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# **The Rate, Type and Common Indications of Caesarean Section in AL-Nasiriyah city for the Year of (2020)**

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**Supervised By : Dr. Ezdehar Nassif Ali**

**Done by :  
Noorhan Riyadh Abdulhadi  
Zainab Ali Tuaib  
Farah Muwafaq Yossif  
Ahmed shadod Qamar**

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## *Dedicated to*

This research is lovingly dedicated to our respective parents , who have taught us to think, understand and express. I earnestly feel that without their inspiration, guidance and dedication, we would not be able to pass through the tiring process of this years

To our doctors, who without their guidance , support and love , we wouldn't pass this challenging years .and most of all to the Almighty Allah who give us strength and good health while doing this.

## Abstract

**Background:** Rates of cesarean section are a serious concern to both developed and developing countries. The global Caesarean section rate distributed very unevenly and results 15% of abdominal surgeries . The four most common indications for cesarean delivery include: previous Caesarean section, failure to progress during labor, fetal distress and fetal mal-presentation.

**Objective:** The current study attempts to determine the rate of caesarean sections at Bint-Alhuda Teaching Hospital in AL-Nasiriyah city to describe the type, and common indications of cesarean section among the study groups during the year of 2020.

**Methodology:** Retrospective study is conducted at Bint-Alhuda teaching hospital. Data is collected using structured questioners. Then, some statistical metrics are used to analyze the collected data.

**Results:** based on our findings, the rate of cesarean section according to the current study is 37.2%. Among of those procedures 67.97% is emergent and 32% is elective. The main indications for cesarean section based on our investigation are: previous cesarean section 59.1%, malpresentation 11%, and Cephalopelvic disproportion 6.2%.

**Conclusion:** The rate of Caesarean section reported in the current study is very high in comparison with optimal rate for cesarean section stated by world health organisation (WHO). The recommendation is that every efforts should be taken to reduce a such high rate without a negative impact on maternal and fetal wellbeing and safety.

# **Chapter One**

## **Introduction and objective of the study**

## **Introduction**

### **1.1 Historical background**

Cesarean section (C-section) refers to the delivery of a fetus, placenta and membrane through the abdominal and uterine incision after 28 weeks of gestation [1]. The history of C-section dates back as far as Ancient Roman times. Pliny the Elder suggested that Julius Caesar was named after an ancestor who was born by C-section. During this era, the C-section procedure was used to save a baby from the womb of a mother who had died while giving birth. [2].

Ancient Jewish literature from Maimonides suggests that the surgical delivery of a baby was possible without killing the mother, but the surgery was rarely performed. Survival rates would have been low after the procedure, due to the risk of bleeding and infection. Historically, the surgery has always been performed to save the baby rather than the mother [2].

The first recorded case of a mother surviving from a C-section surgery backs to the 1580s in Siegersausen, Switzerland where Jacob Nufer who was a pig gelder is said to have performed the operation on his wife when her labour was not progressing. The mother survived the operation and went on to have five more successful deliveries naturally.[2]

The availability of cadavers during the seventeenth century and the development of anaesthesia in the nineteenth century both helped to enhance medical techniques, including the C-section procedure. Queen Victoria used chloroform as an anesthetic during the birth of Prince Leopoldo in 1853 and this paved the way for its use in obstetrics and C-section. Until the 1870s, the C-section technique remained

relatively crude and the practice did not include surgical suture (stitches) to close the opened womb. In 1876, Eduardo Porro, Professor of Obstetrics at Pavia advocated removal of the womb itself after C-section as a way of controlling bleeding. Following this, the first caesarean hysterectomy was performed in the United States by Richardson in 1881 .[3]

In 1882, however, German obstetricians, Adolf Kehrer and Max Sänger each developed methods for preventing uterine bleeding by using suture to close the wound. Silver wire was developed by J. Marion Sims in the USA as a material that could be used for the suturing technique. Sänger performed his surgeries using the classical vertical incision, while Kehrer advocated the low horizontal incision that is still being practised today. Kehrer suggested that a low incision would aid recovery and reduce the risk of death and his incision method became popular in the early twentieth century.[4]

