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ORIGINAL RESEARCH **ANESTHESIOLOGY**

Choice of anesthesia by experienced anesthetists in personal surgical scenarios

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ABSTRACT

Introduction: Anesthesia is an important part of surgical intervention; it is vital to the benefit, comfort, and health of a patient during operations and in their recovery periods. Despite the voluminous literature on usual anesthesia regimens, an analysis of how professional anesthetists select the anesthesia techniques for use when they or their relatives need surgery has not been adequately documented. This research aims at establishing this preference among experienced anesthetists regarding decision-making that comes from experience as well as personality. The study also seeks to find out how these preferences are influenced by factors like level of clinical practice, level of education, and professional status, and in profiling the process of decision-making, integrating professional and personal factors.

Methodology: A self-compiled cross-sectional study was administered to 222 anesthetists working in several tertiary care centers. The closed-ended survey questions included questions on demographic attributes, choice of anesthesia techniques depending on the type of surgery, and management of postoperative pain. Descriptive data, in the form of frequencies and percentages, were computed in an effort to find out patterns of anesthesia choices.

Results: The study showed the anesthetists' inclination towards using general anesthesia with endotracheal intubation in laparoscopic surgeries as well as spinal anesthesia in the obstetrics surgeries. A combined spinal epidural was opted for in total knee replacements. Preferences towards anesthesia differences also varied depending on the professional affiliation and educational level, where those with higher qualifications had a higher inclination towards the use of regional anesthetic techniques. Postoperative pain is preferred to be managed using multimodal analgesia, especially in surgeries with high pain scores.

Conclusion: This article discusses how anesthetists with years of practice make the choices of anesthesia with both the medical aspects in mind, as well as the anesthetists' preferences. These insights can improve patient counselling and support the high-quality, more targeted anesthesia care plans, which may contribute to better outcomes. The future studies need to be conducted in order to explore these preferences and their consequences for clinical practice in detail.

Keywords: Anesthesia preferences; Decision-making; Experience; Patient-centered care; Personal surgical scenario;

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1. INTRODUCTION

Anesthesia is an essential component of surgical processes since it helps in providing comfort, safety, and favorable results during and even after the surgery.[1] Some of how the selection of anesthesia techniques takes into consideration the extent of the procedure required and the health status of the patient, and general features of the anesthesia.[2,3] Despite a vast body of literature relating to normative practices of anesthesia and its results, little is known about how highly experienced anesthetists choose anesthesia for themselves or their close ones in various surgical situations.[4] This present research examines the anesthesia choices made by working anesthetists for clinical practice, employing hypothetical case-based situations including laparoscopy, appendectomy, total knee arthroplasty, and cesarean section.[5,6] This study seeks to explore how a blend of professional knowledge and experience influences decisions on anesthesia choices for patients so as to better understand ways of offering patient-centered care besides improving on the applicability of the clinical guidelines based on the perceptions of experts.[7,8,9] Such knowledge of preferences can reveal latent habitual tendencies in the decision-making process, leading to improved patient safety in anesthesia selection and resulting in a more evidence-based specialty.[10,11]

2. METHODOLOGY

This cross-sectional study was conducted to explore the anesthesia preferences among experienced anesthetists having years of clinical experience. The study targeted anesthetists from various tertiary care hospitals that ensure a diverse representation across different levels of expertise and specialties. A structured questionnaire was developed that comprises demographic questions and specific queries about preferred anesthesia techniques for various surgical scenarios that include laparoscopic procedures, appendectomies, total knee replacements, and cesarean sections.

The survey targeted approximately 300 anesthetists practicing in tertiary care hospitals, with a final response rate of 74%. Participants were asked to mention their preferred anesthesia method (e.g., general anesthesia, spinal anesthesia, epidural anesthesia). The survey included questions about the postoperative pain management preferences that show a comprehensive approach to anesthesia care. This data is intended for use in counseling patients, which helps them to understand different anesthesia options and their implications, which is based on expert opinions.

