TO STUDY THE ACCEPTANCE BETWEEN GENERAL ANESTHESIA AND SPINAL ANESTHESIA AMONG PREGNANT WOMEN UNDERGOING ELECTIVE CAESAREAN SECTIONS AT A TERTIARY CARE CENTRE, IN INDIA.

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ABSTRACT

Introduction: 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.

Aim and Objective: This study aims to compare the impacts of GA and SA on the quality of life among women who undergo elective C-sections.

Material and Methods: This was a Cross sectional study carried out for a period of 1 year i.e, March 2023 to March 2024.This study was carried comparatively on 716 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 hospital.

Results: In the present study a total of 716 patient's includes majority of participants (39.38%) fell within the age range of 21 to 30 years. Regarding education level the result indicates that the highest percentage 37.56% held a primary school degree. The majority of participants 44.13% were housewives, respectively43% of study participants had chosen spinal anesthesia before, 29.18% chose general anesthesia, and 28.21% couldn't choose either.Reasons for general anesthesia were reported mostly in fear of pain during surgery (17.03%) and Reasons to choose spinal anesthesia were as mostly in desire to be alert at the time of the birth of the baby (27.93%).

Conclusion: The study found that spinal anesthesia offers betteroutcomes 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.

Key words : Cesarean section, General anesthesia, Spinalanesthesia, Elective C- sections

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 Csections) [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]. 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 caesarean sections [4].

Anesthesia used for cesarean section is either general or regional. The advantages of general anesthesia include the facilitation of a rapid procedure in obstetric emergencies and loss of consciousness, which ensures less distress to parturient women. The disadvantages of general anesthesia include the possibility of aspiration pneumonia, maternal awareness during the operation due to inadequate anesthesia, failed intubation, and respiratory complications in the mother and newborn. Many intravenous anesthetic agents injected into the mother can cross the placental barrier and enter fetal circulation and may cause sedation or respiratory depression of the newborn.The two types of regional anesthesia used for cesarean sections are spinal and epidural anesthesia. The advantages of regional anesthesia include reduced complications associated with general anesthesia and promotion of initial bonding between the mother and the baby (because the mother is awake during the operation) [5].

An elective cesarean section is a common surgical procedure performed on pregnant women, and the choice of anesthesia is an important consideration. In both general anesthesia (GA) and spinal anesthesia (SA) are used for elective cesarean sections, with each being chosen based on its safety and ability to help both the mother and fetus, but acceptance of these techniques among pregnant women varies [6].

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 [7, 8]. 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 [9, 10].

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 [11, 12]. 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 [13,14]. Other studies have compared the quality of life after C-sections to vaginal deliveries [15, 16].
Therefore, the present study aimed to determine theacceptance between general anesthesia and spinal anesthesia among pregnant women undergoing elective caesarean sections at a tertiary care centre, India.

Materials and Methods

A cross-sectional, questionnaire-based study design was conducted in tertiary care hospital among pregnant women from 2023 to 2024. The respondents (pregnant women) were randomly invited to participate by filling out a questionnaire to measure the prevalence of acceptance between general anesthesia and spinal anesthesia in patients with elective cesarean sections.

Inclusion criteria

The study participants included pregnant women of age group 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.

Study sample

The sample size was determined using the Raosoft software (Raosoft Inc., Seattle, Washington, USA), preset to a 95% confidence level and a 5% confidence interval (CI). The sample size of the study was 813 participants, pregnant women between the ages of 18 and 45, across different regions.

Study setting

The study survey was distributed in Hindi and English in the form. The data were analyzed using the IBM SPSS software version 27.0.1(IBM Corp., Armonk, New York, USA).

Data collection

The data was collected from patients at a tertiary care centre. Ethical consent to collect personal data was obtained from pregnant women; the goal of the study was explained, and they were informed that participation is voluntary and not compulsory; they have the right to withdraw from the study at any time; and the participants can ask any question related to the study. All the data were collected and processed for the study only. The confidentiality and anonymity of participants were upheld to protect their privacy. Data were collected using a questionnaire that only investigators had access to.

The collected data were automatically linked to a Spreadsheet file, a standard feature in Google Forms.

Statistical analysis

All data were entered in Microsoft Office Excel (Microsoft Corporation, Redmond, Washington, USA) and then transferred to IBM SPSS software. All statistical analyses were executed using IBM SPSS version 27.0.1. Descriptive statistics of the participants' sociodemographic characteristics were expressed in the form of frequencies and percentages. Quantitative data were presented as the mean and standard deviation. Qualitative variables were summarized using frequencies and percentages. A chi-square test was used to test associations between categorical variables. A P-value of < 0.05 was considered statistical significance with a 95% confidence level at 5% CI.

Results

This study includes 716 patient's majority of participants (39.38%) fell within the age range of 21 to 30 years, 26.25% were 31-40 yearsand 26.67% were more than 40 years(Table no. 1). The Table no. 2 indicates that the highest percentage 88.82% of women in anesthesia live in city areas while 11.17% of women inanesthesia live in village. Table no.3 indicates 29.18% of participants worked in government jobs, 15.50% in the private sector, and 44.13% were housewives. Regarding educational level the result indicates that the highest percentage in primary school (37.56 %), institute or university(27.93%), and illiterate (15.08%) (Table no.4).