With the advent of sterilization, hand washing and antibiotics, the surgical outcomes of C-section improved further still. For example, Joseph Lister introduced carbolic spray in 1867 for disinfecting the operative area. In 1926, James Munro Kerr, Professor of Obstetrics at Glasgow re-introduced the transverse incision, which was preferred to the longitudinal incision and in the USA, the procedure was also popularized by Beck and DeLee in the 1920s.[5]

Oxytocin, a natural hormone secreted after birth was synthesized in 1951 at Cornell. The hormone was found to reduce bleeding after C-section and is still used routinely today. Regional anesthesia including spinal and epidural anesthesia have also been developed and become popular methods of relieving pain and improving outcomes after C-section.[6]

## **1.2 The purpose of Cesarean Section**

Cesarean delivery has played a major role in lowering both maternal and perinatal morbidity and mortality rates during the past century. The initial purpose of the surgery is to preserve the life of mothers with obstructed labor, but indications have expanded over the years to include delivery for a variety of more subtle dangers to mothers or fetus. It has been frequently used to to increase safety in babies delivery , Contributing in change the life of many women by using more developed surgical procedures such as , anesthesia tools, more effective antibiotics, and availability of blood transfusions [7].

According to a study reported by the world health organization (WHO), the rate of C-section should not exceed 10% to 15% in any country . In recent years, the rate of caesarean deliveries has been increased dramatically worldwide and many countries are recommended the cesarean as a solution by which the WHO recommended rate is exceed [8].

## **1.3 Indications of CS**

Cesarean deliveries are initially performed to separate the mother and the fetus in an attempt to save their life. They subsequently developed to resolve maternal or fetal complications not amenable to vaginal delivery, either for mechanical limitations or to temporize delivery for maternal or fetal benefit.[9]

**The indications include the following:**

1. Repeat cesarean delivery
2. Obstructive lesions in the lower genital tract, including malignancies, large vulvovaginal condylomas, obstructive vaginal septa, and



leiomyomas of the lower uterine segment that interfere with engagement of the fetal head.

3. Pelvic abnormalities that preclude engagement or interfere with descent of the fetal presentation in labor.
4. Malpresentations
5. Certain congenital malformations or skeletal disorders
6. Prolonged acidemia (hypoxia)
7. Antepartum hemorrhage. [10]

#### **1.4 Cesarean delivery on maternal request (CDMR)**

The 2013 American College of Obstetricians and Gynecologists (ACOG) Committee on Obstetric Practice and 2006 National Institutes of Health (NIH) consensus committee determined that the evidence supporting the Cesarean delivery on maternal request (CDMR) was not conclusive and that more research is needed.

Both committees provided the following recommendations regarding CDMR [11,12]:

- Unless there are maternal or fetal indications for cesarean delivery, vaginal delivery should be recommended
- CDMR should not be performed before 39 weeks' gestation without verifying fetal lung maturity (due to a potential risk of respiratory problems for the baby)
- CDMR is not recommended for women who want more children (due to the increased risk for placenta previa/accreta and gravid hysterectomy with each cesarean delivery)

The NIH consensus panel on CDMR also noted the following [12]:

- CDMR has a potential benefit of decreased risk of hemorrhage for the mother and decreased risk of birth injuries for the baby
- CDMR requires individualized counseling by the practitioner of the potential risks and benefits of both vaginal and cesarean delivery

## **1.5 Objective of the study**

To estimate the rate of C-sections at Bint-Alhuda Teaching Hospital in AL-Nasiriyah. city during the year of 2020 and to describe the type, and common indications of cesarean section among the study groups.

# **Chapter Two**

**Methodology , statistical analysis and results**

## **2.1 Methodology**

Retrospective study is conducted at the Obstetrics and Gynecology department of Bint- Alhuda Teaching Hospital in AL-Nasiriyah city , from January 2020 to January 2021. The data is collected by using a questionnaire form. The questionnaire is filled by taking the information from the archive. The information obtained includes the following:

- Type of C-section which are grouped into elective and emergency.
- Age of patients.
- Indications of C-section: as stated in case record.
- Number of deliveries
- Number of normal vaginal delivery and C-section
- Outcome of delivery.

