Journal of Medicinal and Chemical Sciences 6 (2023) 3198-3209

Journal of Medicinal and Chemical Sciences

Journal homepage: http://www.jmchemsci.com/

Original Article

Comparison of the Effects of General Anesthesia and Spinal Anesthesia on Quality of Life among Women Undergoing Elective Cesarean Section in Erbil City/Iraq

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ARTICLE INFO

Article history

Receive: 2023-06-12
Received in revised: 2023-08-05
Accepted: 2023-08-20
Manuscript ID: JMCS-2307-2162
Checked for Plagiarism: **Yes**
Language Editor:
Dr. Fatima Ramezani
Editor who approved publication:
Dr. Mehrdad Hamidi

DOI:10.26655/JMCHEMSCI.2023.12.33

KEYWORDS

Cesarean section
General anesthesia
Quality of life
Spinal anesthesia

ABSTRACT

Background and Objective: Cesarean section (CS) is considered as a significant surgical intervention necessitating a high level of professional skill and a choice between general anesthesia (GA) and spinal anesthesia (SA). Anesthesia type can significantly influence postoperative recovery, patient satisfaction, and, ultimately, the quality of life. This article aims to compare the impacts of GA and SA on the quality of life among women who undergo elective C-sections.

Methods: This study was carried comparatively on 200 Kurdish pregnant women who undergoing to have a cesarean section with a spinal anesthesia and general anesthesia preference to mothers or physician were included in a purposive sample was carried out in the operating theatre at Maternity Teaching Hospital from 25th January, 2022 to 18th December, 2022. The EuroQoL-5 Dimensions-3 Levels (EQ-5D-3L) self-administered questionnaire was used by the participants to measure their health at four different time points; two hours prior to cesarean birth, 24 hours following the procedure, one week, and one month thereafter.

Results: At 24 hours, spinal anesthesia resulted in significantly better outcomes for mobility (70% vs. 44% no problems), self-care (8% vs. 11% no issues), and pain (83% vs. 75% moderate pain) ($p<0.05$). After one week, the advantages of spinal anesthesia remained for self-care (78% vs. 44% no problems) and anxiety/depression (66% vs 47% not anxious) ($p<0.05$). After one month post-delivery, health outcomes were similar between anesthesia methods.

Conclusions: The study found that spinal anesthesia offers better health-related quality of life (HRQoL) outcomes than general anesthesia for cesarean delivery. As a result, spinal anesthesia is commonly preferred to as the anesthesia technique for cesarean delivery in many countries.

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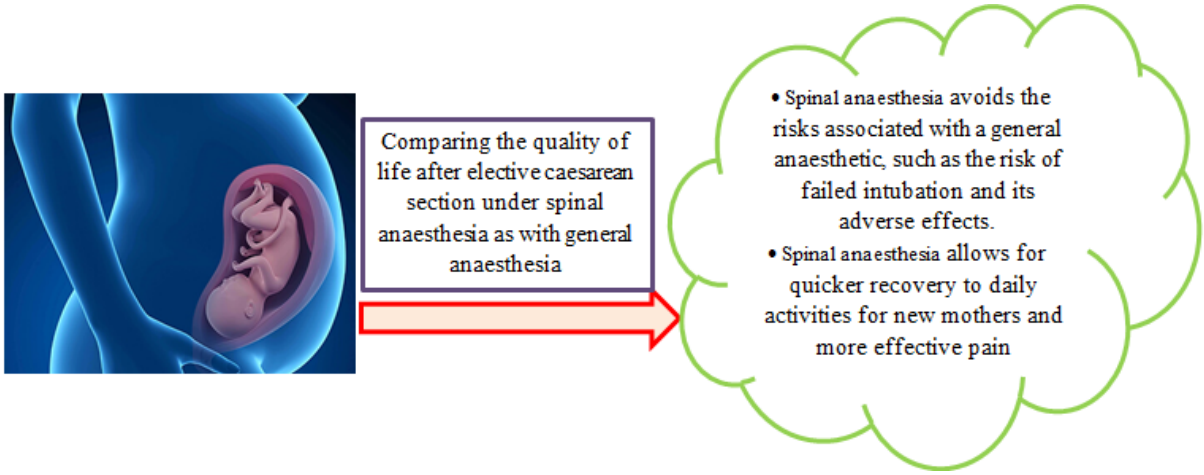
GRAPHICALABSTRACT



Introduction

Childbirth has long been viewed as conferring divine benefits for human reproduction. The method of delivery can have a significant impact on both the mother's and the newborn's health. The most common methods of childbirth include vaginal delivery and cesarean section (CS or C-sections) [1, 2]. Cesarean section is a surgical method of childbirth in which the baby is delivered through an abdominal incision (laparotomy) and an incision in the uterus (hysterotomy) instead of the vaginal canal [3].