The respondents were the anesthetists operating academic and tertiary care hospitals in five leading institutions in metropolitan regions in Pakistan, which provided national representation. The survey was sent to the participants electronically as a part of the institutional email network and was filled out willingly via secure online forms within a three-month timeframe, i.e, June to August 2024. Responses were analyzed using SPSS software (version 27.0). Descriptive statistics, including frequencies and percentages, were used to summarize the data that provides insights into the trends and patterns of anesthesia preferences among the respondents.

The study was approved by the Institutional Review Board, and informed consent was obtained from all participants. Ethical considerations included maintaining confidentiality and voluntary participation without any incentives. The focus on experienced anesthetists provides a robust understanding of the professional preferences, which could inform best practices and also increase patient-centered care through targeted counseling.

3. RESULTS

The demographic data, as presented in Table 1 shows a diverse group of respondents with a range of professional designations and educational backgrounds. The majority of participants were male (62.6%) and had over ten years of clinical experience. The mean age of the respondents was 41.42 years which shows a unit of seasoned professionals.

3.1. Anesthesia Preferences Across Surgical Scenarios

The survey results represented in detailed Table 1 shows distinct preferences for anesthesia techniques based on the type of surgery. For laparoscopic gynecological procedures, a noteworthy majority (86.9%) of anesthetists preferred general anesthesia with endotracheal intubation While 8.1% chose for general anesthesia with LMA/Igel insertion. On Contrary, total knee replacement surgeries saw a predominant preference for combined spinal-epidural anesthesia (CSE) (59.9%) following spinal anesthesia (16.2%) and epidural anesthesia (14.4%). Cesarean section deliveries showed a strong inclination towards spinal anesthesia that is preferred by 91.4% of respondents which highlights its perceived safety and efficacy in the obstetric

3.2. Influence of Professional Designation and Education Level

As Shown in the composite graph (Figure 1), The Anesthesia preferences varied notably by the respondents' education level and professional designation. Anesthetists with advanced qualifications,

Table 1: Anesthesia preferences for various surgical procedures

Surg Procedure	Anesthesia option	N (%)
Laparoscopic GS/Gynae Procedures	GA with ETT	193 (86.9)
	GA with LMA/I-gel Insertion	18 (8.1)
	Epidural Anesthesia	5 (2.3)
	Spinal (Segmental Spinal) Anesthesia	6 (2.7)
Total Knee Replacement Surgery	Combined Spinal Epidural Anesthesia	133 (59.9)
	Spinal Anesthesia	36 (16.2)
	Epidural Anesthesia	32 (14.4)
	GA with ETT	16 (7.2)
	GA with LMA/Igel Insertion	5 (2.3)
Cesarean Section Delivery	Spinal Anesthesia	203 (91.4)
	Epidural Anesthesia	9 (4.1)
	GA with ETT	9 (4.1)
	GA with LMA/Igel	1 (0.5)
Thoracotomy Surgery	GA + IV Multimodal Analgesia	83 (37.4)
	GA with Thoracic Epidural	77 (34.7)
	GA with Erector Spinae Block	24 (10.8)
	GA with Postop PCA	18 (8.1)
	GA with Paravertebral Block	12 (5.4)
	GA + Intercostal Nerve Block	8 (3.6)
Appendectomy	GA with routine ETT	148 (66.7)
	GA Rapid Sequence Intubation	48 (21.6)
	Spinal Anesthesia	25 (11.3)
	Local Anesthesia	1 (0.5)
Gastric Bypass Surgery	GA with Inhalational Agents	164 (73.9)
	GA with TIVA	46 (20.7)
	Combined Spinal Epidural Anesthesia	7 (3.2)
	Epidural Anesthesia	3 (1.4)
	Spinal (Segmental Spinal) Anesthesia	2 (0.9)
Laminectomy (Spinal Surgery)	GA with ETT	185 (83.3)
	Spinal Anesthesia	29 (13.1)
	Epidural Anesthesia	5 (2.3)
	GA with LMA/Igel	3 (1.4)
Carotid Endarterectomy	Local Anesthesia (Superficial/intermediate Cervical Plexus Blocks)	118 (53.2)

anesthesia was the main choice (59.9%), followed by spinal anesthesia (16.2%) and epidural anesthesia (14.4%). For appendectomies, the most favored method was GA with routine endotracheal intubation (66.7%) then rapid sequence intubation (21.6%). These findings indicate that anesthetists provide individualized care for their patients depending on their surgery type, with strong emphasis on patient-controlled analgesia with an aim of using limited opioids were possible.