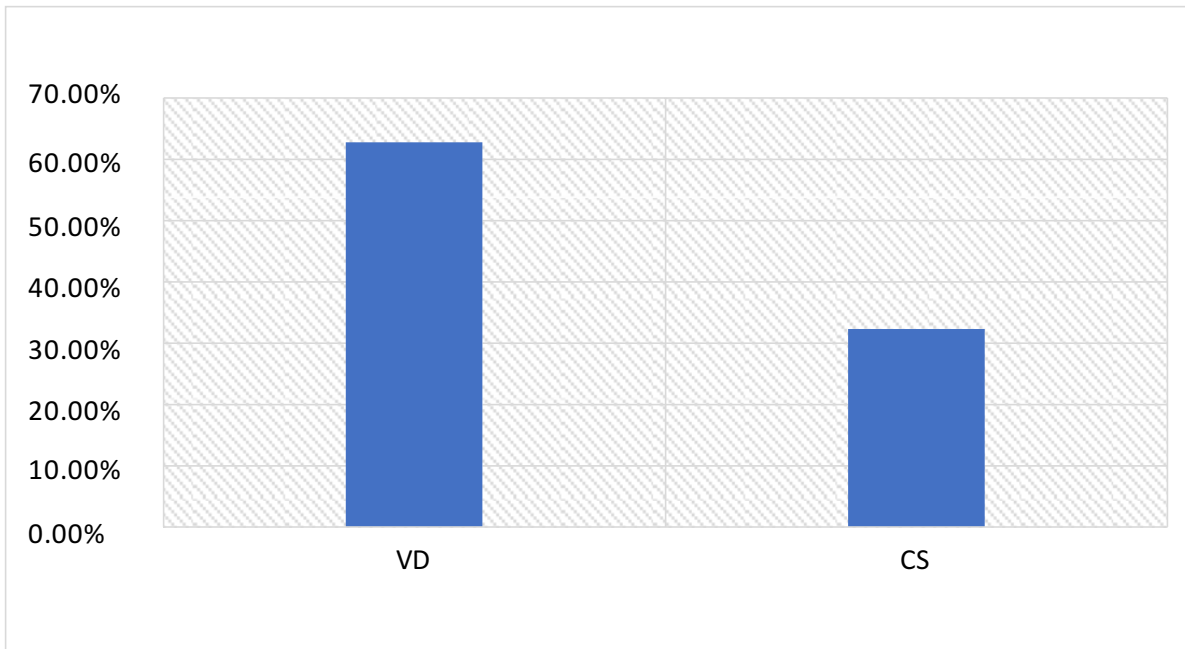
The rate of C-section was calculated as [total number of cesarean section for days included during the study period / Total number of deliveries for days included during the study period [13].

## **2.3 Statistical Analysis:**

The collected data was checked for its completeness , entered, edited, cleaned and analyzed by the available computer software facility of SPSS(statistical packages for social sciences – version22).

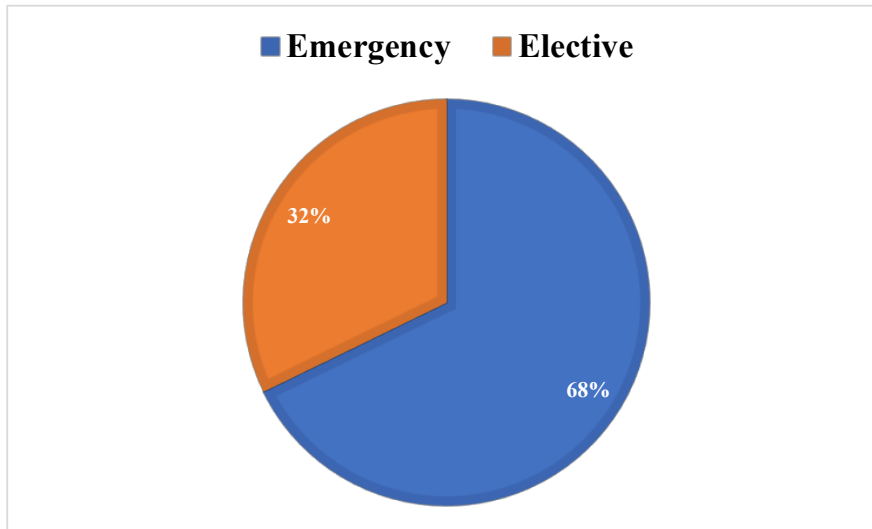
## 2.4 Results

The current study showed that the total number of deliveries during the study period (2020) at Bint-Alhuda Teaching Hospital was 9396 cases. A total number of 3494 (37.2%) women underwent C-section for various reasons while the others had normal delivery. Figure 1 shows the percentage of C-section cases and normal delivery cases. We noticed that the percentage of vaginal delivery (63.8%) higher than the percentage of C-section in ( 2020 ), but the rate of C-section is still higher than the percentage recommended by the WHO which is 10-15%



**Fig.1 the percentage of C-section and Vaginal delivery**

Figure (2) gives clear picture regarding the C-section percentage . We found that about 2375 (67.97%) women were underwent emergent C-section while 1119 (32%) underwent elective C- section.



