

**Ministry of Higher Education**

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**College of Medicine**



# **Comparison between complication of spinal and general anesthesia in Cesarean Section**

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## **Abstract**

The type of anesthesia utilized and the protection with which it is managed is a significant factor of the result of caesarean section. The purpose of the anesthetic is to reduce the pain that appears in the caesarean section operation. This can be gained by a general anesthetic, a regional or an epidural anesthetic.

**Aim of study:** To compare between the complication of general anesthesia and regional anesthesia in cesarean section in Al-Batool teaching hospital.

**Patients and methods:** This is a cross sectional study. It was conducted in the period from October 2022 to January 2023. We collected 100 patients who underwent cesarean section, 50 with general and 50 with spinal anesthesia. We collected the sample from the patients who attend Al-Batool teaching hospital. Every underwent cesarean section were eligible for study and we excluded the patients who underwent emergent C/S.

**Results:** 100 patients were enrolled in the study with mean age of 29 years. We found significant difference between the type of anesthesia and the time of recovery which is higher in general anesthesia.

**Conclusion:** Regional anesthesia appear to be safer in means of dyspnea, time of recovery and bleeding than general anesthesia in cesarean section

## **Introduction**

Caesarean section can be described as the procedure where a baby is delivered by an incision on the abdominal wall and uterus of the mother. In spite of the fact that operation has become very secure over the years, it is still connected with significant maternal mortality and morbidity [1-2]. The type of anesthesia utilized and the protection with which it is managed is a significant factor of the result of caesarean section [3]. The purpose of the anesthetic is to reduce the pain that appears in the caesarean section operation. This can be gained by a general anesthetic, a spinal anesthetic or an epidural anesthetic [4]. Regional and general anesthesia are two kind of anesthesia commonly used for caesarean section and both have their advantages and disadvantages.

General anesthesia is inability in feeling pain connected with loss of consciousness created by intravenous or inhalation anesthetic agents. The dangers include the aspiration of stomach contents, awareness during the surgical process (because of insufficient anesthesia), unsuccessful intubations, and respiratory obstacles for both the mother and baby. When completed with halogenated volatile agents, general anesthesia has also been connected to a major danger of maternal blood loss compared with regional anesthesia. However, it is a more rapid operating process and is often chosen in cases where speed is matter [5].

Regional anesthesia is the utilization of local anesthetic solutions to induce a loss of sensation to restricted areas. The kinds of regional anesthesia utilized for caesarean section are spinal (subarachnoid) and epidural (extradural) anesthesia which are done by the infiltration of a local anesthetic agent, mainly bupivacaine, into the environment of the spinal cord at the lower back region of the woman [6].

Spinal and epidural anesthesia cause a significant fall in maternal blood pressure, which can impact both mother and fetus, and can be dreadful when the

woman has a bleeding problem. They are also contraindicated in women with coagulation (clotting) disorders because the insertion of the block may accelerate a bleed. They can cause a serious postural puncture headache although the incidence of this is now decreased with the utilization of special needles [7].

The benefits of regional anesthesia are a decrease of the occurrence of general anesthetic problems and that of early bonding between the mother and the newborn, since the mother is awake during the procedure. Particularly, spinal and epidural anesthesia are alike in their safety profiles with a few differences. Spinal anesthesia has a rapid start of action and needs less of the drug, but makes more hypotensive episodes than epidural anesthesia [8].

Anesthesia-related maternal mortality is reduced when general anesthesia is prevented. The maternal mortality rate associated with anesthesia had a drastic fall in the UK and the US between the late 1970s and the late 1980s. This is assumed to be somehow because of the growing utilization of regional anesthesia for caesarean delivery [9].

## **Aim of study**

To compare between the complication of general anesthesia and regional anesthesia in cesarean section in Al-Batool teaching hospital.

## **Patients and methods**

This is a cross sectional study. It was conducted in the period from October 2022 to January 2023. We collected 100 patients who underwent cesarean section, 50 with general and 50 with spinal anesthesia. We collected the sample from the patients who attend Al-Batool teaching hospital. Every underwent cesarean section were eligible for study and we excluded the patients who underwent emergent C/S. We collected informations about age, any hemorrhage, SOB, etc. we collected the informations using prepared written questionnaire and by direct interview with the patients. We preserved the privacy and we coded the patients for the reasons of confidentiality and risk of bias.

## **Statistical analysis**

SPSS Version 25 was used for the description of the data. We expressed the quantitative data by arithmetic mean, standard deviation and mode and the qualitative data by frequencies. Chi square was used to identify the association between the variables when P value less than 0.05 considered significant.

