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EVALUATING FREQUENCY OF PATIENT REFUSAL FOR REGIONAL ANESTHESIA AND ASSOCIATED FACTORS, A CROSS-SECTIONAL STUDY AT LADY READING HOSPITAL, PESHAWAR, KPK

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ABSTRACT

Background: *Most surgical procedures are usually carried out with the help of anesthesia. Two main types of anesthesia are frequently employed: general anesthesia (GA) and regional anesthesia (RA). However, there is a lack of documented data regarding regional anesthesia in our country. Our study indicates that a significant number of patients choose general anesthesia (GA), primarily due to a lack of awareness about the benefits associated with regional anesthesia (RA).*

Objectives of the Study: *To evaluate the frequency of patient refusal and associated factors for 'Regional Anesthesia' in the adult population at Lady Reading Hospital in Peshawar, Khyber Pakhtunkhwa (KPK).*

Materials and Methods: *A cross-sectional study was conducted at Lady Reading Hospital (LRH) in Peshawar, Khyber Pakhtunkhwa (KPK), following the necessary permissions and approval from the hospital's ethical board. Our study included a total sample size of 190 participants. Analysis of data was performed by utilizing the SPSS (version 22.0).*

Results: *In this study, 61.1% of patients were aware of regional anesthesia, while 38.4% were unaware. Our study revealed that two major factors were responsible for refusal of regional anesthesia. The most significant factor was the negative perception being heard about regional anesthesia with a (P value of 0.00) while the other factor was the patient's concern being awake (P= 0.028) during the procedure.*

Conclusion: *Our observation found a notable choice for general anesthesia (GA) instead of regional anesthesia among patients. The primary reason for this choice was their concern about regaining consciousness during the surgical procedure. Secondly, negative perceptions about regional anesthesia that they had heard significantly influenced their decision.*

Keywords: *General Anesthesia, refusal for regional anesthesia, Consciousness*

INTRODUCTION

Almost all surgical procedures are carried out with the help of anesthesia (1). There are two major types: general anesthesia (GA) and regional anesthesia (RA) (2). Regional anesthesia involves the use of anesthetic drugs to reduce sensation in a specific area of the body (e.g., a regional block). This type of anesthesia relieves pain and numbs a particular part of the body, allowing various surgical operations to be performed (3). Unlike

general anesthesia, regional anesthesia enables patients to remain conscious and breathe independently throughout the operation or other invasive procedures by numbing only the surgical site (2).

Regional anesthesia includes three main types: spinal anesthesia, epidural anesthesia, and peripheral nerve blocks. Spinal anesthesia, the most frequently used, involves injecting local anesthetics into the cerebrospinal fluid to numb the lower body, whereas epidural anesthesia targets specific regions by administering anesthetics into the epidural space (3).

Compared to the general anesthesia (GA), RA combined with closely watched anesthetic treatment makes for a safer procedure with fewer complications and side effects thereafter (2)(5).

RA enables patients to retain control of their respiratory function, facilitating a quicker postoperative recovery (8). As a result, healthcare facilities can discharge the patients who have undergone RA faster than those recovering from general anesthesia (GA) (9). The practice of giving regional anesthesia has markedly advanced since the initial utilization of local anesthetics for surgical procedures in the late 1800s (3).However, patients often choose general anesthesia (GA) over this type of treatment (9). As, refusal of patient is an absolute contraindication to RA, therefore many patients do not benefit from this method (16).

Orthopedic, General and Urological patients' perioperative pain management can benefit from the use of regional anesthesia (RA) (5). Better analgesia is provided, enabling early rehabilitation and early discharge. For major surgical procedures, general anesthesia (GA) has long been considered as the "gold standard" by both surgeons and patients (2). However, RA is now more appealing to patients and surgeons due to the development of better methods and catheters for ongoing peripheral nerve blocks (24). While RA techniques are widely employed for orthopedic, general and urology surgeries in many hospitals, the common most contraindication to RA in current clinical practice is patient refusal (16). The field of total knee, total hip arthroplasty, ILN tibia and femur, inguinal hernia, hemorrhoidectomy, percutaneous nephron-lithotomy (PCNL), TURBT and other possible surgeries in general, orthopedic and urology OTs with RA, has been significantly impacted by advancements in pain management over the past ten years. While there exist several instances of postoperative pain management treatments available, no clear gold standard has yet been identified. For an outpatient presenting in these OTs, either GA or epidural anesthesia give adequate anesthesia; the patient's preference may be the main consideration in selecting the anesthetic method (25).