Vaginal birth is a natural process, but sometimes a cesarean section is needed to protect the health of the mother and baby. Not using a cesarean section when needed can lead to more maternal and perinatal mortality and morbidity. On the other hand, using a cesarean section when it is not medically necessary does not provide benefits and can be harmful and a waste of resources [4, 5]. According to the most recent data (2010-2018) from 154 countries, which covers 94.5% of global live births, it is observed that approximately 21.1% of women across the world delivered their babies through cesarean sections [6]. Cesarean section rates in Iraq have been increasing. National data indicates the rate rose from 18.0% in 2008 to 24.4% by 2012 [7].

The cesarean section procedure requires the administration of anesthetic agents to alleviate the pain associated with the operation. The two main categories of anesthesia employed in cesarean sections are general anesthesia (GA) and spinal anesthesia (SA) [8, 9]. General anesthesia induces unconsciousness, rendering the patient unaware and unresponsive to painful stimuli throughout the surgery. It is achieved by the inhalation or intravenous administration of anesthetic agents, often supplemented with muscle relaxants [10, 11]. Conversely, spinal anesthesia, a form of regional anesthesia, involves injecting local anesthetics into the subarachnoid space, resulting in sensory and motor blockage below the level of the injection. This method allows the patient to remain conscious throughout the surgery, yet free from pain [12, 13].

Various factors, such as clinical indications, patient preference, and the proficiency of anesthesiologist, often influence the decision-making process when selecting between general anesthesia and spinal anesthesia for a cesarean section [14, 15]. While both methods have their advantages and disadvantages, their differential impacts on the quality of life post-surgery are still a subject of ongoing research. A number of studies have looked at different anesthesia methods for C-sections, comparing things like maternal mortality, pain after surgery, and bleeding [16,17]. Other studies have compared the quality of life after C-sections to vaginal deliveries [18, 19].

However, limited studies have directly compared health-related quality of life between women who had general anesthesia versus spinal anesthesia for their cesarean section. As previously mentioned, there is a growing trend of C-sections procedures, emphasizing the importance of choosing the most suitable anesthesia method that minimizes adverse effects on the quality of life among women undergoing this procedure. Since there is a lack of comprehensive research in the Middle East, specifically in Iraq, on this subject, it was imperative to conduct a study with the objective of comparing the effects of general anesthesia and spinal anesthesia on the quality of life of women undergoing elective cesarean sections.

Materials and Methods

Study design, duration, and setting

A prospective quantitative comparative study design was implemented to evaluate the impact of general and spinal anesthesia on the quality of life of women undergoing elective cesarean section delivery. The present study commenced during the period from 25th January, 2022 to 18th December, 2022. The women were recruited from the operation room, post-operative, and emergency word in Maternity Teaching Hospital in Erbil City, Kurdistan region, Iraq. Established in 1984, the governmental maternity teaching hospital in Erbil City is the sole facility of its kind and comprises 200 beds.

The maternity hospital has eight main departments including (the consultation department, emergency department, delivery room, operative room, postpartum department, postoperative department, Intensive Care Unit (ICU), Neonatal Intensive Care Unit (NICU), and high-risk department) which give maternal health care service, especially emergency and special care for all population of Erbil Governorate.

Sample and sampling method

The study enrolled a total of 200 participants, equally divided into the general anesthesia group (n=100) and the spinal anesthesia group (n=100). A non-probability targeted sampling method was used to select pregnant women who underwent elective cesarean surgery. The sample size was calculated using Epi Info 7 software, considering a confidence level of 95%, a margin of error of 5%, and the total number of women (410). The software recommended a sample size of 198. However, the researcher decided to include 200 participants in the study.

Inclusion criteria

The study participants included primigravida and multigravida pregnant women of Kurdish nationality, between 18-42 years old, with gestational ages of 37-42 weeks. All participants were scheduled for elective cesarean section, were able to communicate effectively, and were willing to take part in the research study.

