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Research Paper

The relationship between the prevalence of cesarean sections and progesterone (duphaston) usage during pregnancy

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ABSTRACT

Background: Progesterone plays a crucial part in ovulation, implantation, and pregnancy, among other reproductive processes. This is related to progesterone's role in controlling cyclical changes in decidualization and proliferation, which regulate uterine function during the menstrual cycle. Progesterone is necessary for the development of decidual tissues. In the event of fertilization, high levels of progesterone in the blood are crucial for maintaining pregnancy by promoting uterine growth and inhibiting the effects of factors that cause myometrial contraction. During a cesarean section, the fetus is delivered via a surgical incision made in the woman's abdomen (laparotomy) and in her uterus (hysterotomy). The likelihood of experiencing health issues following a cesarean birth is somewhat increased due to the high number of caesarean sections performed globally in comparison to spontaneous births. Method: 65 pregnant women participated in this cross-sectional study, which ran from October 1, 2022, to March 20, 2023, in the gynecological department of Salah Al Deen General Hospital in the Salah al Deen governorate and in Diyala. Result: As in result of questioners in pregnancies take the progesterone as stabilizer About 75.4% of participants were delivered by cesarean section and only 24.6% were delivered by normal vaginal delivery. Conclusion: The regular use of progestagens for the treatment of impending miscarriage may have contributed to the increased rate of cesarean sections among the participants.

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1. INTRODUCTION

The ovaries naturally secrete progesterone, an endogenous steroid sex hormone. It interacts with the central nervous system, the mammary gland, and the reproductive tract through its particular receptors. Progesterone and progestins have been used for many years in the treatment of postmenopausal symptoms, secondary amenorrhea, irregular uterine bleeding, and maintaining pregnancy in the face of impending miscarriage [1], [2]. Progestins have been employed in assisted reproductive technologies (ART) treatments for the past 15 years, as well as in the last 30 years to treat hormone-sensitive cancers and endometriosis [3]. Certain gestagens have demonstrated clinical efficacy in treating anorexia and cachexia in AIDS and cancer patients [4].

Because of a number of different processes, progesterone, also known as the "pregnancy hormone," is crucial to the beginning and progression of pregnancy. Enhancement of blood circulation in the uteroplacental system, luteal phase support (progesterone promotes penetration of extravillous trophoblasts into decidual cells by inhibiting apoptosis of these trophoblasts), reduction of uterine contractility (adequate progesterone concentrations in the myometrium can counteract the stimulating activity of prostaglandin and oxytocin) and all of the above are among them [5]. The most common surgical treatment that women of reproductive age undergo to deliver their babies is a cesarean section. Cesarean delivery is now the most common birth method used worldwide to deliver a pregnancy from a woman or her family, regardless of whether the condition calls for it [6]. Cesarean deliveries are now the most common birth method used globally to remove a fetus from a woman or her family, regardless of whether the condition calls for it or not [6].

Notwithstanding the Organization's emphasis on the suggestion that 15% of all deliveries should result in a cesarean section. Nonetheless, the World Health Organization's recommended rate of cesarean sections is exceeded in 37 of the 60 affluent nations [7], [8]. After a caesarean section, women may encounter a wide range of potential complications, some of which may manifest as the most common adverse outcomes [9]. These include post-operative blood loss, wound and infection complications, venous thromboembolic events, and complications from anesthesia drugs. Despite World Health. Because of these issues following the caesarean section, there may be a greater urge to do one in order to save the mother's and the child's lives and shield them from potential bruises and injuries during labor. With the use of relevant theories and models, health education can significantly contribute to raising pregnant women's level of knowledge as well as changing their attitudes and behaviors.