Age (years)	No.	Percentage
<20	55	7.68%
21-30	282	39.38%
31-40	188	26.25%
>40	191	26.67%

Table No. 1: Showing Age wise distribution.

Place of residence	No.	Percentage
city	636	88.82%
village	80	11.17%

Table No. 2:Showing place of Residence.

OCCUPATION	NO.	PERCENTAGE
Government job	209	29.18%
Private sector	111	15.50%
Self employed	45	6.28%
Student	35	4.88%
Housewife	316	44.13%

Table No. 3: Showing the Occupation of patients

Education level	No.	Percentage
Illiterate	108	15.08%
Primary school	269	37.56%
Intermediate school	70	9.77%
High school	69	9.63%
Institution & university	200	27.93%

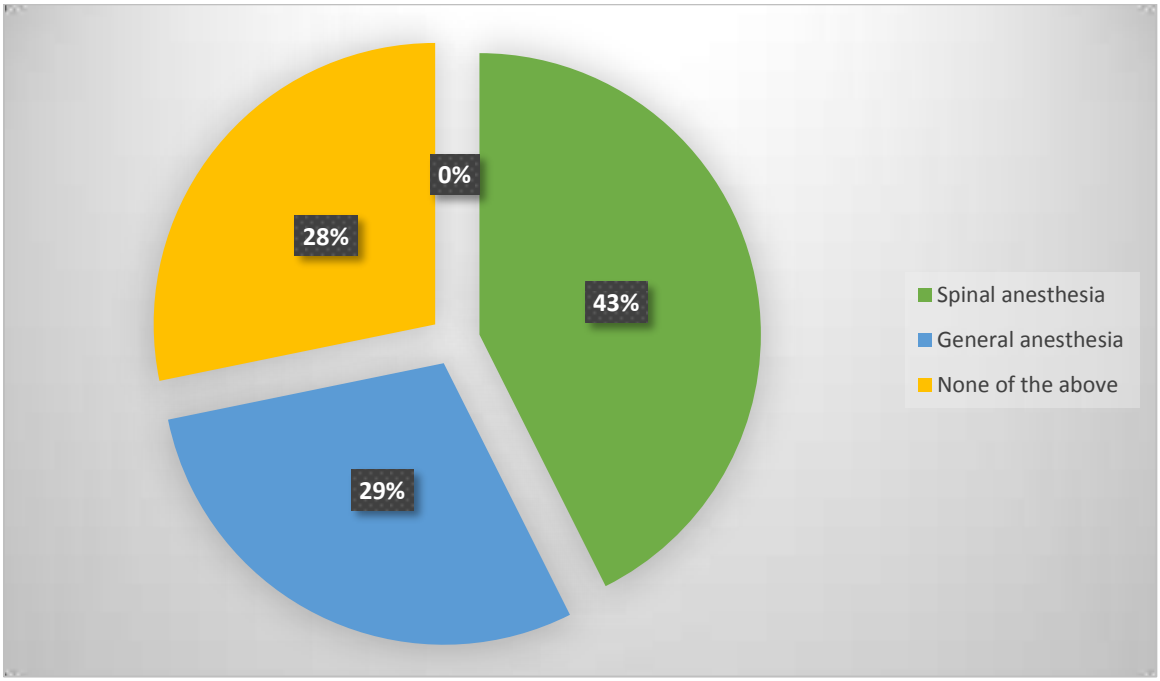
Table No. 4: Showing the Education level of patients.

This presentstudy identifies multiple factors associated with choice of anesthesia, where 20.1% of participants reported first pregnancy, 24.72% second pregnancies, and 21.64% fifth or more. It was observed that as for parity 21.64% reported once, 18.85% reported twice and 30.02% reported four or more. Additionally, 20.53% reported a history of preterm labor; 45.39% of participants reported that they had been recommended by non-medical staff to undergo spinal anesthesia; 7.68% had been recommended to undergo general anesthesia; and 46.92% received no recommendations at all (Table no. 5).

Parameters		
Number of previous pregnancies	First pregnancy	144 (20.1%)
	Second pregnancy	177(24.72%)
	Third pregnancy	130(18.15%)
	fourth pregnancy	110(15.36%)
	Fifth or more	155(21.64%)
Parity	Never	98(13.68%)
	Once	155 (21.64%)
	Twice	135(18.85%)
	Three times	113(13.78%)
	Four or more	215(30.02%)
History of preterm labor	Yes	147 (20.53%)
	No	569 (79.46%)
Recommended to undergo general or spinal anesthesia by non-medical staff	No recommendation by non-medical staff	336 (46.92%)
	Spinal anesthesia	325 (45.39%)
	General anesthesia	55 (7.68%)

Table No. 5:Participants' determinants and their association with choosing General or Spinal Anesthesia.