Smith et al. (2015) wrote in their research paper that patient satisfaction has become a critical measure in anesthesia choices, reflecting the quality of care received. They noted that satisfaction often correlates more with patient experiences than the technical aspects of anesthesia. Furthermore, their research suggests that personal consultations can help ease anesthesia-related anxiety; however, limited studies have directly addressed patient concerns. In a study from Busan, Korea, Kim et al. (2010) found that 3.7% of 1,197 patients were dissatisfied with spinal anesthesia, citing issues such as paresthesia during puncture, multiple attempts, and postoperative problems like nausea and back pain. Additionally, 3.2% expressed unwillingness to choose spinal anesthesia again due to these experiences.

Jones and Patel (2018), in their research on regional anesthesia (RA) refusal in orthopedic and cesarean cases worldwide, identified common reasons for refusal, including fear of intraoperative awareness, needle pain, and postoperative symptoms such as nausea and backache. Alvi et al. (2016), in a Karachi study involving 549 orthopedic patients, found that 33.1% declined regional anesthesia (RA), with female patients commonly fearing awareness during surgery. Similar trends were noted in studies from Gandhi Memorial Hospital, Korea, and Gonder, where back pain and fear of being conscious were primary concerns.

Additionally, Mensah et al. (2017), in a study conducted in Ghana, found that 13% of women reported discomfort as a reason for rejecting future spinal anesthesia.

Problem Statement:

Regional anesthesia (RA) has become increasingly common for various surgical procedures, particularly in orthopedic, urological, and general surgeries(33, 34). However, patient refusal of RA poses significant challenges for healthcare providers, especially anesthetists. A prior cross-sectional study in an elderly orthopedic population at a tertiary care hospital in Karachi identified key reasons for refusal: the surgeon's

preference (38.5%), fear of being awake (24.1%), and lack of awareness about RA (20.3%). This study, however, focused solely on elderly patients(19).

Our study aims to assess the frequency of RA refusal among adults undergoing general, orthopedic, and urological surgeries. The insights gained will enable healthcare providers to better understand patient concerns and develop targeted strategies to address them.

Study Significance:

The study highlights the cause of refusal of RA by the patients in adult population undergoing general, urology and orthopedic surgeries. At first, this study was conducted in elderly orthopedic population in Karachi, Pakistan. This research study is yet to be conducted in Peshawar (KP), Pakistan. That is why we decided to conduct our research on 'Frequency of Patient's refusal for RA particularly in adult population in tertiary care hospital, Peshawar (KP).Furthermore, this study can be helpful in better communication between the surgeon, anesthesiologist and patient, which can result in better outcomes and satisfaction of patients.

MATERIAL AND METHODS

This cross-sectional study, conducted over four months from June 1st to September 15th 2023 , aimed to investigate the reasons behind patient refusal of regional anesthesia. The research took place at Lady Reading Hospital in Peshawar, Khyber Pakhtunkhwa. Sample size was calculated using the World Health Organization's formula, resulting in 190 participants based on a 95% confidence level and a 5% margin of error. A convenient non-probability sampling method was employed to distribute questionnaires to patients undergoing general, orthopedic, and urological surgeries. Inclusion criteria encompassed adults aged over 18, including both males and females, specifically those classified as ASA class I, II, and III. Exclusion criteria included patients who declined to participate, those with language barriers, and individuals with psychological or intellectual disabilities. Participants provided verbal informed consent prior to data collection, which was approved by the ethical committee of Khyber Medical University and the ethical board of Lady Reading Hospital. A structured questionnaire with clear, simple questions was used to gather data, combining multiple-choice and "yes/no" formats. Data collection focused on patients who refused regional anesthesia, conducted in a respectful manner, and continued until the target sample size was achieved. Interviews were carried out in the pre-operative room, ensuring thorough documentation of refusal reasons. Following data collection, the information was analyzed using SPSS version 22.0.

RESULT

A total of 190 patients were chosen for the study, with a mean age of 39.65 and a standard deviation of 14.6, as illustrated in Figure 3.1 below. The study included patients from ASA classes I, II, and III. Specifically, 82.2% of the patients fell into ASA class I, 16.8% into ASA class II, and the remaining 0.5% were classified as ASA class III patients.

