

Unexpected Adverse Medical & Surgical Health Conditions in Neonates after Elective Cesarean Sections within the Context of the Influence of Local Socio-demographic Factors in Babylon

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Abstract

Background: Caesarean section was first introduced to reduce the risks of normal delivery, and is recommended only when the lives of the mother and fetus are compromised, as it is associated with certain risks. However, some women's perceptions may be influenced by local culture. According to international statistics, the rate of C-section is increasing globally, and in Iraq it is 2-3 times higher than other nations. More than 1/3 of women in Babylon choose C-section voluntarily, believing it is safer, healthier, and less painful.

Aim of the Study: Identify the unexpected medical and surgical conditions of newborns by elective cesarean delivery in Al-Hillah city, and assess the association between the actual gestational age at birth and decision by which elective caesarean sections were done as influenced by local socio-demographic factors and perceptions; that resulted in those conditions.

Methodology: This study is a cross sectional study conducted in Al-Hilla General Teaching Hospital from the beginning of March 2018 until the end on August 2018, and included a total of 150 neonates born via elective cesarean section who had unexpected medical and surgical conditions.

Results: Mean maternal age was (26.27±9.56) year ranging from (16-43). Seventy percent of them had timing of < 39 weeks of gestation, and 36.7% had actual gestational age at birth of < 37 weeks. Almost half of them chose C-section for being safe. Respiratory compromise was the commonest medical complication among mothers. There was significant relationship between decision basis and actual gestational age at birth, as well as between maternal age and medical and surgical complications (P-value<0.05).

Conclusion: Neonates born after elective cesarean delivery in Al-Hillah city have significantly higher rates of respiratory morbidity and longer length of hospital stay, with increased risk of certain medical and surgical complications. The unexpected medical complications are inversely related to gestational age at which elective cesarean section is timed.

Keywords: cesarean section; medical complications; surgical complications.

Introduction

Child delivery in Babylon is associated with a multitude of physical, emotional, social, physiological, ethnocultural, and psychological dimensions. Cesarean

section rates are increasing in Babylon Province. Given the steady rise of C-sections carried out, the unexpected adverse health outcomes in neonates born via this mode of delivery it seems necessary to investigate and forge out sufficient information about this area of obstetric practice and the factors that attract women's decision of choosing this mode of delivery given that few scholarly articles in Iraq are available currently^[1].

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In an ethnographic based study carried out by Latifnejad-Roudsari et al. in 2014, non medical factors including dread of mesmerizing normal vaginal delivery related pain, local Iraqi social attitudes and values, and social network were blamed as the reasons affecting the choice of opting for elective cesarean delivery and act partly for a proportion of the observed increase [2].

Caesarean sections are either planned electively or emergent. Planned sections are done before delivery commences, as compared to emergency sections, which are undertaken before or after labour has commenced [3]. The reasonable gestational age for scheduled sections has become a matter of heated debate among professionals dealing with maternal and child health care [4].

Over nearly a half century, maternal and child health care professionals have defined “term pregnancy” based on the assumption that fetal maturity is completed at the end of 37th week [5]. However, it recently became clear that neonatal respiratory complications are reduced when increasing the gestational age to 39 weeks. There is evidence that babies born by planned C-section at 37 weeks have more occurrences of certain complications than those at 39 weeks [6]. Therefore, experts recommend that elective C-section be conducted from 39 weeks onwards to achieve fetal maturity [7].

Although pregnancy is a physiological process, its end is a painful experience for mothers and associated with fear, dread and anxiety [8]. Local culture in Babylon province has a major impact on women’s beliefs and attitudes towards labor pain, coping mechanisms, and observed behaviors. This attitude can influence women’s decisions about her mode of delivery [9].

Safe delivery is the target of every medical team dealing with childbirth. C-section was introduced primarily to reduce the risks maternal child complications. Unfortunately there is a false assumption nowadays that scheduled C-section provides a safe and healthier means of escaping vaginal delivery pain. That is why it is estimated that more than half of women voluntarily choose C-section as the preferred mode of delivering their babies [10].

C-section rate is an important health insurance index. According to WHO, C-section rate was 15% in 1985, significantly increasing in 2009 worldwide [11]. In

North America notably the United States of America, C-section accounted for 26.1% of all deliveries in 2002. In Europe, this rate was one quarter of births in some EU states. In addition, in Latin America this rate is also quite high reaching up to 40% [12].

