shorter duration of intravenous fluid infusion, and shorter hospital stays. However, some of these studies

did not have an adequate sample size to definitively assess safety concerns. Most of these recent studies had many confounding factors such as emergency cases, adhesions, blood losses, operative findings, and extended operative time. There are many regimens for post cesarean delivery management of postoperative feeding. The objective of this study was to compare the efficacy and side effects of early postoperative feeding versus conventional feeding for patients undergoing cesarean section ***(Kavavissarach & Atthakorn, 2005).***

Kramer et al. (1996) believe that abdominal surgery abolishes normal bowel motility immediately post operatively and the onset of bowel function is influenced by the type of surgery performed; and that there may be many factors contributing to paralytic ileus (decreased or absence of intestinal peristalsis following abdominal surgery characterised by abdominal tenderness and distension, absence of bowel sounds, lack of flatus and by nausea and vomiting) other than early feeding, such as neural and hormonal factors, involvement of the sympathetic and theparasympathetic nervous system, use of narcotics and the type of anaesthetic agents used.

The practice of allowing early oral fluids or food after caesarean section is often based on the assumption that the

bowels are not usually exposed or handled during caesarean section, and one would therefore not expect bowel function to be disturbed (***Mangesi & Hofmeyr, 2002).*** It has been suggested that, even following bowel surgery, bowel sounds change in character, but bowel function continues uninterrupted. One study suggested that perioperative nutritional status is of more importance to wound healing than the overall nutritional status ***(Burrows et al., 1995).***

In spite of these reports, the tradition of withholding or delaying the intake of fluids immediately postoperatively has been practiced without supportive evidence report that gastro-intestinal function returns soon after abdominal surgery ***(Guedj et al., 1991).*** Opponents of this view argue that caesarean section is a major operation with a risk of complications arising from giving oral fluids or food soon after surgery ***(Mangesi & Hofmeyr, 2002).***

According to Bennett 1999(Bennett V& Brown L., 1999) : food after caesarean section must not be allowed until bowel sounds are heard, as the woman is at risk of developing paralytic ileus due to handling of the bowel. They recommend that fluids should be gradually introduced followed by light diet.

Sellers (1993) recommends that for the first 12 to 24 hours, food and fluids should be withheld. After this period,

graded oral fluids can be given until full fluids are tolerated at about the second day post operatively. It is only when bowel sounds are heard and flatus is passed that regular diet can be allowed on about the third postoperative day.

Sweet & Tiran ***(Sweet & Tiran, 1997)*** suggested that fluids can be allowed soon after operation and a light diet started when the woman feels ready to eat. It is only when the surgeon, for one reason or the other, requests that food be withheld until bowel sounds are heard, that the woman may be refused food.

According to Gabbe et al. ***(Gabbe et al., 1996),*** oral fluids are well tolerated the day after surgery, even if the woman has diminished bowel sounds and does not pass flatus. It is only when there have been extensive intra abdominal manipulations or sepsis that oral fluids may be withheld.

Knuppel and Drukker ***(Knuppel & Drukker, 1993),*** recommend that food and fluids be withheld on the day of the operation. Clear fluids can be offered the next day, thereafter full fluids and then a regular diet can be commenced. Alternatively, clear hot liquids can be given to women as early as one and a half hours after general anaesthesia or immediately after caesarean section if a regional block was used. If these fluids are tolerated without difficulty, a regular diet may be offered at the next feeding if the patient desires it.

Early feeding with solid food after laparoscopic surgery has been widely accepted as safe ***(Binderow et al., 1994).***

Also, other studies have suggested that early feeding seems to be well tolerated and even beneficial to patients who have undergone laparotomy and cesarean delivery ***(Bufo et al., 1994).***

When compared with women who were given nothing by mouth for 12 hours after cesarean delivery, those who were fed early with solid food required less injectable narcotic pain medication ***(Burrows et al., 1995).***

Although several investigators have shown that women may tolerate early solid food after cesarean delivery, none have demonstrated an impact on the duration of hospital stay ***(Soriano et al., 1996).***

In 1996, the mean hospital stay for women who underwent cesarean deliveries was 3.1 days ***(Mushinski, 1996).*** Hospital discharge depends primarily on the absence of febrile morbidity and the return of normal bowel function. Traditionally, a patient who has undergone a laparotomy is prescribed a graduated dietary regimen to decrease the likelihood of developing a postoperative ileus. Initially, the patient is given "nothing by mouth" for 12–24 hours,

advanced to a clear liquid diet on postoperative day 1, and then given to a full liquid diet on postoperative day 2. Solid food is prescribed if the patient tolerates the full liquid diet, or passes flatus ***(Horowitz & Rock, 1997) (Cunningham et al., 1998).*** Rarely, when a patient is suspected to have severe ileus or bowel obstruction, dietary modification or abdominal radiographs may be required.

Because most cesarean deliveries are performed under regional anesthesia, require little intestinal manipulation, and involve younger patients, some investigators have suggested that women who have undergone cesarean can safely receive solid food as early as 4–8 hours after surgery ***(Soriano et al., 1996).*** These investigations have not shown that early feeding has impacted the length of the hospital stay.

Low midline skin incision, swab packing during operation or cleaning amniotic fluid or blood in the abdominal cavity and closure of the peritoneum may also affect the return of bowel function (Miedema B & Johnson J., 2003). All these factors need to be considered when determining the applicability of the findings of the trials on 'early' versus 'delayed' initiation of fluids and solid food.

There is a need for well-designed randomized trials to compare early versus delayed initiation of oral fluids and/or intake food after caesarean section, regardless of type of