Trend and Determinants of Cesarean Section at Ain Shams Maternity Hospital (2011-2015)

Thesis

Submitted for Partial Fulfillment of Master Degree in Family medicine

By

Sara Hisham Abd El-khalek

(M.B.B.Ch.).

Under supervision of

Prof.Dr. Yasser Mohamed Abou-Taleb

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

Dr. Kareem Mohamed Labib

Lecturer of Obstetrics and Gynaecology
Faculty of Medicine - Ain Shams University

Dr. Ayat Farouk Mohamed

Lecturer in department of Community, Environmental and Occupational Medicine
Faculty of Medicine - Ain Shams University

Faculty of Medicine
Ain Shams University
2017

Acknowledgement

First of all, all praise and gratitude is due to Allah who given me the inspiration, guidance and blessing to complete this work, until it has reached its end.

*I would like to express my gratitude to **Dr. Yasser Mohamed Abou-taleb**, Professor of Obstetrics and Gynecology, Faculty of Medicine - Ain Shams University, for his supervision, continuous help, encouragement throughout this work and tremendous effort he has done in the revision of the whole work. It is a great honor to work under his guidance and supervision.*

*I cannot forget the great help of.**DR Diaa Marzouk Abd El-Hamid** Professor of Community, Environmental and Occupational Medicine and Head of Family Medicine Department Faculty of Medicine -Ain Shams University for her continuous support throughout my work and for giving me continuous advices and motivations to complete my work in time.*

*I would like also to express my sincere appreciation and gratitude to **Dr. Kareem Mohamed Labib,** Lecturer of Obstetrics and Gynecology, Faculty of Medicine - Ain Shams University, for his continuous directions, supervision, encouragement and great support throughout the whole work.*

*All my sincere gratitude to **Dr. Ayat Farouk Mohamed**, Lecturer in department of Community, Environmental and Occupational Medicine, Faculty of Medicine - Ain Shams University, for her invaluable efforts, tireless guidance and for her patience and support to get this work into light.*

Finally, I would like to express my deepest thanks to my parents and my husband, whom without their sincere emotional support, pushing me forward this work would not have ever been completed.

To my beloved little kids Ahmed and Mohammed:" GOD Bless You"

Sara Hisham Abd El-khalek

سورة البقرة الآية: ٣٢

List of Contents

Title Page No.

List of Tables

List of Tables

Table No.	Title	Page No.

List of Figures

List of Figures cont…

List of Abbreviations

Abb.	Full term
ACHD	*Adult Congenital Heart Disease*
ACOG	*American College of Obstetricians and Gynecologists*
APGAR	*Appearance, Pulse, Grimace, Activity, and Respiration.*
ART	*Anti-Retroviral Therapy*
AWMF	*Association Of Scientific Medical Societies In Germany*
BMI	*Body Mass Index*
CDMR	*Cesarean Delivery On Maternal Request*
CFMF	*Congenital Fetal Malformation*
CI	*Confidence Interval*
CNGOF	*French College Of Gynecologists And Obstetricians*
CP	*Cerebral Palsy*
CS	*Cesarean Section*
CTG	*Cardiotocography*
DM	*Diabetes Mellitus*
DVT	*Deep Venous Thrombosis*
EBM	*Evidence-Based Medicine*
EDHS	*Egyptian Demographic Health Survey*
ERCD	*Elective Repeat Cesarean Delivery*
GOPP	*General Organization for Physical Planning*
GW	*Gestational Weeks*
HELLP	*Hemolysis, Elevated Liver enzymes, and Low Platelet count.*
HIS	*Health Issue Survey*
HIV	*Human Immunodeficiency Virus*
HSV	*Herpes Simplex Virus*
HTN	*Hypertension*
ICU	*Intensive Care Unit*
IUGR	*Intra Uterine Growth Retardation*
MMR	*Maternal Mortality Rate*

List of Abbreviations cont…

Abb.	Full term
MRI	*Magnetic Resonance Imaging*
NICU	*Neonatal Intensive Care Unit*
NVSR	*National Vital Statistics Report*
NYHA	*New York Heart Association*
RCOG	*Royal College Of Obstetrician And Gynecologist*
RCS	*Repeat Cesarean Section*
SADHS	*South Africa Demographic Health Survey*
SD	*Standard Deviation*
SLE	*systemic lupus erythematosis*
SMFM	*Society for Maternal-Fetal Medicine*
TOLAC	*Trial Of Labor After Cs*
UTI	*Urinary tract infection*
VBAC	*Vaginal Births After Cesarean*
VD	*Vaginal Delivery*
WHO	*World Health Organization*
WHR	*World Health Report*

ABSTRACT

Majority of pregnant females (93.2%) had single pregnancy, while twins and triplets represented 6.2% and 0.6% respectively.

As regards birth outcome; majority of newborns 89.8% were alive and well. About two thirds of them 66.6% had normal weight and 96.6% of them with normal 5 min APGAR score.

It is highly recommended that:

Family physicians adhere to the definition of active labor before admitting low risk mothers to hospital, they also should explain overall risks and benefits of CS compared with vaginal birth to pregnant females.