Exclusion criteria

The exclusion criteria for the study were as follows: Pregnant women who had to switch from spinal anesthesia to general anesthesia during the cesarean section, patients undergoing emergency cesarean section for any reason, those who declined to provide informed consent or refused to participate in the study, those who did not complete the follow-up or failed to answer phone calls after one week or one month, and women with mental or psychological disorders.

Methods of data collection

After several literature reviews and previous studies, the researcher construct the questionnaire and applied it to collect the data using a standard EuroQoL-5 Dimensions-3 Levels (EQ-5D-3L) Health Questionnaire which includes five parts. Part 1 of the study involved collecting socio-demographic data from pregnant women, which included their age, educational level, occupation, place of residence, body mass index (BMI), and mobile phone number.

Part 2: Obstetrical history: This includes the number of gravidae, para, miscarriage, and gestational age in weeks of the fetus which was reported by ultrasound and according to the last menstrual period (LMP) and expected date of delivery (EDD) were taken from the record of pregnant women of both groups.

Part 3: The decision to choose anesthesia by mother or physician request, previous type of anesthesia, number of cesarean sections, and indication of cesarean section.

In Part 4 of the study, the participants were asked to complete the EQ-5D-3L self-administered questionnaire at three different time intervals: 24 hours, one week, and one month after their cesarean section procedure. The questionnaire consisted of questions related to various aspects of their health, including mobility, self-care, usual activities, pain, discomfort, anxiety, and depression. The present study was carried out in the operating room of the Maternity Teaching Hospital. The researcher introduced herself to the pregnant women who were in the waiting room two hours before surgery.

In this study, elective indication was defined as any cesarean section that was previously scheduled with a set admission and surgery appointment.

This definition included both fetal and maternal indications for the procedure. The decision regarding the type of anesthesia used was based on the anesthesiologist's discretion or the patient's preference.

To recruit participants, the study team approached eligible individuals, provided them with a brief explanation of the study's purpose, and obtained their consent to participate.

The investigator interviewed 200 pregnant women divided into two groups according to their type of anesthesia general and spinal. Each interview session in the waiting room and operation room took about 30-45 minutes for each participant until recovery from anesthesia; the purpose of the study was explained to each one of the pregnant women separately in both groups then oral consent was taken from her and completed the basic information forms prepared by the researcher. The information regarding hemoglobin, ultrasound, and urine analysis results were taken from the medical admission chart of pregnant women of both groups of general and spinal anesthesia. After 24 hours of surgery, the researcher met the women in postoperative or emergency word for completing the assessments and after one week and one month postoperative, all participants were offered a phone call with the same questionnaire. The study utilized both general and spinal anesthesia modes standardized according to the hospital's protocols. Prior to the elective cesarean section, all patients underwent an evaluation by an anesthesiologist and were required to fast. The type of used anesthesia was determined through counselling and informed written consent, with the majority of cases administered by senior anesthesia residents. Patients were offered the option to choose between general and spinal anesthesia, without any bias from the anesthesiologists, unless contraindicated by medical conditions. Upon arrival at the operating theatre, two intravenous access sites were prepared, and standard monitoring of blood pressure, electrocardiogram, and oxygen saturation via pulse oximetry were conducted continuously during both the intraoperative and postoperative periods. The study team ensured consistent care for all participants regardless of the anesthesia mode used and followed hospital protocols to minimize the influence of any potential confounding variables on the study's results.

Anesthesia General Women had routine preoperative monitoring for a short time after inhaling oxygen via a face mask for three minutes; anesthesia was then produced using a 2-2.5 mg/kg Propofol ampule or Pentothal vial.

In addition, 0.6 mg/kg of the muscle relaxant cisatracurium (Atracurium) or (Esmeron) was administered with an endotracheal tube as directed and isoflurane to maintain general anesthesia (GA) while the patient was supine and receiving regulated mechanical ventilation and continuous oxygen. Following the baby's delivery and the severing of the umbilical cord, a 3 μg/kg Fentanyl ampul was administered. When the procedure was finished, the anesthetic maintenance was stopped and the neuromuscular blockade was reversed using 2.5 mg of neostigmine and 1 mg of atropine intravenously (IV). When the patient was breathing on their own with a good tidal volume, fully awake patients were extubated with ease.