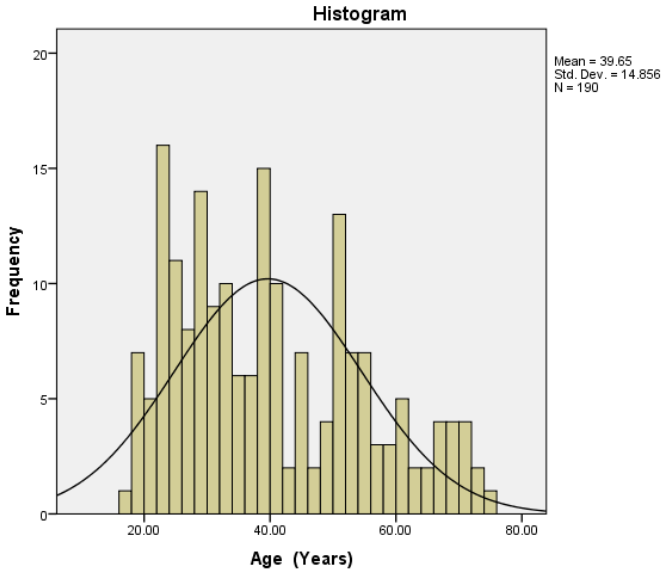

Figure 3.1 Age in Years

A higher proportion of males was included compared to females, with males constituting 70% of the population and females making up 30%, as shown in Figure 3.2.The results showed respondents with multiple professions, including laborers (49), housewives (48), students (32), business professionals (17), government employees (both current and retired) (15 each), and drivers (14).

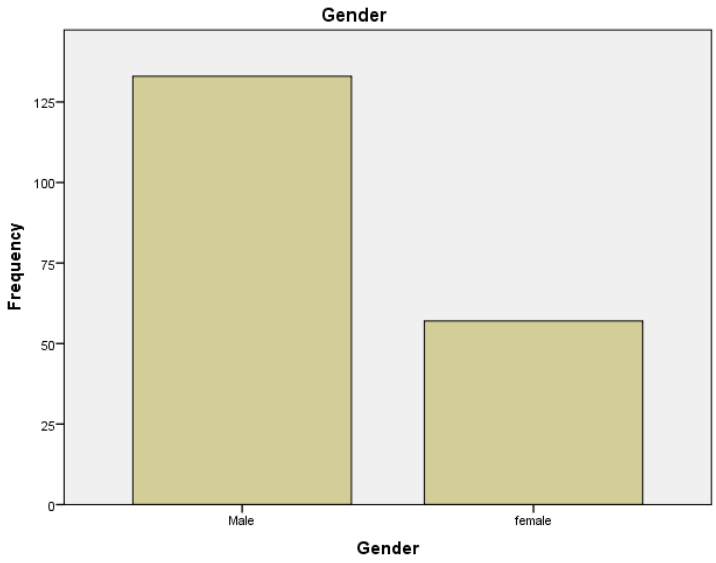

Figure 3.2 Gender

In total, 50% of the participants had a history of prior exposure to anesthesia. Within this group, 15.8% received general anesthesia, 36.3% received regional anesthesia, and 47.9% had not encountered any form of anesthesia previously.(Table 3.1) Meanwhile, the remaining 49% were entirely new to the experience and had limited to no familiarity with anesthesia.

Table 3.1 what type of anesthesia had given to you

Type of Anesthesia	Frequency	Percent
GA	30	15.8
RA	69	36.3
Not given before	91	47.9
Total	190	100.0

Overall, 61.1% of the participants were aware of regional anesthesia, while 38.4% had no prior knowledge of it. Among those aware, the majority (97.9%) opted for general anesthesia, and only a small number (5%) expressed a preference for regional anesthesia. Of these, 0.5% were uncertain and had difficulty deciding between general anesthesia (GA) and regional anesthesia (RA)(Table3.2).