4. DISCUSSION

The findings of this research can be useful to understand the choice of anesthesia amongst experienced anesthetists with specific emphasis on the trends observed in relation to the type of surgery. The study reveals the general vulnerability towards GA with the endotracheal intubation in laparoscopy and spinal anesthesia in Caesarean sections. These choices could be so due to the perceived safety, efficacy and sees of these techniques in their respective fields.[1,2] This large preference for CSE anesthesia for total knee replacements is indicative of the marked trend towards balanced analgesia, high pain relief with low morbidity.[3,4]

These differences of opinion observed in the choices of anesthesia have therefore, made it possible to think that experience and specialty training play a major role in the decision-making process among anesthetists. This is particularly the case with the anesthetists trained to advanced levels like FCPS MD, who prefer regional anesthesia techniques which other evidence suggest decrease postoperative pain and enhance recovery time.[5,6] Some of the studies revealed conservative tendencies of senior consultants and specialists when choosing the treatment

procedure, which can be explained by the desire to avoid adverse consequences of more invasive interventions.[7,8]

The study also shows that multimodal analgesia is preferred by most of respondents when it comes to the treatment of postoperative pain, particularly in such operations as abdominal surgeries and thoracotomy. This approach concurs with current recommendations that call for co-administration of both site and systemic analgesia to improve pain management whilst minimizing opioid use.[9,10] Such strategies are important in improving the quality of care for the patients and preventing harms related to opioid use especially among surgical patients who are at high risk.[11,12] From the data it can also be inferred that attitudes of anesthetists could be influenced by what they personally go through, what they know about complications associated with anesthesia, and how they want to avoid causing patients more suffering.[13,14]

The information derived from studies will be valuable in-patient education in that an individualized approach to anesthesia management will be achieved; the patient and his/her anesthesiologist will have adequate information on the possible complications and benefits that are associated with different anesthetic techniques.[15] There is a need to implement clinical practices that orient habitats with patient preferences and knowledge of peer

Table 2: Preference in relation to experience

Years of Experience	Laparoscopic Procedure	Total Knee Replacement	Cesarean Section	Thoracotomy
1-5 years	General (70%), Spinal (20%), Others (10%)	Combined Spinal Epidural (50%), Spinal (30%), Others (20%)	Spinal (90%), General (10%)	General with Thoracic Epidural (40%), Others (60%)
6-10 years	General (80%), Spinal (15%), Others (5%)	Combined Spinal Epidural (60%), Spinal (25%), Others (15%)	Spinal (85%), General (15%)	General with IV Multimodal (50%), Others (50%)
> 10 years	General (90%), Spinal (5%), Others (5%)	Combined Spinal Epidural (70%), Spinal (20%), Others (10%)	Spinal (95%), General (5%)	General with IV Multimodal (70%), Others (30%)

anesthetists to enable healthcare providers to improve patient centered care, trust and decision making to improve patient outcomes.[16,17]

5. LIMITATIONS

However, this research is rather restricted by the fact that the data is being self-reported, which means there can be response bias, and the sample cannot be considered an absolute representation of all the practice environments. These results might demonstrate local practice trends and preferences might be different in global environments because of dissimilarity in clinical guidelines and access to resources. Further research on a global scale is required to determine geographic and systemic factors on the decision-making in anesthesia.

6. CONCLUSION

The findings suggest a strong inclination towards specific anesthesia methods that includes spinal anesthesia for cesarean sections and combined spinal-epidural for total knee replacements that reflects both safety concerns and personal expertise. These insights can improve patient-centered care by aligning anesthesia practices with expert preferences which improves clinical outcomes and patient satisfaction.

7. Data availability

The numerical data generated during this research is available with the authors.

8. Conflict of interest

All authors declare that there was no conflict of interest.

9. Funding

The study utilized the hospital resources only, and no external or industry funding was involved.

10. Authors' contribution

MAZ: Main Concept

WA: conduction of the study work

VK: manuscript editing

MRK: Literature Search

AH, MFH: Proof Reading

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