The L3-L4 or L4-L5 lumbar spines were used for the administration of spinal anesthesia. Using a spinal needle and aseptic method, 10 mg of

Bupivacaine (Marcaine) and 25 µg of Fentanyl were administered intrathecally during the surgery. A test dosage of 3mL of 1% Lidocaine (heavy Xylocain) was given first, and then while the patient was seated and afterward resting on their back, an infusion of 1 mg/mL bupivacaine and 2 µg/mL Fentanyl was given. The surgical procedure was finished with the removal of the epidural catheters. During surgery, patients normally received IV crystalloids at a rate of at least 1500-2000 mL/h, half of which was 0.9% normal saline and the other half was Ringer's lactate solution. Any liquid shortfall was made up as necessary. Regardless of the kind of anesthetic used, prophylactic antibiotics were given in the form of a 1 g vial of Ceftazidime, Ceftriaxone, or Cefotaxime intravenously in both elective and emergency cesarean sections. Phenylephrine or ephedrine was typically given during spinal procedures to address intraoperative arterial hypotension. Ondansetron or 10 mg of metoclopramide IV before starting anesthesia or used during spinal anesthesia for those mothers who have nausea or vomiting. Acetaminophen bottles were used to treat intraoperative headache in most mothers who have post dural puncture headaches which were a result of spinal fluid leaks through the puncture site. The number of standardized parenteral dosages patients sought after leaving the operating room until their complete discharge was the study's definition of post-operative analgesic needs. All ladies received postoperative analgesia. While the patients were still in the hospital, 75 mg of diclofenac sodium was given intramuscularly (IM), 100 mg of pethidine HCL was given intravenously (IV), 1000 mg of acetaminophen was given IV, 10 mg of morphine sulfate was given IV and 50 mg of tramadol HCL was given IM. According to the unique condition and needs of each patient, patients were often given acetaminophen and ibuprofen orally after being discharged. According to hospital regulations, all of the women in both groups got an oxytocin (petocin) infusion at a dosage of 10-20 IU/ml, depending on each patient's condition or blood loss after giving birth.

The present study calculated the length of postoperative hospitalization in days by excluding the day of surgery and counting the number of days spent in the hospital due to maternal surgical indication, maternal medical condition or problem, and neonatal indication.

Statistical analysis

The information was compiled, arranged, and put into a digital file. Data analysis was done using the Statistical Package for Social Sciences (SPSS) version 26 and two methods: Frequency and percentage, mean, and standard deviation. For statistical analysis, the study used the Chi-square test and independent sample t-test. If the P-value was less than 0.05, which would rule out the null hypothesis, it was regarded as statistically significant.

Ethical consideration

The study obtained ethical approval from the Hawler Medical University College of Nursing's Ethical Committee. All participants provided written consent prior to the commencement of the research.

Results and Discussion

Table 1 presents sociodemographic data of participants. The majority of participants (54%) who received general anesthesia fell within the age range of 20 to 29 years while the majority of those (44%) who received spinal anesthesia were between 30 and 39 years old. Regarding education level the result indicates that the highest percentage 25% of general anesthesia group held a primary school degree in comparison with 30% of spinal anesthesia held an institute or university degree. The majority of participants 93% and 77% in both groups were housewives, respectively. The same table indicates that the highest percentage 54% of women in general anesthesia live in rural areas while 52% of women in spinal anesthesia live in urban.

Regarding body mass index, the result mentioned that the highest percentage 40% and 38% of women in both groups were in the group of Body Mass Index (BMI) which represent over weight respectively.

Table 1: The socio-demographic characteristics of the study participants (N = 200)

Variables		General=100		Spinal=100	
		F (%)		F (%)	
Age (year)	<20	7 (7)		4 (4)	
	20-29	54 (54)		41 (41)	
	30-39	35 (35)		44 (44)	
	≥40	4 (4)		11 (11)	
	Mean (Std) = 27.880 (5.8175)			Mean (Std) =30.090 (6.7136)	
Education Level	Illiterate	19 (19)		13 (13)	
	Can read and Write	7 (7)		8 (8)	
	Primary School	25 (25		27 (27)	
	Intermediate School	17 (17)		13 (13)	
	High School	10 (10)		9 (9)	
	Institution and University	22 (22)		30 (30)	
Occupation	House wife	93 (93)		77 (77)	
	Governmental-employment	6 (6)		18 (18)	
	Student	1 (1)		5 (5)	
Residency	Urban	46 (46)		52 (52)	
	Rural	54 (54)		48 (48)	
BMI	Under weight	8 (8)		18 (18)	
	Normal	39 (39)		28 (28)	
	Over weight	40 (40)		38 (38)	
	Obese	13 (13)		16 (16)	
		Mean (Std) = 25.4 (5)		Mean (Std) = 25.9 (5)	
	P-Value= 0.310				

