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Risk Factors Related to Anesthesia and its Effect during Caesarean Section on Iraqi Women

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Abstract: A retrospective study was conducted on pregnant women in Iraq, where the aim of the research was described risk factors related to anaesthesia and its effect during caesarean section on Iraqi women. One hundred forty patients were collected from several different hospitals. The objectives were to determine the behaviour of the caesarean section according to their age and to describe the type of anaesthesia applied to patients who terminated their pregnancy by caesarean section. To get acquainted with the types of complications in terms of the time of onset, the method of anaesthesia, and the relationship between the method of anaesthesia and the Apgar score, as well as listing the main indications for caesarean delivery. In this study, the following types of anaesthesia (Tracheal intubation and Spinal anaesthesia) were used to find out the complications for patients' women. The inclusion criteria in this study were age group (years), type of anaesthesia applied, type of anaesthesia complications by the time of onset, type of complications by the method of anaesthesia applied, Apgar scale, and indicators of caesarean section. There was a greater predominance of immediate complications, with nausea and vomiting more common in both anaesthesia and all neonates with satisfactory Apgar scores.

Keywords: Apgar, complications, pregnant women, Tracheal intubation, Spinal anaesthesia.

INTRODUCTION

The incidence of caesarean section has increased compared to vaginal delivery in recent years in Iraq [Petter, C.E. *et al*., 2013; Chaim, W. *et al*., 2000].

Caesarean sections went from 5% in 1998 to 24% in 2002. Anaesthesia has long been a major cause of maternal death. Deaths due to anaesthesia came in third place, while in 2000, it fell to fifth place, after ectopic pregnancy, hypertensive diseases, pulmonary embolism, and cerebrovascular accidents [Kristian, O. H. *et al*., 2007; Ward, V.P. *et al*., 2008; Myles, T.D. *et al*., 2002].

Among the anesthesia-related deaths, there was a decrease in deaths from the spinal blockade and a higher proportion of deaths related to general anaesthesia and epidural blockades, and a predominance of deaths due to aspiration of gastric contents during intubation or at the time of extubation was observed, in which the predominance of deaths due to hypoxia was revealed due to intubation failure [Modder, J. *et al*., 2010; Tsai, P.S. *et al*., 2011; Barbut, F. *et al*., 2004].

In summary, maternal mortality refers to a general lack of knowledge about obstetric anaesthesia, insufficient personnel trained in the administration of anesthesia, and a lack of appropriate equipment in delivery rooms. For this reason, it is important to meet the minimum essential requirements, and this would reduce the number of deaths significantly [Briand, V. *et al*., 2012; Karlström, A. *et al*., 2013; Kamilya, G. *et al*., 2010].

There is little good evidence that provides data on the ideal anaesthesia technique for patients who need an urgent caesarean section; traditionally, general anaesthesia has been suggested when there is an immediate threat to the life of the mother or fetus, and the use of nervous system techniques in non-urgent situations [Clark, S.L. *et al*., 2008; WHO, 2012].

Currently, there is no adequate systematic review or recent evidence-based publications that contain specific information on the aesthetic management of emergency caesarean section. It is important to clarify what type of anaesthesia is associated with fewer adverse outcomes in the mother-child binomial [NBST, 2010].

The present work seeks to systematically evaluate and analyze the existing literature on anaesthetic management in obstetric patients who have required urgent caesarean section to generate basic guidelines and recommendations that tend towards the approximation of a protocol on this subject based on the definition of the most appropriate evidence-based interventions [McCord, C. *et al*., 2009; NBST, 2013]. Additionally, it is intended to

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determine the effectiveness and safety of anaesthetic interventions in maternal and neonatal outcomes [WHO, 2011].

MATERIALS AND METHODS

Patient Sample

An observational, descriptive, retrospective study was performed with the aim of describing Risk factors related to anesthesia and its effect during caesarean section on Iraqi women.

Describe the behavior of anesthesia administration in caesarean section during the period from January 9, 2019, to December 28, 2020.

The sample: consisted of 140 patients who underwent caesarean section in the surgical unit from several different hospitals during the study period and who fulfilled the inclusion criteria.