The objectives of prenatal health education are to support expectant mothers in creating individual birth plans that serve as a road map for delivery, to raise women's confidence in their own ability to give birth, and to improve knowledge and attitudes about saving birth as normal as possible despite normal vaginal delivery. This article's goal is to raise awareness of cesarean sections and the more frequent and typical problems that these deliveries might cause in women. Significance of a Cesarean Section: Women have numerous challenges during childbirth, which hinder the delivery of the child via the vagina. In certain clinical settings, the mother's life may be in danger during a vaginal birth due to these dangerous and critical causes, as stated in reference [10]. In certain clinical scenarios, a vaginal delivery may pose a risk to the mother's life due to various health conditions, including prior cesarean delivery at the mother's request (also known as an elective cesarean section), pelvic pain, and critical health issues [11]. Disease of the heart or lungs, cerebral aneurysm or arteriovenous malformation, herpes simplex or HIV infection, past pelvic or anal/rectal reconstructive surgery, deformity or cephalo-pelvic disproportion, and pathology necessitating concomitant

2. RELATED WORK

Perimortem cesarean sections and intra-abdominal surgery [12]. In addition, there are indications pertaining to the anatomy of the female uterus that include placental abruption, previous full-thickness myomectomy, prior classical hysterotomy, history of uterine incision dehiscence, invasive cervical cancer, previous trachelectomy, genital tract obstructive mass, and permanent cerclage [13]. Additional signs of

non-reassuring fetal status (such as abnormal umbilical cord Doppler study) or abnormal fetal heart tracing, umbilical cord prolapse, unsuccessful vaginal delivery following surgery, malpresentation, acrosomia, congenital anomaly, thrombocytopenia, and previous neonatal birth trauma are associated with cesarean delivery [14]. Common Cesarean Section Complications A Caesarean section can result in a variety of complications, ranging in severity from the common and simple (pain at the wound site and postpartum hemorrhage, which can become problematic if it exceeds a certain limit) to more serious complications like adhesions in the pelvic area that interfere with the regulation of the menstrual cycle, anesthesia-related complications, and potentially fatal complications [15]. Wound infection is one of the most frequent mild problems following a cesarean section; for many women, endometritis also frequently develops following a cesarean delivery. During the intraoperative period, women may experience various complications, such as bleeding and abrasions, at varying rates depending on the kind of operation. The rate for an elective cesarean birth is roughly 6%, while the rate for an urgent cesarean section is 15% [16].

For every 1000 live births, there is a greater chance of neonatal respiratory distress syndrome (NRDS), which requires oxygen therapy, in full-term newborns delivered via cesarean section (35.5 with a pre-labor C/S against 12.2 with a C/S during labor versus 5.3 with vaginal delivery) [17].

However, among women who had a prolonged ruptured membrane and multiple intra-vaginal examinations, the postoperative complications following cesarean delivery increased the risk of infection and damage or stretching of the lower maternal segment organs, including the bladder and uterus [18], pregnancy, and certain issues related to the placenta's formation and placement in the uterus [19]. However, when a cesarean section is performed without a clear need or the proper indications, it can raise the rate of morbidity and mortality among women and infants worldwide [20].

3. METHODOLOGY

Method and Data Collection

65 pregnant women participated in this cross-sectional observational study, which ran from October 1, 2022, to March 20, 2023, in the gynecological department of Salah Al Deen General Hospital in the Salah al Deen governorate and in Diyala. The key criteria for inclusion comprised all pregnant women who were administered dupheston. Every participant in this study underwent a face-to-face interview and completed a questionnaire. The duration of the interviews with each pregnant woman was roughly five minutes. Three components make up the questionnaire that was used to collect the data. The age of the pregnant woman, the number of prior pregnancies, and the number of prior abortions were included in the first section. The usage of dupheston or other progesterone throughout pregnancy and its negative effects were covered in the second section. The kind of delivery was covered in the last section.

4. RESULTS AND DISCUSSION

Results

A total of 65 Iraqi pregnant women received duphaston as a pregnancy stabilizer were participated in the study their ages were ranging from 19 to 40 years old, Table 1.

Table 1. Age

Age(in years)	Number of pregnant women	%
Less than 20	2	3.1%
20-30	48	73.85%
30-40	15	23.1%

When participant pregnant women asked about number of their pregnancies, most of them (about 33.85%) had no previous pregnancy, while about 24.6%, 20% had one or two Pregnancies respectively, Table 2.