## Results

100 patients were enrolled in the study. Their age groups are demonstrated in table 1.

Table 1. Age Groups

Age groups	Frequency	Percent
less than 20 years	12	12.0
21-30 years	46	46.0
31-40 years	36	36.0
more than 40 years	6	6.0
Total	100	100.0

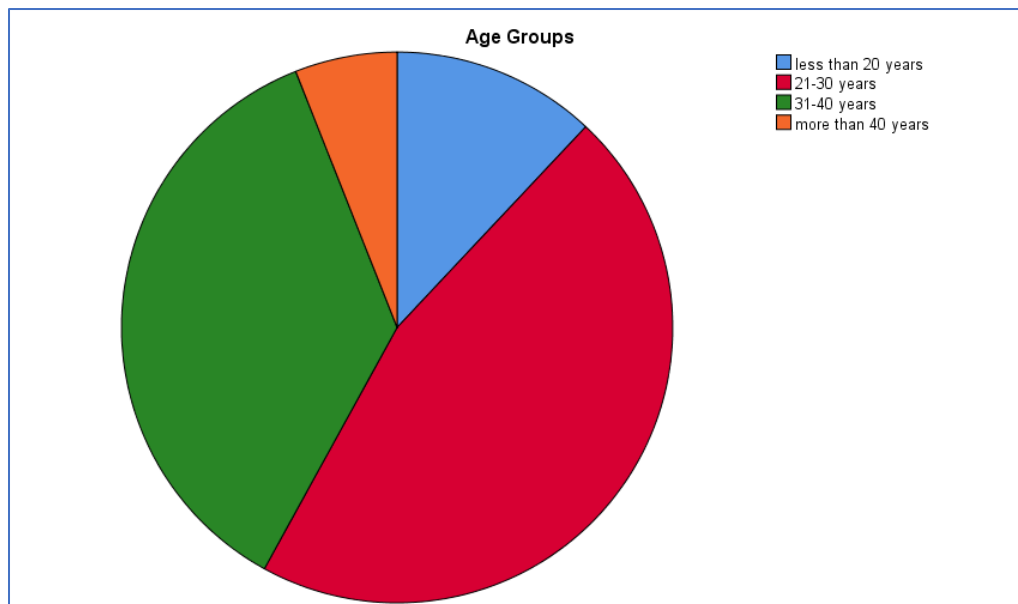


Figure 1. age groups

Their time of recovery is demonstrated in table 2.

Table 2. time of recovery

Type of anesthesia	Time of recovery				Total	Sig.
	1 hour	2 hours	4 hours	6 hours		
General	1	5	30	14	50	P < 0.001
Regional	22	22	5	1	50	P < 0.001