Study Design

In this study, the anaesthesia behaviour of pregnant women who relied on caesarean section was described as a method of delivery. One hundred forty patients were collected from several different hospitals. The objectives were to determine the behaviour of the caesarean section according to their age and to describe the type of anaesthesia applied to patients who terminated their pregnancy by caesarean section. To get acquainted with the types of complications in terms of the time of onset, the method of anaesthesia, and the relationship between the method of anaesthesia and the Apgar score, as well as listing the main indications for caesarean delivery.

In this study, the following types of anaesthesia (Tracheal intubation and Spinal anaesthesia) were used to find out the complications for patients women.

The inclusion criteria in this study were age group (years), type of anaesthesia applied, type of anaesthesia complications by the time of onset, type of complications by the method of anaesthesia applied, Apgar scale, and key indicators of emergency caesarean section.

Study Period

Describe the behaviour of anaesthesia administration in caesarean section during the period from January 9, 2019, to December 28, 2020.

Aim of Study

In this research, a retrospective study was conducted on pregnant women in Iraq, where the aim of the research was described risk factors related to anaesthesia and its effect during caesarean section on Iraqi women.

Statistical Analysis

This study was based on data collection and demographic parameters of patients based on the electronic file in the hospital to patients, where the results were analysed by using the IBM SOFT program in addition to Microsoft Excel 2013. Statistical differences between the types of anaesthesia used in this study were calculated using P-value.

RESULTS

In this study, 140 patients were collected. In the table below, the patients were distributed according to age. The most common ages in this study were 60 patients with 42.8%, followed by 25-29 to 30 patients with 21.4%, ages from (35-40 years) to 30 patients with 21.4% and the least common ages were 30-34 years for 20 patients with 14.2%.

Table 1: Distribution of patients according to age

	Frequency	**P %**
20-24	60	42.8
25-29	30	21.4
30-34	20	14.2
35-40	30	21.4

In Table 2, where the behaviour of the type of anaesthesia applied to emergency caesarean section patients in the surgical unit is described, it was found that the largest number of patients were applied Spinal anaesthesia for 100 patients with 71.4%, followed by patients who underwent Tracheal intubation with 10.5%.

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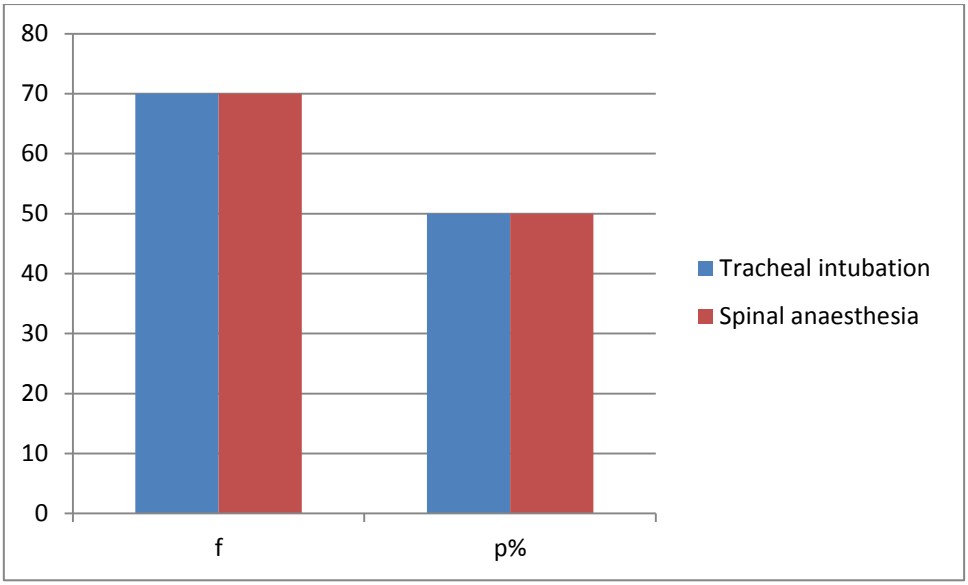

Figure 1- Distribution of patients according to the type of anaesthesia applied

Table 2: The relationship between anaesthesia complications related to their time of onset

Instant complications	No	%	intermediate multiples	No	%
Nausea	12	8.57	headache	9	6.421
vomiting	10	7.14	low back pain	9	6.421
hypotension	6	4.28	back pain	6	4.28
Hypertension	3	2.14	MI paresthesia	1	0.7
Airway Difficulty	1	0.7	Meningismus	1	0.7