Graph No.1:43% of study participants had chosen spinal anesthesia before, 29.18% chose general anesthesia, and 28.21% couldn't choose either.



Graph No. 1:Participants' Previous Experience with General or Spinal Anesthesia.

Reasons for general anesthesia were reported as follows: fear of pain during surgery (17.03), fear of being paralyzed (12.84%), fear of back pain (14.24%) and fear of needles in the back (11.03%). Reasons to choose spinal anesthesia were as follows: fear of pain (10.47%), desire to be alert at the time of the birth of the baby (27.93%), fear of nausea and vomiting(10.05%), fear of urinary retention (8.37%), and fear of not being able to breastfeed (12.29%). (Table no. 6)

Parameters		
Reason to choose general anesthesia	Fear of pain during surgery	122 (17.03%)
	Fear of back pain	102 (14.24%)
	Fear of being paralyzed	92 (12.84%)
	Fear of needles in the back	79 (11.03%)
	I didn't choose general anesthesia	321 (44.83%)
Reason to choose spinal anesthesia	The desire to be alert at the time of the birth of the baby	200 (27.93%)
	Fear of pain	75 (10.47%)
	Fear of not being able to breastfeed	88 (12.29%)
	Fear of urinary retention	60 (8.37%)
	Fear of nausea and vomiting	72 (10.05%)
	I didn't choose spinal anesthesia	221

		(30.86%)

Table No.: 6 Reasons for choosing General or Spinal Anesthesia.

Discussion

The proportion of women giving birth by cesarean delivery has increased in both developed anddeveloping countries [17]. One frequently proposed explanation is cesarean delivery on maternalrequest (CDMR). CDMR refers to a primary cesarean delivery performed because the motherrequests this method of delivery in the absence of standard medical/obstetrical indications. Theprevalence rate of CDMR in all cesarean deliveries is 1-18% globally and less than 3% in theUnited States [18, 19].

For CDMR, both general and neuraxial are two anesthesia modalities, which have shown equivocal findings with respect to 1- and 5-minutes Apgar scores, umbilical artery pH values andtotal time in operating room [20].Since health care is becoming more and more patient centered, patient-reported outcomes suchas Health Related Quality of Life (HRQoL) is becoming increasingly important especially in thearea of pregnancy and childbirth [21]. Several studies have compared anesthesia modalities incesarean delivery regarding clinical outcomes in terms of maternal mortality, post-operativepain and bleeding [22-24], and some other studies have compared the quality of life aftercesarean with vaginal delivery [25-27]. However, none of them have compared HRQoL among women undergoing general anesthesia versus spinal anesthesia in cesarean delivery.
Our study demonstrated the Acceptance between General Anesthesia and Spinal Anesthesia among Pregnant Women undergoing Elective Caesarean Sections at a Tertiary Care Centre, India. In this present study 716 patient's majority of participants (39.38%) fell within the age range of 21 to 30 years, 26.25% were 31-40 years and 26.67% were more than 40 years which was similar to the study performed by the other author where the maximum age range from 21-30 years by Abdulla et al [28], Ghaffari et al[29] and Reem A Algarni et al [30].
In the present study 29.18% of participants worked in government jobs, 15.50% in the private sector, and 44.13% were housewives. Regarding educational level the result indicates that the highest percentage in primary school (37.56 %), institute or university (27.93%), and illiterate (15.08%). This finding was in accordance with other study by Abdulla et al[28], Ghaffari et al[29] and Tawfeeq et al [31].
In our study it was observed that spinal anesthesia was associated with better overall recovery than general anesthesia. 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.
In the present study 43% of study participants had chosen spinal anesthesia and 29.18% chose general anesthesia, and 28.21% couldn't choose either . This finding was in accordance with a study

by Tawfeeq et al [31] where 54% of study participants had chosen spinal anesthesia before, 22% chose general anesthesia, and 24% couldn't or didn't choose either and the similar finding by Ghaffari et al[29] , Gursoy et al[32]and Reddy et al[33]were 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.

In the current study the reasons for general anesthesia were reported as fear of pain during surgery (17.03) fear of being paralyzed (12.84%) fear of back pain (14.24%) and fear of needles in the back (11.03%) and reasons to choose spinal anesthesia were as fear of pain (10.47%), desire to be alert at the time of the birth of the baby (27.93%), fear of nausea and vomiting(10.05%), fear of urinary retention (8.37%), and fear of not being able to breastfeed (12.29%). This finding is similar to other study by Bukar et al[34], Fassoulaki et al[35] and Tawfeeq et al[31].

In our study, more women in the SA group had previous experience of spinal anesthesia compared to GA group which may be due to high satisfaction level with spinal anesthesia. One study showed that the women who underwent cesarean delivery under spinal anesthesia demonstrated a high rate of patient satisfaction and would choose spinal anesthesia in the future, if required.

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.

Declarations:

Conflicts of interest: There is no any conflict of interest associated with this study

Consent to participate: We have consent to participate.

Consent for publication: We have consent for the publication of this paper.

Authors' contributions: All the authors equally contributed the work.

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