Key words: *Repeat Cesarean Section- Urinary tract infection- Cardiotocography- Diabetes Mellitus*

INTRODUCTION

Cesarean section (CS) was introduced in obstetric practice as a life saving operation both for the mother and the baby ***(Althabe and Belizán, 2006)***. Recently the cesarean section rate has increased in different parts of the world, both in developed and developing countries for a variety of reasons ***(Ye et al., 2014).*** When medically justified, caesarean section can effectively prevent maternal and perinatal mortality and morbidity ***(Hannah et al., 2000).*** There is no evidence showing the benefits of caesarean delivery for women or infants who do not require the procedure ***(Lumbiganon et al., 2007).*** As with any surgery, caesarean sections are associated with short and long term complications which can extend many years beyond the current delivery and affect the health of the woman, her fetus, and future pregnancies ***(Villar et al., 2007).*** These complications are higher in women with limited access to comprehensive obstetric care. This dramatic increase raises several concerns of medical, ethical an economic importance ***(Vogel et al., 2015).***

In a statement issued on CS in April 2015, the WHO said: "Since 1985, the international healthcare community has considered the ideal rate for Caesarean sections to be between 10-15 %, Two new studies show that when CS rates rise towards 10 % across a population, the number of maternal and newborn deaths decreases. When the rate goes above 10%, there is no

evidence that mortality rates improve" ***(WHO, Count-down to 2015 decade report, 2010)***.

In recent years the rate has increased worldwide. In a study performed in United States using National Vital Statistics Reports shows a level of 32.7% CS rates in United States This report presents preliminary data for 2013 on births in the United States ***(Hamilton et al., 2015).***

In South Africa the 2003 South Africa Demographic Health Survey (SADHS) collected information on several other aspects relating to the delivery of babies, such as whether the delivery was by caesarean section. The data show that 21% of women in the survey delivered by caesarean section ***(Department of Health, Medical Research Council, SADHS, 2007).***

The 2008 Egyptian Demographic Health Survey (EDHS) obtained information on the frequency of caesarean sections. More than 25% o f deliveries in the five-year period before the 2008 EDHS survey were by caesarean section. Women delivering in a private health facilities were slightly more likely than women delivering in a government facility to have a Caesarean delivery. 37% percent of urban births were Caesarean deliveries compared to 22 % of rural births ***(El-Zanaty et al., 2009).***

The 2014 Health Issue survey (HIS) also obtained information on the frequency of caesarean sections shows that

more than 50% of deliveries in the five-year period before the survey were by caesarean section ***(El-Zanaty et al., 2015).***

One study of Cesarean section rates among hospitals showing that between 2005 to 2010 in a Tanzanian referral hospital, the cesarean section rate ranged from 29.9% to 35.5%. The leading indication was previous cesarean section ***(Ayaba et al., 2012).***

Another study performed in Obstetrics and Gynecology Unit III, Civil Hospital and Dow University of Health Sciences Karachi, shows that from January 2009 to December 2009 out of 2784 total deliveries, 778 (27.94%). women underwent CS ***(Karim et al., 2011).***

At EL- Mansoura University Hospital, In Egypt, retrospective study collected data on caesarean delivery rates and indications from the medical records of 34598 women admitted to both emergency and high risk obstetric units over a 5-year period (January 2006-December 2010) shows The overall rate of caesarean delivery was 47.25%. The annual rate of caesarean delivery increased from 42.65% in 2006 to 55.33 % in 2010.The most common causes were repeat caesarean (35.78%) ***(Helal et al., 2013).***

Another study in a Five Years Period (2008 -2012) at Department of Obstetrics and Gynecology, Faculty of Medicine, Cairo University shows that Cesarean sections were performed in 38.84% of deliveries in 2008, 37.88% in 2009, 39.08% in 2010,

37.72% in 2011 and 41.17% in 2012. Repeat cesarean section (RCS) was the main indication ***(El-Khayat et al., 2013).***

Though caesarean section is a fairly safe surgical procedure, several studies have reported a statistically significant increase in the risk of acute and chronic complications ***(Hager et al., 2004),*** as surgical site infection and injury to nearby organs when compared with attended vaginal delivery ***(Souza et al., 2010).***

Cesarean delivery on maternal request (CDMR) an elective cesarean in the absence of any medical or obstetric indication, is the most frequently cited reason for the increasing incidence of cesarean sections may be due to psychosocial factors such as anxiety about the delivery ***(ACOG, cesarean delivery on maternal request, 2007).***

Nonmedical indications of CS carry risks for the woman, particularly when conducted in less than optimal conditions. Exposing women unnecessarily to an increased risk of many complications is medically and ethically unacceptable ***(Chauhan et al., 2003).***

Unnecessary caesarean deliveries impose unjustified costs on the part of the patient and waste the medical and economic resources on the part of the health system ***(Bost, 2003).***

IN the World Health Report (2010) about The Global Numbers and Costs of Additionally Needed and Unnecessary