In table 2 shows the relationship between anaesthesia complications related to their time of onset. Where Instant complications were found to be greater than intermediate complications, and the most common immediate complications were nausea for 12 patients with 8.57%, vomiting of 10 patients with 7.14%, hypotension of 6 patients with 4.28%, hypertension for three patients with 2.14%

Table 3: Distribution of patients who underwent caesarean section according to anaesthesia complications

Variable	Tracheal intubation	Spinal anaesthesia	P-value
Nausea	6	3	0.03
headache	5	4	0.9
vomiting	6	3	≤0.05
low back pain	7	2	≤0.001
hypotension	4	2	0.04
Hypertension	2	1	0.89
back pain	4	2	0.83
MI paresthesia	1	0	0.9
Meningismus	1	0	0.99

Table 4: Results of Apgar

Results of APGAR	Method of anaesthesia			
	Tracheal intubation		Spinal anaesthesia	
	NO.	٪	NO	٪
Patients' quantity	70	50	70	50
moderate depression	1	1.4 from 70 patient	0	0
very depressed	1	1.4 from 70 patient	0	0
Total	2 cases	2.8%	0 cases	0%

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Table 5: Distribution of patients according to the main reasons that led to the caesarean section

Variable	No	P %
Pregnant woman bleeding.	40	28.57
uterine rupture	36	25.7
The placenta detaches early from the uterine wall.	28	20
Prolapse of the umbilical cord into the cervix	14	10
Fetal distress.	12	8.57
The head of the fetus is relatively large	10	7.14

DISCUSSION

In this study, 140 patients were collected from several different hospitals in Iraq, and the following techniques were used: Tracheal intubation, Spinal anaesthesia.

The patients were evenly distributed on the anaesthesia techniques used in this study, where the study aimed to identify risk factors related to anaesthesia and its effect during caesarean section on Iraqi women.

Despite the application of all the instructions of the Ministry of Health, when any surgery or caesarean section is performed to pregnant women, some complications are immediate, the most common immediate complications in this study were nausea, vomiting, and hypotension, and as for the complications that arose later, they are headache, low back. Pain, back pain.

In Table 3, which shows the distribution of complications that occurred after caesarean section to pregnant women according to the anaesthesia technique used, we find that the distribution of complications was more in patients who underwent tracheal intubation.

In these children, a series of unfavourable factors conspire due to the procedure being performed, the urgency of the intervention, the low blood pressure often experienced by the mother, which interferes with the placental circulation causing fetal hypoxemia, as well as the medications used in the induction and maintenance of anaesthesia that crosses the placenta and causes neonatal depression. These results are similar to another study conducted in the country, where patients who underwent emergency caesarean section regardless of the method of anaesthesia were studied in 2000; in this publication of 492 live births, 452 were active in the first minute, and 481 were presented in the same way per minute Fifth postpartum which is consistent with the results achieved in this work [Nelissen, E. *et al*., 2013; Maaløe, N. *et al*., 2012].

CONCLUSION

It was concluded in this study that more caesarean deliveries were performed in the age group between 20 and 40 years. The patients in this study were evenly distributed according to the technique used to anesthetize pregnant women. Immediate complications were more frequent than those that occurred and later. Vomiting was the most common complication, regardless of the method of anaesthesia.

As can be seen from Table 4, taking into account the Apgar score according to the method of anaesthesia applied in patients who underwent caesarean section, there were no difficulties in calculating Apgar's for newborns from mothers who received anaesthesia since 100% of the result was that mothers who underwent Tracheal intubation 2 cases with (2.8%) moderate depressed, very depressed.

RECOMMENDATIONS

Spinal anesthesia is suitable for patients with heart, high blood pressure, asthma, and respiratory diseases, especially smokers unless the operation is above the level of the umbilicus so that the doctor avoids giving anaesthesia or through the breath, so either the heart or the respiratory system is affected.

Indications for caesarean section are multiple in this study, coinciding with the literature reviewed. Severe preeclampsia, which is an important challenge for all personnel responsible for its management, our attention must be directed to the prevention and control of seizures, the restoration of intravascular fluid and the normalization of blood pressure, and the correction of coagulation disorders.

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