According to regional health records and statistics, the prevalence of C-section in Iraq is up to three times higher than the international rate [13]. Although scheduled operations should be decided when the health of the mother or baby are compromised; this mode of delivery has become a way of avoiding distress of labor pain, due to a common notion that its less painful, safer, and healthier than vaginal delivery [14].

Aim of the Study

Identify the unexpected medical and surgical conditions of newborns by elective cesarean delivery in Al-Hillah city, and assess the association between the actual gestational age at birth and decision by which elective caesarean sections were done as influenced by local sociodemographic factors and perceptions; that resulted in those conditions.

Patients and Methods

This is a cross-sectional study conducted in Al-Hilla General Teaching Hospital from the beginning of March 2018 until the end on August 2018, and included a total of 150 neonates born via elective cesarean section who had unexpected medical and surgical conditions following the procedure, who were born at various gestational ages. Excluded cases were those who did not develop unexpected outcomes, as well as those born via emergency C-section or normal vaginal delivery.

Results

Timing of caesarean section was less than 39 weeks in 70.0%, while it was equal or more than 39 weeks in the remaining 30.0% (Figure 1).

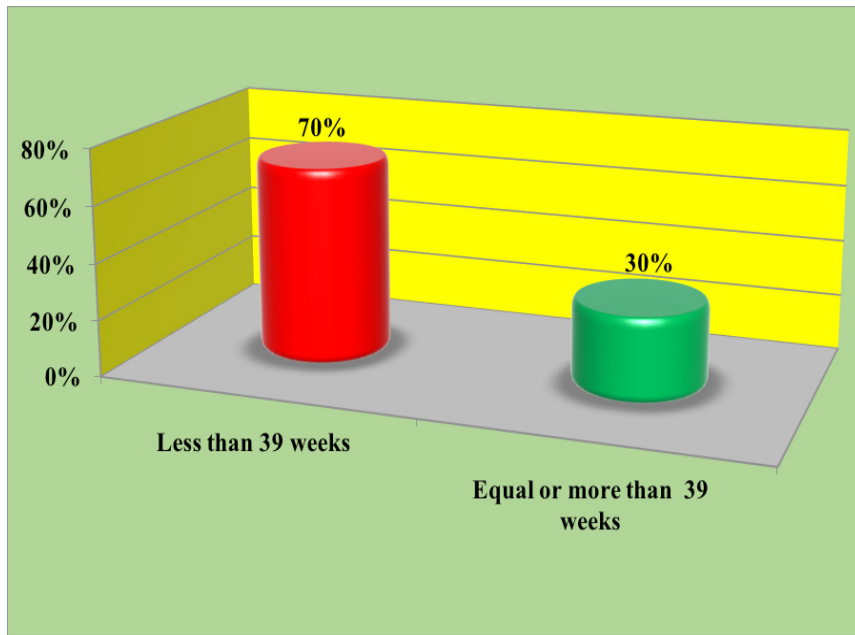


Figure 1: Distribution of the timing of elective caesarean section

Figure 2 shows the primary basis for decision to time elective caesarean section, which is clinical in 26.75% and by ultrasound in 73.3%.