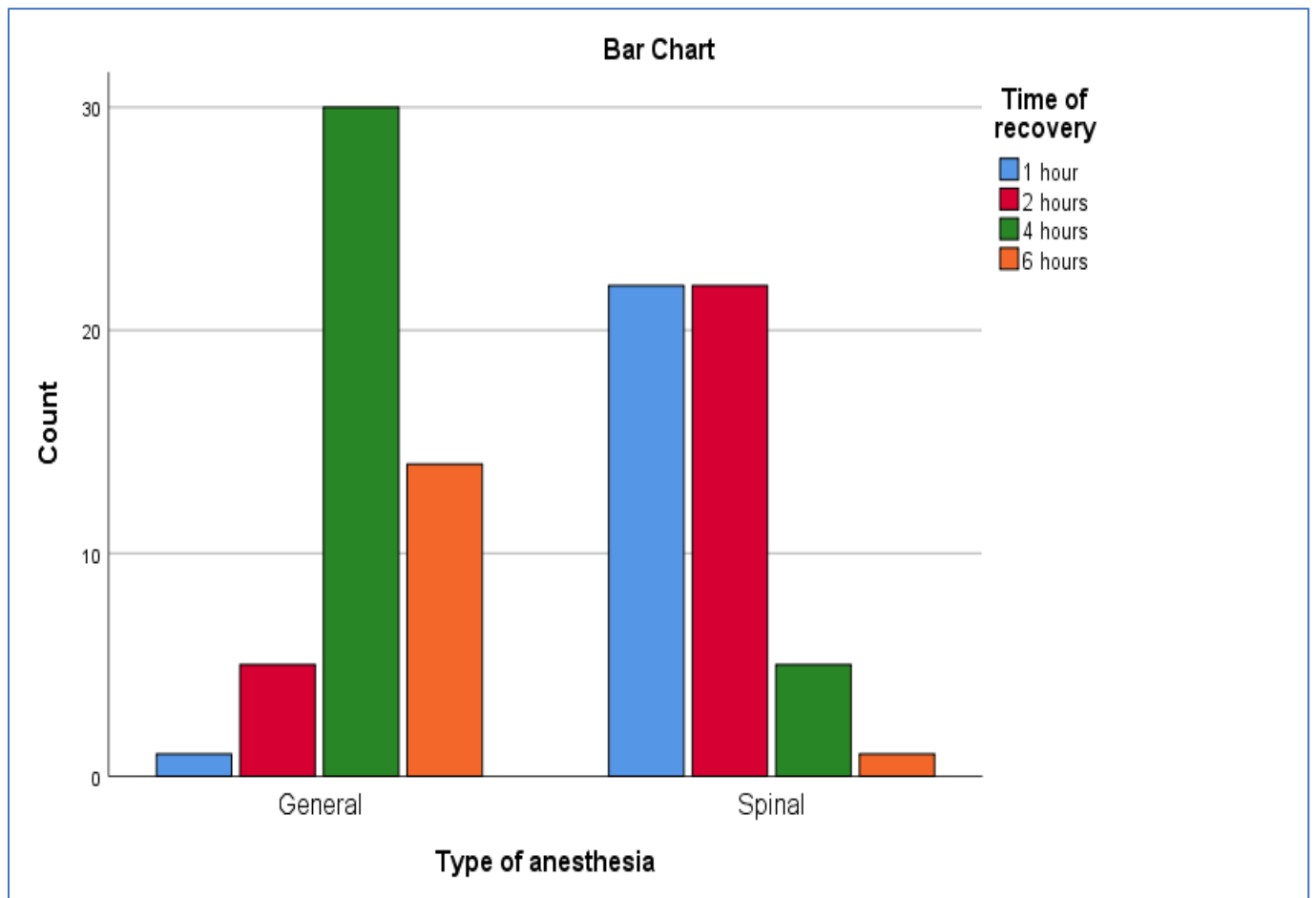


Figure 2. time of recovery in both types



66% of the patients suffered dyspnea after general anesthesia and half of the patient who underwent regional anesthesia suffered dyspnea.

The bleeding is demonstrated in table 3.

**Table 3. Blood loss during operation**

Type of anesthesia	Blood loss		Total
	Yes	No	
General	1	49	50
Spinal	4	46	50
Total	5	95	100

8% of the patient who underwent regional anesthesia suffered from cardiac arrest as in table 4.

**Table 4. Cardiac arrest**

Type of anesthesia	Cardiac arrest		Total
	Yes	No	
General	0	50	50
Spinal	4	46	50
Total	4	96	100

**All of the patients suffered nausea after recovery.**

## Discussion

General anaesthesia for CS is the older approach and is considered the anaesthesia technique of choice in some conditions. These include maternal hypovolaemia, coagulopathy, infection at site of intrathecal catheter or needle insertion, increased intracranial pressure and patient refusal of regional anaesthesia. It is useful when uterine relaxation is required, substantial haemorrhage is anticipated or rapid induction may be needed. Failed endotracheal intubation and aspiration of gastric contents are the two major causes of maternal mortality associated with GA [9].

Regional anaesthesia is a more recent development avoiding the major complications of GA but having several of its own (6, 7, 10). These include maternal hypotension, fetal heart rate decelerations, accidental total spinal anaesthesia, urinary retention, post-partum headache and epidural abscess or haematoma. The lack of medical personnel trained in the technique would exclude the use of SA. It has the advantages of fewer drugs used, a better childbirth experience, better postoperative pain control and possibly lower maternal mortality [10].

In our study we found that there is significant difference between the type of anaesthesia and the time of recovery which is shorter in regional compared to general anaesthesia ( $P < 0.001$ ). which is consistent with the findings of Fredman et al [11]. Other findings were almost similar with no statistical difference.

Limitations of this study include its retrospective approach and small numbers of patients. It appears that RA can be safely applied and provides options for the management of operative deliveries as well as other surgical procedures even in the smaller islands of the Caribbean. Women (and men) can be provided

with choices and hence alleviate some the fears associated with anaesthesia and surgery in the Caribbean and other developing countries [12].

## **Conclusion**

Regional anesthesia appear to be safer in means of dyspnea, time of recovery and bleeding than general anesthesia in cesarean section.

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