Table 3.2 Do you aware about the regional anesthesia

Awareness about Anesthesia	Frequency	Percent
Yes	116	61.1
No	73	38.4
Not sure	1	.5
Total	190	100.0

In our study, 47.9% of participants indicated that the surgeon decided the type of anesthesia, while 52.1% chose it themselves. Most patients had not encountered adverse effects from regional anesthesia but lacked thorough knowledge about it. Their main concerns included unawareness of its benefits and fear of being awake during the procedure (Table 3.3).

Table 3.3: Is the surgeon by himself/herself selecting the anesthesia for surgery?

	Frequency	Percentage %	P- value
Surgeon choice	91	47.9	0.108
Patient choice	99	52.1	
Total	190	100.0	

A key finding showed that many patients were hesitant about regional anesthesia due to fears of remaining conscious during the procedure, leading to a preference for general anesthesia. This preference was statistically significant ($P < 0.05$), highlighting the impact of their fear on the choice of anesthesia (Table 3.4).

Table 3.4 Are you afraid of being awake intra-operatively?

	Value	df	P-value
Pearson Chi-Square	14.115[a]	6	.028
Likelihood Ratio	10.044	6	.123
Linear-by-Linear Association	4.075	1	.044
N of Valid Cases	190		

Patients declined regional anesthesia primarily because many had encountered negative perceptions about it, leading them to prefer general anesthesia. This choice was supported by a statistically significant p-value ($P = 0.00$), as indicated in Table 3.5.

Table 3.5 Have you heard any negative perception about regional anesthesia?

	Value	df	P-value
Pearson Chi-Square	62.998[a]	4	.000
Likelihood Ratio	10.149	4	.038
Linear-by-Linear Association	5.333	1	.021
N of Valid Cases	190		

The results showed that 40% of the study participants were afraid of postoperative backache after RA, while 45.8% were not. Meanwhile, 14.2% of the patients were unsure, possibly due to a lack of knowledge about postoperative backache(Table3.6).

Table 3.6 Are you afraid of backache?

Are you afraid of backache	Frequency	Percent	P value
Yes	76	40.0	0.478
No	87	45.8	
Do not know	27	14.2	
Total	190	100.0	

Furthermore, 36.8% of patients feared needle pain related to regional anesthesia, which may influence their refusal. However, most (56.3%) did not share this fear, and 6.8% were unsure, likely due to inexperience with anesthesia (Table 3.7).

Table 3.7 Are you afraid of needle pain?

Are you afraid of needle pain	Frequency	Percent	P value
Yes	70	36.8	0.278
No	107	56.3	
Do not know	13	6.8	
Total	190	100.0	

The study also found that 14.2% of patients refused regional anesthesia due to family preferences, while the majority (81.1%) made their own decisions. A small portion (4.7%) were unsure if family concerns influenced their choice (Table 3.8).

Table 3.8 Is the reason for your refusal being family.

Reason for Refusal	***Frequency***	***Percent (%)***	***P-value***
Yes	*27*	*14.2*	*0.917*
No	*154*	*81.1*	
Do not know	*9*	*4.7*	
Total	***190***	***100.0***	

Similarly, the results revealed that 22% of patients were afraid of nausea and vomiting postoperatively and therefore decided against RA, but a greater number (56%) were not afraid of it. Meanwhile, 20.5% were unaware of the roles of nausea and vomiting in selecting the anesthesia technique(Table3.9).

Table 3.9 Are you afraid of nausea and vomiting*?*

Are you afraid of nausea and vomiting?	***Frequency***	***Percent (%)***	***P-value***
Yes	*43*	*22.6*	*0.109*
No	*108*	*56.8*	
Do not know	*39*	*20.5*	
Total	***190***	***100.0***	

DISCUSSION

During the study, it was noticed that most of the patients usually choose general anesthesia (GA) for elective general, orthopedic and urological surgical procedures. This fondness of GA was primarily due to some wrong conceptions heard about regional anesthesia (RA), and because of the fear of staying awake during the surgery. There were several other factors that influenced the patient refusal for RA like prior bad experience of RA, fear of postoperative backache, fear of nausea and vomiting, patient's family refusal for RA, surgeon's choice and needle pain, all well related to previous studies and research conducted globally (10,19,22,27). While there are many studies globally about RA and how patients feel about it, we have less information on why adult patients especially those having orthopedic and urological surgeries, refuse the RA in our region, particularly within developing countries.