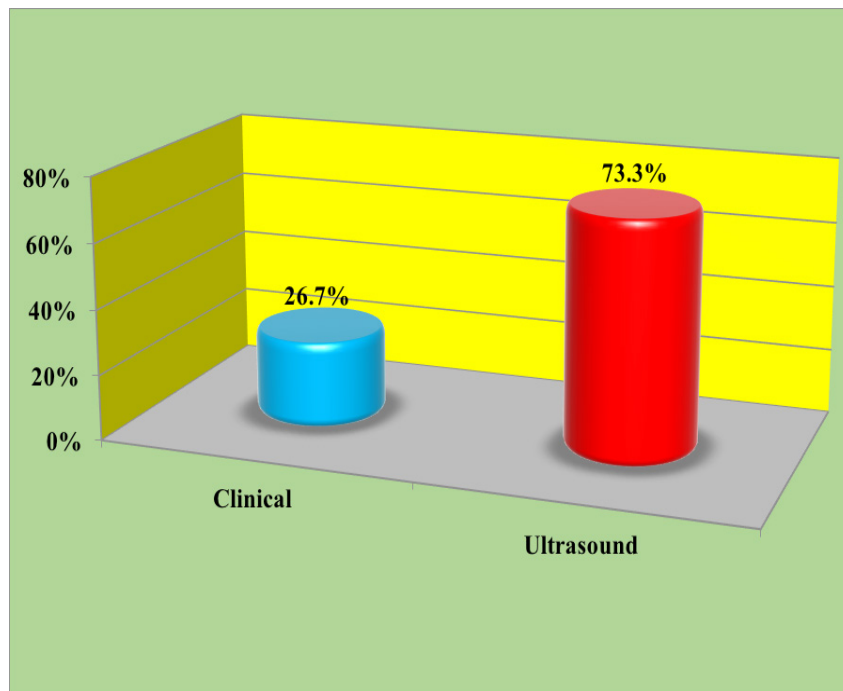


Figure 2: The primary basis for decision to time elective caesarean section

Figure 3 represents the reasons for opting for elective C section cited by women.

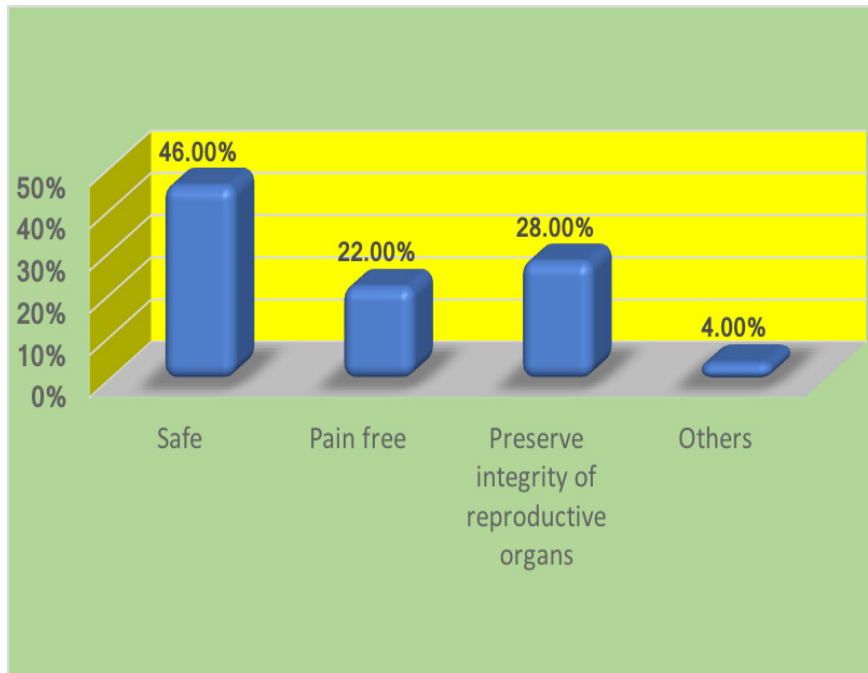


Figure 3: Reasons for opting for elective C-section cited by women

Table 1 shows that the higher percentage of unexpected medical complication of pregnant women who underwent elective caesarean section was respiratory compromised which represented 23.3%, followed by nosocomial infection and neonatal sepsis, prematurity, congenital heart disease which represented 16.7%, 14.7%, and 12.7% respectively.

Table 1: Distribution of unexpected medical complication of pregnant women who underwent elective caesarean section.

Medical complication	Number	Percentage(%)
Respiratory compromised	35	23.3%
Prematurity	22	14.7%
Postmaturity	5	3.3%
Birth asphyxia	10	6.7%
Nosocomial infection & neonatal sepsis	25	16.7%
Reluctant to feed, artificial feeding & GERD	9	6.0%
Seizure and electrolyte disturbance	15	10.0%
Hypothermia and hypoglycemia	5	3.3%
Congenital heart disease & other anomalies	19	12.7%
Stillbirth	5	3.3%
Total	150	100.0%

Table 2 shows that the higher percentage of surgical complication was injury followed by intestinal obstruction, pneumothorax and trachea esophageal fistula in a percentage of 40.0%, 30.0%, 20.0% and 10.0% respectively.

Table 2: Distribution of unexpected surgical complication of pregnant women who underwent elective caesarean section.

Surgical complication	Number	Percentage(%)
Pneumothorax	10	20.0%%
Intestinal obstruction	15	30.0%
Tracheo esophageal fistula	5	10.0%
Others (injury)	20	40.0%
Total	50	100.0%

Table 3 shows that chi-square test was conducted to find an association between variables (decision by which caesarean section was conducted and actual gestational age at birth) and timing of caesarean section (less than 39 weeks and equal or more than 39 weeks).

