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Review Article

**AN INDICATION OF CAESAREAN SECTION**

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**Abstract:**

**Introduction:** Cesarean section (C-section) is one major intervention in the field of obstetrics and gynecology to save the lives of many women and infants from pregnancy and childbirth-related complication. Rated of cesarean section have increased all over the world in recent years. Multiple factors have been found to make it more likely that a C-section will be chosen over the normal delivery, but the risks associated are yet to be clarified.

**Aims of study:** The review aims to understand the relative and absolute indication of cesarean section with possible risks include.

**Methodology:** We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 1985, through February 2017. The following search terms were used: C-section, Absolute Indication, Relative Indication, Indication associated with risk factors

**Conclusion:** Due to enormous scientific progress, social and cultural changes and certain legal changed have led to a fundamental change in attitude to C-section among patients and doctors. The general agreement of indications for C-section has also changed in many countries, including factors such as anxiety about delivery, or even mother's wish to proceed to C-section in the absence of any medical indication. Nonetheless, the reasons for the increasingly liberal attitude towards cesarean section are diverse and not always discernable.

**Keywords:** C-section, Absolute Indication, Relative Indication, Indication associated with risk factors.

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**INTRODUCTION:**

Cesarean delivery is defined as the delivery of the fetus through a surgical incision made through the abdominal wall (laparotomy) and the uterine wall (hysterotomy). Multiple factors have been under consideration as a possible influence on the rising cesarean rate. The risk profile is changing increasingly among older primipara and is often known as the common reason for the rise in C-section deliveries. [1,2]

**METHODOLOGY:****• Data Sources and Search terms**

We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 1985, through February 2017. The following search terms were used: C-section, Absolute Indication, Relative Indication, Indication associated with risk factors

**• Data Extraction**

Two reviewers have independently reviewed the studies, abstracted data, and disagreements were resolved by consensus. Studies were evaluated for quality and a review protocol was followed throughout.

The study was approved by the ethical board of King Abdulaziz University Hospital

**Incidence**

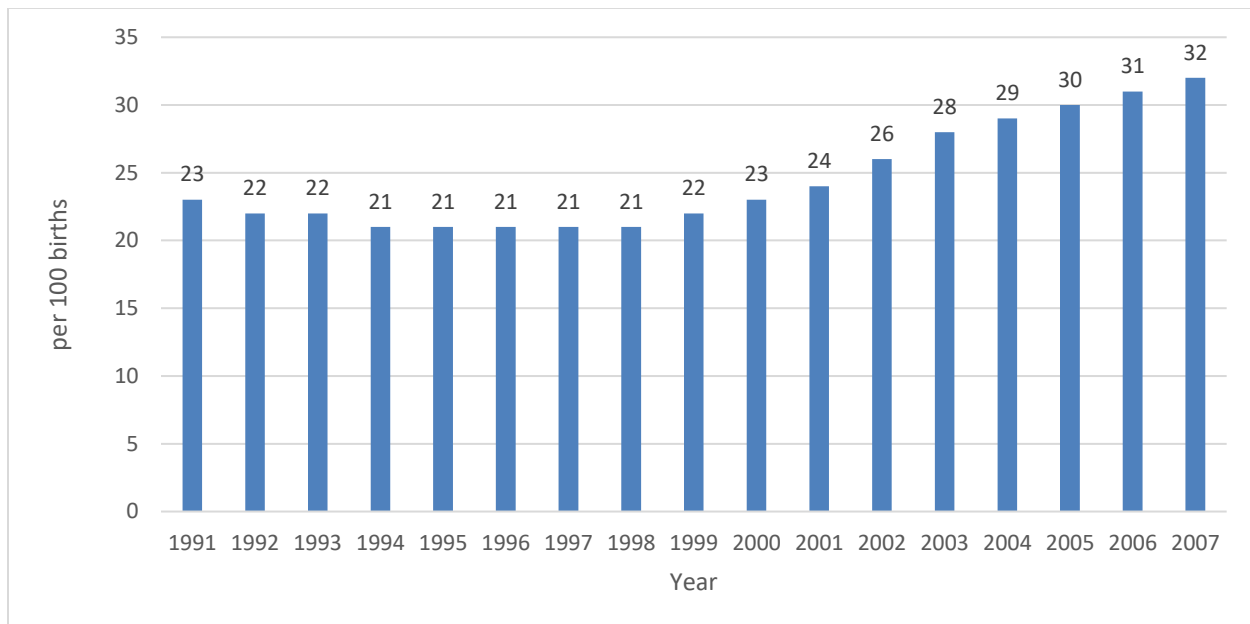
A significant rise in c-section is seen developed and emerging countries.