**Chi-square tests, t-test.*

Table 2: Obstetric history regarding the spinal and general anesthesia (N= 200)

Variables		General Anesthesia		Spinal Anesthesia	
		F (%)		F (%)	
Gravida	Primigravida	15 (15)		22 (22)	
	Multi gravity	65 (65)		45 (45)	
	Grand multi gravity	20 (20)		33 (33)	
Para	None	21 (21)		22 (22)	
	1-2	60 (60)		47 (47)	
	3-4	16 (16)		23 (23)	
	5 and above	3 (3)		8 (8)	
Previous miscarriage	None	63 (63)		51 (51)	
	1-3	36 (36)		47 (47)	
	4 and above	1 (1)		2 (2)	
GA (gestational age)	37 weeks	27 (27)		26 (26)	
	38-39	68 (68)		63 (63)	
	40-42	5 (5)		11 (11)	
Total		100		100	

**Chi-Square test*

Table 3: Distribution of participants according to choose of anesthesia and previous anesthesia (N= 200)

Variables		General Anesthesia		Spinal Anesthesia	
		F (%)		F (%)	
The decision to choose types of anesthesia made by	Mother's request	13 (13)		47 (47)	
	Physician request	87 (87)		53 (53)	
Number of CS (cesarean section)	None	26 (26)		38 (38)	
	1-2	56 (56)		55 (55)	
	3-4	17 (17)		7 (7)	
	5 and above	1 (1)		0 (0)	
Previous spinal anesthesia	No	92 (92)		78 (78)	
	Yes	8 (8)		22 (22)	
Previous general anesthesia	No	35 (35)		56 (56)	
	Yes	65 (65)		44 (44)	
Total		100		100	

**Chi-Square test*

Table 2 reveals that the highest percentage 65% and 45% of the participants in both general and spinal anesthesia were in multi-gravity respectively, also the percentage 60% and47% of both general and spinal group had1-2 Para, respectively. Regarding miscarriage the result indicates that the highest percentage 63% and 51% of the women in both groups were previously miscarriage zero respectively. In addition, over half 68% and 63% of study sample in both general and spinal anesthesia were between 38-39 weeks of gestational age of pregnancy respectively.

Data on the research participants' choice of anesthetic kinds are presented in Table 3. The highest percentage 87% and 53% responded that the decision to choose types of anesthesia made by Physician's request for both general and spinal anesthesia.

In addition, the highest percentage 56% and 55% of study sample of participant in both groups were having previous 1-2 cesarean sections. Regarding the previous spinal anesthesia, the finding showed that the majority 92% and 78% of study sample in both groups did not have previous type of anesthesia. Otherwise, more than half 65% of the women in general anesthesia have previous general anesthesia, while over half 56% of study sample in spinal anesthesia were have previous general anesthesia.

Table 4 mentioned the descriptive statistics about 5 dimensions of health after 24 hours postoperatively. The results showed statistically significant differences favouring spinal anesthesia in mobility ($p<0.05$), self-care ($p<0.05$), and pain/discomfort ($p<0.05$). Specifically, 70% of spinal anesthesia patients had no mobility problems compared to only 44% of general anesthesia patients. For self-care, only 8% of spinal patients reported no problems versus 11% of general patients. Moderate pain was reported in 83% of spinal patients compared to 75% of general patients. No significant differences were seen between the two anesthesia methods for activities ($p>0.05$) or anxiety/depression ($p>0.05$).

Table 5 indicates the descriptive statistics about 5 dimensions of health at one week postoperatively. This table shows that there was no significant difference in mobility between the general (89% no problems) and spinal (91% no problems) anesthesia groups ($p>0.05$). However, significantly more spinal anesthesia subjects reported no problems with self-care (78% vs. 44%, $p<0.05$) and no anxiety/depression (47% vs. 66%, $p<0.05$) compared to the general anesthesia group. There were no differences between groups regarding ability to perform usual activities ($p>0.05$). A higher percentage of general anesthesia subjects reported no pain/discomfort (42% vs. 54%, $p<0.05$).