Table 3: Association between variables and timing of caesarean section

Variables	Timing of caesarean section		Total	X2	P-value
	<39 weeks	≥39 weeks			
Decision					
Clinically	20(19.0%)	20(44.4%)	40(26.7%)	10.39	0.001*
Ultrasound	85(81.0%)	25(55.6%)	110(73.3%)		
Total	105(100.0%)	45(100.0%)	150(100.0%)		
Actual GA at birth(week)					
< 37	55(52.4%)	0(0.0%)	55(36.7%)	44.99	<0.001*
37 – 42	40(38.1%)	25(55.6%)	65(43.3%)		
≥ 42	10(9.5%)	20(44.4%)	30(20.0%)		
Total	105(100.0%)	45(100.0%)	150(100.0%)		

*P-value≤0.05 was significant

Discussion

Depending on the results of this cross sectional study, vaginal birth should be highly encouraged to avoid unexpected negative maternal child health outcomes . The results are highlighted by the findings of Knoblauch H.^[15]. In similar international studies, participants assumed that vaginal delivery was necessary for baby's lungs functional maturation, propping up of mother-child emotional attachment, reduction of unnecessary drug usage and other interventions. Overall, they assumed that vaginal delivery was less risky than C-section as it eliminates maternal child adverse outcomes^[16].

The highest percentage of unexpected medical complications of pregnant women who underwent elective C-section was respiratory compromise in 23.3%, followed by nosocomial infection and neonatal sepsis in 16.7%, prematurity in 14.7%, and congenital heart disease in 12.7%. This study is in line with international studies that indicate lung complications are the commonest cause of neonatal morbidity following elective C-sections^[17].

These are in part attributed to the absence of hormonal and physiological cascade of changes associated with birth which are vital for lung function

in newborns, which do partially occur in neonates delivered as preterm^[18]. Term neonatal respiratory distress syndrome is also associated with higher need for oxygen and assisted pulmonary ventilation, lengthy hospital stays and higher mortality than other causes of respiratory morbidity in term counterparts^[19].

Infants delivered by planned C-sections in Babylon have an increased risk of adverse respiratory morbidity. The relative risk increased with decreasing gestational age. Nearly one quarter (23.3%) of unexpected neonatal medical conditions following elective C-sections were neonatal respiratory compromise that required SCBU or RCU admission, including (respiratory distress syndrome, transient tachypnea of newborn and assisted ventilation in respiratory care units). These complications are similar to international studies and surpassed other medical conditions.

As shown by this current research paper elective C-section can elicit some unexpected negative outcomes in neonates. The findings are in agreement with those of Fenwick and associates, who concluded maternal and fetal health, mother-child bonding and attachment, and transition to motherhood as the main positive benefits of vaginal delivery^[20]. An outstanding issue pointed out by those with scheduled cesarean experience was mothers' "paralysis" literally and helplessness to care for the child with unexpected negative outcomes and meet the maternal role; the results were in harmony with those of Cranley and colleagues.^[21]

Thus results of the present study demonstrate that vaginal delivery remains and should remain a symbol of well being and health as it is a defining point in life. Since childbirth pain is usually ends with positive outcomes, this distinguishes it from other types of painful experiences. The study of Manthata also explicitly emphasized this fact^[22]. Selecting C-section electively in Babylon according to this paper was mainly out of fear of labor pain. The study of Poikkeus likewise concluded that women's preference for elective C-section is due to their unfound anxiety of pain during vaginal delivery and unrealistic thoughts about their inability to withstand vaginal birth^[23].

Almost all participants had positive attitude towards scheduled C-section despite its adverse outcomes. They also attributed many advantages to it. The most important conceptions were that it is harmless, painless and maintain beauty of reproductive organs, with

no negative impact on intimacy and sex life^[24]. Gungor and associates, in a study in 2008, also documented similar social beliefs. They also found that the frequency and mode of delivery are greatly influenced by cultural beliefs^[25].

Conclusions

Neonates born after elective cesarean delivery in Al-Hillah city have significantly higher rates of respiratory morbidity and longer length of hospital stay, with increased risk of certain medical and surgical complications. The unexpected medical complications are inversely related to gestational age at which elective cesarean section is timed. The recommended gestational age at which elective cesarean section should be timed is at 39 weeks.

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both environmental and health and higher education and scientific research ministries in Iraq

Conflict of Interest: The authors declare that they have no conflict of interest.

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