Following are the c-section rate in different regions: [3]

- Subsaharan region- 3%
- USA-32.2%
  - Central America-31%
  - North America- 24%
- Europe-25%

The c-section delivery rate in the United States was 4.5% in 1965. According to a survey (National Hospital Discharge Survey), the C-section rate rose from 5.5% in 1970 to 24.1% in 1986. Less than 10% of mothers undergone vaginal birth after a prior cesarean, on average a women spent 5 days in the hospital for cesarean delivery while only 2.6 days for vaginal delivery.

Thus it was predicted that if the age-specific cesarean rated continued at a steady pattern of increase observed since 1970, 40% of births would be by c-section in the year 2000. An increment of cesarean birth from 20.7% in 1996 to 32.2% in 2014 in the United States was reported by the National Center for Health Statistics.[4,5] Cesarean rates increased from 1971 to 2007 for women of all ages, races and gestational ages in the United States are given below:



**Fig 1:** Cesarean delivery rates in the United States from 1991 to 2007 [4,5]

**Indication:**

The decision whether to perform cesarean section is based on a view of what is best for or may save the lives of mother and infant. Therefore indications are broadly divided into absolute and relative indication. Elective cesarean section is performed solely at mother's wish, without any specific medical indication and is considered a separate indication. C-

section mainly revolved around the validity of medical indication [6,7], especially in the existing medicolegal background. Absolute indication accounts for less than 10% of all deliveries whereas most of the c-section is performed for relative indication. The decision is dependent on risk assessment, extensive discussion with physicians, midwives involved, mother and her family. [8]

**Absolute Indication:**

<b>Absolute Disproportion:</b>	Small maternal pelvis, making vaginal birth impossible.
<b>Chorioamnionitis (amniotic infection syndrome):</b>	Infection of the placenta and possibly of the fetus, requiring immediate delivery.
<b>Maternal pelvic deformity:</b>	Anatomical malformation, making vaginal birth impossible.
<b>Eclampsia and HELLP syndrome:</b>	A life-threatening complication of pregnancy, usually leading to cesarean delivery.
<b>Fetal asphyxia or Fetal acidosis:</b>	Life-threatening situations for the fetus that can lead to fetal hypoxia
<b>Umbilical cord prolapses:</b>	Prolapse of umbilical cord between the head of the fetus and vaginal opening, which can lead to fetal asphyxia.
<b>Abnormal lie and presentation:</b>	The anomaly of the fetal position that makes vaginal delivery impossible.
<b>Uterine Rupture:</b>	The acute situation is threatening the life of both mother and fetus, requiring immediate delivery by cesarean section.
<b>Placenta previa:</b>	The acute situation is threatening the life of both mother and fetus, requiring immediate delivery by cesarean section.

**Table 1:** Absolute indications for cesarean section [7]**Relative Indication:**

<b>Pathological Cardiotocography (CTG):</b>	May indicate acute hypoxia or fetal asphyxia. If fetal acidosis occurs, the birth should be completed either as an instrumental delivery (suction and forceps) or by cesarean section.
<b>Failure to progress in labor (prolonged labor, secondary arrested):</b>	Delayed delivery or cessation of labor can result in an adverse outcome for the fetus or newborn.
<b>Precious cesarean section:</b>	It is widely assumed that having had one cesarean section makes it impossible to have a vaginal delivery in subsequent pregnancies.