Table 2. Number of previous pregnancies

Number of Previous Pregnancies	Number	%
Zero	22	33.85%
One	16	24.6%
Two	13	20%
Three	5	7.7%
Four	5	7.7%
Five	2	3.1%
Six	2	3.1%

About 58.46% of participants had no history of previous abortion. But about 42.42% have previous abortion, Table 3.

About 60% of participants need duphaston during their precious pregnancy, and most of them need the pregnancy stabilizer in previous one or two pregnancy.

Most participants started to administer duphaston from first month of pregnancy, while few number (10) of them started medication at second or third months of pregnancy,

Table 3. History of previous abortion

History of Previous Abortion	Number	%
Yes	28	42.42%
No	38	58.46%
Did she need duphaston in previous pregnancies		
Yes	39	60%
No	26	40%
If yes , how many number of pregnancies she need duphaston		
One pregnancy	16	41%
Two pregnancies	16	41%
Tree pregnancies	4	10.26%
Four pregnancies	2	5.2%
Six pregnancies	1	2.56%

About 75.4% of participants were delivered by cesarean section and only 24.6% were delivered by normal vaginal delivery, Table 4.

Most of participants who delivered by cesarean section have history of other C/S in previous their pregnancies

Table 4. Type of delivery

Type of delivery	Number	%
C/S	49	75.4%
Normal vaginal delivery	16	24.6%
If C/S, how many number of C/S		
One time	21	42.9%
Two times	14	28.57%
Tree times	7	14.295
Four times	3	6.1%
Five times	3	6.1%
Six times	1	2%

All of pregnant women participated in this research said that the pharmacist explain the side effects of duphaston before dispense it to them.

All of participants mentioned that they did not feel any bothersome side effects

Discussion

This study showed that there was no correlation between CS and mother age. 23.1% of women who gave birth via CS were between the ages of 30 and 40, while 73.85% of women were under or equal to 30.This result was inconsistent with other studies from the UK, Australia, Canada, and Iraq that found older women had a higher risk of developing CS [21], [22], [23], [24].

Every participant in this trial received progesterone, and approximately 58.46% of them had never had an abortion. However, only 42.42% of the women had previously had an abortion. Dante find no evidence to support the routine use of progestagens for the treatment of threatened miscarriage, and the studies that included women who had experienced at least three miscarriages were the only ones that found a significantly lower miscarriage rate among these women. [25]

The majority of participants began taking duphaston in the first month of their pregnancy, whereas only nine of them began taking the medication in the second or third month. Additionally, the US Food and Drug Administration advised starting progesterone therapy after the 16th week of gestation in order to lower the risk of preterm births in women who had previously given birth before their due date. Even a stated 4–5% rate of progesterone use in the first trimester is considered a high prescription for an unknown fetal risk in the United States. [26] Merely 24.6% of the pregnant women in this study were delivered vaginally, while approximately 75.4% of them underwent cesarean sections. Women who reported using progesterone in the early stages of pregnancy had far greater risks of caesarean sections, according to research akin to the Born in Guangzhou Cohort Study (BIGCS) in China [26].

5. CONCLUSION

The regular use of progestagens for the treatment of impending miscarriage may have contributed to the increased rate of cesarean sections among the participants.

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Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Zainab Mustafa Mahdi	✓	✓	✓		✓	✓			✓	✓	✓	✓	✓	

C: **C**onceptualization
M: **M**ethodology
So: **So**ftware
Va: **Va**lidation
Fo: **Fo**rmal analysis
I: **I**nvestigation
R: **R**esources
D: **D**ata Curation
O: Writing- **O**riginal Draft
E: Writing- Review& **E**diting
Vi: **Vi**sualization
Su: **Su**pervision
P: **P**roject administration
Fu: **Fu**nding acquisition

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Informed Consent

All participants were informed about the purpose of the study, and their voluntary consent was obtained prior to data collection.

Ethical Approval

The study was conducted in compliance with the ethical principles outlined in the Declaration of Helsinki and approved by the relevant institutional authorities.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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