Our study, conducted in Peshawar, revealed a noteworthy connection (p-value = 0.028) between patients rejecting regional anesthesia (RA) and their fear of remaining awake during the surgery (53.3%). This aligns with a study carried out in Karachi, Pakistan, which also highlighted concerns about patient refusal and fear of staying awake (p-value =0.012) during the operation (24.1%) (19). The factor also aligns with the study conducted in Korea, where the fear of consciousness during operation (36.8%) was a contributing factor of refusal to RA (10). Similarly, the results of a research carried at Jinnah Medical Centre, Karachi also matched with our study, as 17% of the patients refused RA due to fear of awareness during surgery (27). The recurrent identification of this factor in two different regions of Pakistan, emphasizes its widespread influence on patient decisions regarding anesthesia preferences. It emphasizes the need to tackle this fear through patient education and counseling, aiming to enhance the acceptance of regional anesthesia. Another significant factor contributing to patient refusal in our study was the negative perceptions heard about regional anesthesia (p-value =0.00). Although this aspect was not explicitly explored in the study conducted at Agha Khan University, Karachi, Pakistan (19), Korea (10) and Jinnah Medical Centre, Karachi (27), but its prominence in our findings indicates a widespread influence of external opinions on patient decisions regarding anesthetic technique.

In our study, 47.9% of the participants had the decision regarding the type of anesthesia they would receive determined by the surgeon, while 52.1% made the decision about anesthesia on their own. This factor was not statistically significant in our study contrary to the study conducted in Karachi, where surgeon's choice was a significant factor in patient refusal (p-value<0.05) with 38.5% (19). This is since, most patients in our population, who come for any procedure, are initially seen by surgeons or physicians-serving as their primary healthcare providers. Anesthesia personnel only encounter them when the patients are scheduled for a procedure.

In our study findings, 38.4% of patients were unaware about RA and 97.9% among them eventually selected GA. Although, the factor was not statistically significant in our study just as the study carried at Karachi (19), but it has an important role in patient's selection and preferences of anesthetic choice.

Comparing our study results with the findings from Karachi (19, 27), provides a more comprehensive understanding of patient refusal patterns. While the study at Karachi revealed the surgeon's choice as a significant factor, our emphasis on the fear of being awake during surgery and negative perceptions adds complementary insights. The combined findings underscore the multifaceted nature of patient decision-making in anesthesia selection, emphasizing the importance of a comprehensive approach to address various influencing factors.

Our study had several limitations. Conducted at a single hospital in Peshawar, the findings may not represent broader trends. The focus on orthopedic, general, and urological procedures limits applicability to other specialties. We also did not examine demographic, socioeconomic, or educational factors, nor did we assess long-term outcomes or satisfaction with anesthesia methods. Future research should address these gaps and explore ways to counter negative perceptions of regional anesthesia.

CONCLUSION:

Our observation revealed that a significant proportion of patients selected the general anesthesia over regional anesthesia. The primary reason for this preference among most patients was their apprehension about regaining

consciousness during the surgical procedure. Furthermore, their choice was significantly influenced by negative perceptions they had heard regarding regional anesthesia. The statistical analysis indicated a highly significant association between negative perception and patient refusal, followed by significant association between fear of being awake and patient refusal for regional anesthesia.

RECOMMENDATION:

Based on our findings, most patients opted for general anesthesia instead of regional anesthesia. This preference seems to be associated with a lack of awareness regarding the benefits of regional anesthesia, which include reduced intraoperative complications, decreased postoperative pain, and shorter hospital stays. All these factors play a significant role in the patient's recovery. Collaborative research efforts could delve into the nature of these negative perceptions, their sources, and effective strategies to counteract misinformation. Addressing these aspects becomes pivotal for targeted interventions aimed at enhancing patient understanding and acceptance of RA. Here are some recommendations for different stakeholders:

Recommendations for the Ministry of Health:

- Launch targeted public awareness campaigns
- Incorporate Anesthesia Education in Healthcare Programs

Recommendations for Hospital Decision Makers:

- Enhance Patient Education Programs
- Standardize Informed Consent Process
- Surgeon-Patient Communication Workshops

Recommendations for Anesthesia Practitioners:

- Tailored Patient Counseling
- Continuous Professional Development
- Collaborate with Surgeons

These recommendations aim to create a holistic approach to improve patient understanding, alleviate fears, and promote informed decision-making regarding anesthesia options.

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