**Table 2:** Relative inductions for cesarean section [7]

### Risk Profile of Mother

One of the important factors contributing to the rise in cesarean section is changes in maternal risk profile, but the data remains conflicting. [1,2]

### Obesity and Diabetes Mellitus

Certain pre-existing disease in mother is a possible risk factor and predisposes mother for a necessary cesarean section delivery. One of the common diseases is diabetes mellitus or gestational diabetes. If it remained untreated, then it may result in the birth of children with birth weight of over 4000g. Since the prevalence of obesity is continually increasing, it's likely that the number of pregnant women has gestational diabetes. Moreover, obesity and overweight are also associated with other risk factors such as hypertension. Fetal macrosomia is regarded as a relative indication; this factor could be affecting the rate of cesarean section deliveries. [9-11]

### Increased Maternal Age

The increased maternal age has a substantial role in c-section deliveries. Nearly a decade back, pregnancy in a woman aged above 35 years has been considered high-risk pregnancy. The percentage of women giving birth over the age of 35 is now 22%. With the increase in maternal age, the risk of fetal congenital malformations, hypertension and even diabetes mellitus increases. Age itself is not an indication of the c-section delivery, but the occurrence related to specific risks related to increased maternal age may indicate cesarean section. [12,13]

### Fertility Treatment.

Assisted reproductive interventions are much-discussed the reason for the increase in c-section, leading to multifetal pregnancy. Reproductive intervention in themselves leads to an increased rate of cesarean section. [14,15]

### Previous Pregnancy

A previous cesarean section is not a necessary indication of c-section delivery in subsequent pregnancies, the sense of security to mother by first c-section is usually responsible for repeat cesarean deliveries. One review concluded that with vaginal birth after previous c-section delivery possess the risk of rare but serious adverse outcomes including an increased rate of perinatal death and hypoxic brain damage, although the risks with repeat c-section are more frequent but less serious such as increased rate of children with impaired respiratory adaptation. [8,16]

### Caesarean Delivery on Maternal Request

Cesarean delivery on maternal request (CDMR) – is an elective cesarean done in the absence of any medical or obstetric contraindication for attempting vaginal delivery. Recently there has been an increment in a c-section delivery choice of the mother over vaginal delivery by certain advantaged as follow: [17-19]

- C-section once had the reputation of protecting against urinary incontinence. However, studies remain controversial on this and at present elective cesarean is not recommended for this indication
- Genital prolapsed are more common in vaginal delivery than c-section
- 4% of women developed fecal incontinence after vaginal delivery which has not been observed after c-section.

### Tocophobia and Anxiety States

“Tocophobia” is a newly coined term used in Anglo-American countries to describe strong fear of spontaneous childbirth and is the most frequent reason of elective cesarean. The incidence of this condition among women is 6-10%. In nulliparous women, tocophobia alone was the reason for elective cesarean while in multiparous women other factors also contributed to CDMR over a vaginal instrument delivery. [20]

There are systematic psychosocial differences between women who request c-section and those wishing for vaginal delivery. Moreover, apart from a fear of giving birth vaginally, there is also a numerous other factor indicating cesarean section such as fear complication for the child, previous traumatic birth, depression, abuse, and other psychosomatic/psychiatric reasons. [21-23]

There is a marked decrease in some children born per women, for some patient the risk of perinatal mortality or intrapartum fetal asphyxia is too high. Fear of lack of confidence, lack of support in the ability to make it through vaginal delivery, unresolved psychosomatic or sexual conflict, fear of losing control play a major role and reinforce the decision of elective cesarean delivery. [21-23]

### CONCLUSION:

Although there are numerous scientific progress and cultural and social changes which led to more acceptance and wide indications of cesarean delivery, there numerous complications associated with it as well. According to a study by WHO c-section had adverse maternal and fetal outcome between 2004-2008 thus a cesarean section should only be

performed when a clear advantage is indicated. However, there is a rise in c-section rate due to more maternal requests. These factors are taken together with the public perception that a cesarean delivery is presently almost risk-free procedure contributing to more rise in C-section procedure.

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