Randomized Clinical trial Comparing Postoperative Outcomes of early versus late oral Feeding after Cesarean Section

Thesis

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List of Abbreviations

Abbrev.	Full term
ACOG	: American College of Obstetricians and Gynecologists
BMI	: Body mass index
CI	: Confidence interval
CMC	: Carboxymethylcellulose
CS	: Cesarean section
CSE	: Combined spinal–epidural anesthesia
CT	: Computed tomography
CTG	: cardiotocography
DKA	: Diabetic ketoacidosis
EDA	: Epidural anesthesia
ESA	: European Society of Anaesthesiology
FHR	: Fetal heart rate
HA	: Hyaluronate
HIV	: Human immunodeficiency virus
IL	: Interleukin
IONV	: Intra operative nausea & vomiting
LOS	: Length of hospital stay
MDCT	: Multidetector CT
MRI	: Magnetic resonance imaging
NICE	: national institute for health care ad excellence
NSAIDs	: Non-steroidal anti-inflammatory drugs

POI : Postoperative ileus

PONV : postoperative nausea & vomiting

RCOG : Royal College of Obstetricians and Gynecologists

RR : Relative risk

SD : Standard deviation

SPA : Spinal anesthesia

TNF : Necrosis factor alpha

VBAC : Vaginal birth after cesarean

WHO : World Health Organization

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Introduction

Cesarean section is one of the commonly performed surgical procedures in obstetrics and is certainly one of the oldest operations in surgery. One of the most dramatic features of modern obstetrics is the increase in the cesarean section rate ***(Mittal et al., 2014).***

In recent years, the cesarean section rate has increased in different parts of the world, both in developed and developing countries. There is an increase in trend in both primary and repeat cesarean rates. The reasons for the increase are multifaceted. Fetal distress, especially its detection by continuous electronic fetal monitoring, more liberal use of cesarean section for breech presentation, abdominal delivery of growth-retarded infant, delayed childbearing, increasing maternal body mass, multiple gestation, prematurity and improved safety of cesarean section are commonly cited causes ***(Mittal et al., 2014).***

Traditionally, patients are not given fluid or food until clinical signs of normal intestinal function return, which is most commonly the presence of bowel sound, a passing of flatus or stool and the feeling of hunger. The rationale of this practice is to prevent postoperative nausea and vomiting, distention and other complications. However, withholding oral feedings may lead to intestinal ileus, which can prolong

the length of hospital stay (LOS) and increase the financial burden ***(Huang et al., 2015).***

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 1995). In spite of these reports, the tradition of withholding or delaying the intake of fluids immediately postoperatively has been practiced without supportive evidence (Guedj 1991). Ingam et al and Ryan et al., quoted in Guedj 1991, report that gastro-intestinal function returns soon after abdominal surgery ***(Mangesi and Hofmeyr, 2002).***

With changing surgical attitudes, however, the benefits of early oral feeding, especially after cesarean section, are being reconsidered. Early feeding can reduce the rate of body protein depletion, improve wound healing, impact positively on psychological status and reduce the incidence of nosocomial infections; length of hospital stay and treatment costs ***(Gocmen et al., 2002).***

Because the majority of cesarean surgery is performed under regional anesthesia with low intestinal manipulation and patients are mostly young, some researchers believe that these women can receive their usual diet as early as 4–8 h

after surgery. There are even some studies which suggest that oral intake can be commenced within the first few hours after cesarean section ***(Jalilian and Ghadami, 2014).***

One of the main concerns of any surgeon is the earlier return of the patients to normal feeding habits after caesarian section. This study was designed to evaluate the effect of early versus delayed postcaesarean feeding on gastrointestinal function and patient postoperative satisfaction after discharge.

Aim of the Work

This study aims to compare between the outcomes of early and late oral feeding after cesarean section under regional anesthesia.

Research hypothesis:

Women who underwent cesarean births under regional anesthesia (spinal-epidural anesthesia) and started early oral feeding may have similar post cesarean outcomes like those who receive routine hospital care for the same type of anesthesia.

Research question:

In women undergoing elective CS under regional anesthesia, dose early oral feeding have similar outcome like late feeding?

Chapter One
Cesarean Delivery

Introduction

Cesarean delivery is defined as the birth of a fetus through incisions in the abdominal wall (laparotomy) and the uterine wall (hysterotomy). This definition does not include removal of the fetus from the abdominal cavity in the case of rupture of the uterus or in the case of an abdominal pregnancy ***(Cunningham, 2010)***.

Historical Background

The origin of the term *cesarean* is obscure and three principal explanations have been suggested.

In the first, according to legend, Julius Caesar was born in this manner, with the result that the procedure became known as the Caesarean operation. Several circumstances weaken this explanation. First, the mother of Julius Caesar lived for many years after his birth in 100 BC and as late as the 17th century, the operation was almost invariably fatal. Second, the operation, whether performed on the living or the dead, is not mentioned by any medical writer before the Middle Ages. Historical details of the origin of the family name Caesar are found in the monograph by Pickrell (1935) ***(Cunningham, 2010)***.

The second explanation is that the name of the operation is derived from a Roman law, supposedly created in the 8th century BC by Numa Pompilius, ordering that the procedure be performed upon women dying in the last few weeks of pregnancy in the hope of saving the child. This *lex regia*—king's rule or law—later became the *lex caesarea* under the emperors and the operation itself became known as the caesarean operation. The German term *Kaiserschnitt*—Kaiser cut—reflects this derivation ***(Cunningham, 2010).***

The third explanation is that the word *caesarean* was derived sometime in the Middle Ages from the Latin verb *caedere, to cut.* This explanation seems most logical, but exactly when it was first applied to the operation is uncertain. Because *section* is derived from the Latin verb *seco*, which also means *cut,* the term *caesarean section* seems tautological—thus *cesarean delivery* is used. In the United States, the *ae* in the first syllable of *caesarean* is replaced with the letter *e*. In the United Kingdom, Australia and most commonwealth nations, the *ae* is retained ***(Cunningham, 2010).***

Incidence:

Around the world, a rise has been seen in cesarean rates in developed and emerging countries. In Sub-Saharan regions the cesarean rate is only 3%; in Central America it is 31% and in North America it is 24%. The rate in Europe is around 25%

of all deliveries, while in the USA the rate is estimated at 32.2%. In the year 2000 in the European Union, 221 cesarean sections were per - formed per 1000 live births; in 2011 the number had risen to 268 per 1000 live births. In Europe, births by cesarean section went up from 172.49 per 1000 live births in 1997 to 253.23 per 1000 live births in 2010. In the USA, mortality rates have now gone up from 1:10 000 to 1.4:10 000 births. Interestingly, it turns out that a cesarean rate of more than 13% to 15% (as recommended by the WHO) is not accompanied by better outcomes for fetus and mother. In Germany, the percentage of deliveries by cesarean more than doubled between 1991 (15.3%) and 2012 (31.7%). A slight fall by 0.4% was seen in comparison to the year 2011. The number of other obstetric procedures also decreased slightly. The ventouse was used in 5.7% of deliveries, while the use of forceps declined to 0.5% ***(Ioannis and Klaus, 2015).***

Cesarean delivery in the United States

From 1970 to 2010, the cesarean delivery rate in the United States rose from 4.5 percent of all deliveries to 32.8 percent. In 2010, this rate actually declined from a peak of 32.9 percent in 2009 ***(Martin, 2012).***

The other, albeit brief, decline was between 1989 and 1996.This more profound decrease was largely due to a significantly increased rate of *vaginal birth after cesarean (VBAC)*