**Fig.2 the percentage of elective cases and emergent cases.**

previous C-section was the main indication scored 2065 (59.1%) of total cases, while Ruptured uterus scored the minimum rate 1(0.03%). Table(1)

Previous Caesarean section	59.10%
Cephalopelvic disproportion	6.20%
Malpresentation, malpostion	11%
Fetal distress	4.90%
COVID-19 complication	2.64%
Antepartum hemorrhage	2%
Maternal request and precious baby	1.80%
Gestational DM	0.57%
Miscellaneous	4.20%
Pre-eclampsia- eclampsia -HELLP syndrome	0.60%
Cord prolapse	0.34%
Dystocia	0.48%
Ruptured uterus	0.03%
Post date	2.17%
Oligohydramnios	1.03%

Table (1) explain the main indications of C-section

# **Chapter Three**

**Discussion , conclusion and recommendations**

### **3.1. Discussion**

The observed increase in cesarean birth was linked to a number of factors including; advanced maternal age particularly with the first birth, multiple pregnancies, breech presentation, suspected low infant birth weight, repeated C-section after a previous one , cephalopelvic disproportion, asphyxia and preeclampsia [14,15].

The C-section rate among studied group was (37.2%) which is considerably high. Such high rate also reported by previous studies .This high rate may be attributed to that, the study conducted in Bint-Alhuda Teaching Hospital which is the only tertiary hospital in Thi-Qar. Repeated cesarean after previous one was the main cause for a high rate of cesarean deliveries. It was reported to be the leading cause of 59.1% of operations. This high rate of C-section also reported in other cities in Iraq like Baghdad (47.1%) in Al Yarmouk Teaching Hospital (2018)[16] and in Basra (38.5%) according to study conducted in 2019 [17].

In many developed countries, C-sections has been increased and the attention has been focused on strategies to reduce its use because high C-section rates do not confer additional health gain in contrast it may increase maternal risk including, having implications for future pregnancies and having resource implications for health service [18]. According to regional health records and statistics, the prevalence of C-section in Iraq is up to three times higher than the international rate [19].

The global C-section rate distributed very unevenly. As a result it represents 15% of abdominal surgeries . Where, Latin America and Caribbean recorded the highest rate of (29.2%) while Africa scored the lowest (3.5%). In developed countries the proportion of cesarean birth is 21.1% compared with the least developed countries which recorded 2% of deliveries cesarean section.



The C-section increment rate was noticed as a global issues[18] . It was reported to be about (55.6%) in Brazil [20] ,34.7% in Kuwait[21] , 32.8% in USA[22], 19.1% in Saudi Arabia[23] and higher rates were reported in 52% in Egypt[24] .

A low rate was reported in Finland, Iceland and Norway have had very low increases with their C-section rates being around 15%. These countries successfully keeping their C-section rates down focus more on higher rates of vaginal births through having strict guidelines about elective C-sections, cultural normalising of vaginal birth, different legal attitude to medical litigation, and access to high quality midwifery led care.[25]

## **3.2 Conclusion**

1. Increased rate of C-section, which is a universal trend in obstetrics in our country and in the world.
2. C-section rate in Bint-Alhuda teaching hospital in Thi-qar city at the study period was higher than WHO recommendation (37.2%).
3. The percentage of emergent cases was (32%) whilst the elective cases (68%)

## **3.3 Recommendations**

1. The rate of C-section should be kept within the optimal range by doing medical check of labor management.
2. The indications for C-section should be cleared in a strict protocols
3. The trail of normal vaginal delivery after a first cesarean should be assessed.
4. public background knowledge about risks of an operation is in need.
5. Good antenatal care will help to decide the mode of delivery.

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