Table 4: Comparison between general and spinal anesthesia regarding 5 dimensions of health of the study sample after 24 hours postoperative (N= 200)

Variables		General Anesthesia		Spinal Anesthesia		P-value
		F	%	F	%	
Mobility	I have no problems in walking about.	44	44	70	70	0.001
	I have some problems in walking about.	34	34	20	20	
	I am confined to bed.	22	22	10	10	
Self-Care	I have no problems with self-care.	11	11	8	8	0.001
	I have some problems with washing or dressing myself.	0	0	44	44	
	I am unable to wash or dress myself.	89	89	48	48	
Activities	I have no problems with performing my usual activities.	0	0	0	0	0.410
	I have some problems with performing my usual activities.	4	4	2	2	
	I am unable to perform my usual activities.	96	96	98	98	
Pain / Discomfort	I have no pain or discomfort.	2	2	4	4	0.050
	I have moderate pain or discomfort.	75	75	83	83	
	I have extreme pain or discomfort.	23	23.0	13	13	
Anxiety / Depression	I am not anxious or depressed.	67	67	74	74	0.327
	I am moderately anxious or depressed.	23	23	18	18	
	I am extremely anxious or depressed.	10	10	8	8	
Total		100	100	100	100	

Table 5: Comparison between general and spinal anesthesia regarding 5 dimensions of health of the study sample at one-week postoperative (N = 200)

Variables		General Anesthesia		Spinal Anesthesia		P-value
		F	%	F	%	
Mobility	I have no problems in walking about.	89	89	91	91	0.827
	I have some problems in walking about.	11	11	8	8	
	I am confined to bed.	0	0	1	1	
Self-Care	I have no problems with self-care.	44	44	78	78	0.001
	I have some problems with washing or dressing myself.	46	46	19	19	
	I am unable to wash or dress myself.	10	10	3	3	
	Usual Activities (e.g., work, study, housework, family, or leisure.	0	0	0	0	
Activities	I have no problems with performing my usual activities.	65	65	50	50	0.331
	I have some problems with performing my usual activities.	17	17	29	29	
	I am unable to perform my usual activities.	18	18	21	21	
Pain Discomfort	I have no pain or discomfort.	42	42	54	54	0.034
	I have moderate pain or discomfort.	55	55	42	42	
	I have extreme pain or discomfort.	3	3	2	2	
Anxiety / Depression	I am not anxious or depressed.	66	66	47	47	0.001
	I am moderately anxious or depressed.	27	27	32	32	
	I am extremely anxious or depressed.	7	7	21	21	
Total		100	100	100	100	

**Chi-square tests*

Table 6: comparison between general and spinal anesthesia regarding 5 dimensions of health of the study sample after one-month postoperative (N = 200)

Variables		General Anesthesia		Spinal Anesthesia		P-value
		F	%	F	%	
Mobility	I have no problems in walking about.	100	100	100	100	0.1000
Self-Care	I have no problems with self-care.	96	96	99	99	0.176
	I have some problems with washing or dressing myself.	4	4	1	1	
Activities	I have no problems with performing my usual activities.	93	93	92	92	0.674
	I have some problems with performing my usual activities.	6	6	6	6	
	I am unable to perform my usual activities.	1	1.0	2	2	
Pain / Discomfort	I have no pain or discomfort.	92	92	95	95	0.392
	I have moderate pain or discomfort.	8	8	5	5	
	I have extreme pain or discomfort.	0	0	0	0	
Anxiety / Depression	I am not anxious or depressed.	84	84	81	81	0.325
	I am moderately anxious or depressed.	16	16	16	16	
	I am extremely anxious or depressed.	0	0	3	3	
Total		100	100	100	100	

**Chi-square tests*

Table 6 presents the descriptive statistics about 5 dimensions of health after one month postoperative. For mobility, 100% of patients in both groups had no problems walking (p>0.05). For self-care, 96% of the general anesthesia group and 99% of the spinal group had no issues (p>0.05), with 4% and 1% reporting some problems washing/dressing, respectively. On usual activities, 93% and 92% of the general and spinal groups had no problems (p>0.05), 6% and 6% had some problems, and 1% and 2% were unable to perform usual activities. Regarding pain/discomfort, 92% and 95% of the general and spinal groups had none (p>0.05), 8% and 5% had moderate pain, and 0% and 0% had extreme pain. For anxiety or depression, 84% and 81% of the general and spinal groups were not anxious or depressed (p>0.05), 16% and 16% were moderately anxious or depressed, and 0% and 3% were extremely anxious or depressed.

Because vaginal birth still presents lower risks for maternal and perinatal mortality and morbidity than cesarean delivery, this study examined the effects of spinal and general anesthetic on quality of life during cesarean sections. The present study found that spinal anesthesia was associated with better overall recovery than general anesthesia in the early postoperative period. Specifically, spinal anesthesia patients had less difficulty with mobility and self-care and experienced less pain in the first 24 hours after surgery. However, after one week and one month postoperatively, there were few differences between the two anesthesia groups in terms of mobility, activities, pain levels, and psychological wellbeing.

A study by Ghaffari *et al.* (2018), investigated the effect of spinal versus general anesthesia on quality of life in women undergoing cesarean delivery on maternal request. The study found that more women who underwent spinal anesthesia reported "no problem" with respect to mobility, self-care, and usual activities at various time points after the cesarean delivery.

Furthermore, the EQ-5D general health score was higher 24 hours after cesarean delivery with regional anesthesia compared to general anesthesia. This indicates that spinal anesthesia may provide a better quality of life outcomes for women undergoing cesarean sections [20]. Reddy *et al.* (2021) also conducted a study with the aim of investigating the effect of general anesthesia versus spinal anesthesia on the quality of life of women undergoing cesarean section. The results of Nit's study confirm the results of Ghaffari's study and are consistent with the results of the present study [21].

The findings of the present study revealed that fewer women opted for spinal anesthesia as their preferred anesthetic technique. The degrees of "Pain/Discomfort" felt by women 24 hours and one month following a cesarean birth were reported in the current study. Effective pain management is essential, especially following a cesarean birth since uncontrolled pain can severely influence the care of the mother and her baby. The results of the current study are consistent with this notion since patients who got spinal anesthetic experienced less discomfort right away after the procedure. In addition, retrospective research comprising 857 individuals who had elective cesarean deliveries found that greater pain levels in the early postoperative period were a significant independent risk factor for persistent pain following cesarean birth (19) [22]. In addition, Eisenach *et al.* (2008) found that women who experienced severe acute postpartum pain had a 2.5-fold greater likelihood of developing persistent pain than those who reported mild postpartum pain [23]. Successful pain management after cesarean delivery can positively affect new mothers. It has been demonstrated that effective pain management following cesarean birth improves the quality of life [24], which is more commonly achieved with spinal anesthesia than general anesthesia. This may be explained by the fact that pain medication makes it possible for the mother to be more compassionate, vivacious, and active during this time, when she assumes the role of motherhood, which includes many novel tasks like breastfeeding and infant care.

The present study found that more pregnant women who had spinal anesthesia for cesarean delivery reported no issues with mobility and self-care like washing and dressing 24 hours after the surgery, compared to women who had general anesthesia. Moreover, more women who had spinal anesthesia reported no problems resuming their usual daily activities 1 week and 1 month after the cesarean delivery versus women with general anesthesia. Consistent with our findings, Gursoy *et al.* (2014) showed that neuraxial anesthesia enables patients to return to normal daily activities earlier than general anesthesia. Because, the mobility, self-care, and activities scores were higher 24 hours and one week after cesarean delivery with spinal anesthesia compared to general anesthesia [25].

Conclusion

After conducting our study, we have arrived at the conclusion that spinal anesthesia is the superior method for cesarean births in comparison to general anesthesia. This is not only because it eliminates the risks associated with general anesthesia, such as the potential for failed intubation and its associated complications, but also because it facilitates faster recovery and more effective pain management, leading to a better quality of life for mothers.

Acknowledgements

The authors would like to thank the staff and anesthesiology team at Maternity Teaching Hospital for their help and support during the research study. They appreciate their cooperation which was invaluable in enabling the author to conduct the research, and also, they are grateful to the women who participated in the study.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Authors' Contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

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HOW TO CITE THIS ARTICLE
Sahar Ismail Abdulla*, Awaz Aziz Saeed, Abubakir Majeed Salih, Comparison of the Effects of General Anesthesia and Spinal Anesthesia on Quality of Life among Women Undergoing Elective Cesarean Section in Erbil City/Iraq. *J. Med. Chem. Sci.*, 2023, 6(12) 3198-3209.
DOI: https://doi.org/10.26655/JMCHEMSCI.2023.12.33
URL: https://www.jmchemsci.com/article_178166.html