Journal of Advances and Scholarly Researches in Allied Education
Vol. 20, Issue No. 4, October-2023, ISSN 2230-7540

Assessment of the extent of practice and need for training in regional anesthesia among anesthesiologists in Saudi Arabia

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Abstract - Objective: ***The purpose of this survey was to evaluate Saudi Arabian anesthesiologists' level of practice & necessity of further training in regional anesthesia in 2015. Methods: We used a survey administered via the internet to learn more about regional anesthetic use among the 400 anesthesiologists who presented at the two annual meetings of the Saudi Anesthetic Association. Concerns included the application of ultrasound guidance, the use of regional anesthetic, & necessity of training workshops. Findings: Of the anesthetists surveyed, 55.2% responded. The majority of these professionals were men, with a mean age of 25 to 50. The majority of anesthesiologists (81%) often used regional anesthetic in operating rooms (68.6%) as opposed to designated block rooms. Only 12.7% of the respondents completed a fellowship in regional anesthesia, but 5.5% had formal training & 81% were eager to attend workshops on the subject. The institutional positions of the ultrasound users & their correlation with ultrasound (r=-0.191) were significantly correlated negatively (P=0.026). Conclusions: We feel that more could be done to enhance the Kingdom of Saudi Arabia's use of regional anesthesia, such as instituting formal training and holding more regular, specialized seminars and courses on the subject, using ultrasound-guided regional anesthetic blocking techniques as the primary focus.***

Keywords - Saudi, anesthesiology, Regional anesthesia, Clinical

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INTRODUCTION

When opposed to general anesthesia, regional anesthesia provides numerous benefits for patient care. It offers superior analgesia following surgery, lowers stress levels, post-operative cognitive impairment, duration of hospital stay, and both [1–2].[/3] It also possesses anti-inflammatory & anti-cancer properties. *[4,5] These days, ultrasound guidance is widely used for regional anesthetic procedures because to its excellent success rates, low rate of complications, and improvements in quality, performance time, and time to block onset.(6)

Anesthesiologists generally practice different forms of regional anesthesia. Furthermore, no data is currently available to assess how this practice has developed in Saudi Arabia over time. The purpose of this survey was to evaluate Saudi Arabia's regional anesthetic practice in 2015, as well as the necessity of training in the field.

Regional anesthesia plays a pivotal role in modern anesthesiology, offering several advantages over general anesthesia, including reduced systemic side effects, enhanced postoperative pain management, and improved patient outcomes. Understanding the breadth of anesthesiologists' experience with regional anesthesia & necessity of training in this area is crucial as the practice of anesthesiology develops. This introduction provides an overview of the status of regional anesthesia among anesthesiologists in Saudi Arabia, highlighting its significance and the factors driving the assessment of its practice and training requirements in the region.

Significance of Regional Anesthesia in Anesthesiology:

Regional anesthesia encompasses a range of techniques that involve the selective numbing of specific regions of the body, such as peripheral nerve blocks, spinal anesthesia, and epidural anesthesia. These techniques have gained recognition and prominence in the field of anesthesiology due to their many advantages. Regional anesthesia allows for pain management during and after surgery while minimizing the need for general anesthesia and its associated risks. It can lead to faster recovery, reduced opioid consumption, and decreased postoperative complications. Given these benefits, regional anesthesia is increasingly being integrated into various surgical and clinical scenarios.

Context in Saudi Arabia:

The practice of medicine, including anesthesiology, varies by region and is influenced by factors such as cultural norms, healthcare infrastructure, and medical education. Saudi Arabia, with its rapidly growing healthcare sector and a diverse population, represents an unique environment in which the state of regional anesthesia between specialists of anesthesia can be evaluated.

In Saudi Arabia, as in many other parts of the world, anesthesiologists are at the forefront of administering anesthesia and pain management services. It is essential to understand how extensively regional anesthesia is practiced in the region and to gauge the level of expertise among anesthesiologists.

Rationale for Assessment:

Several factors necessitate a comprehensive assessment of regional anesthesia practice and training needs among anesthesiologists in Saudi Arabia:

- **Patient-Centered Care:** Ensuring that patients receive the most appropriate anesthesia technique for their surgical procedures is essential for optimizing their care and outcomes. Understanding the prevalence of regional anesthesia practice aids in tailoring anesthetic choices to individual patient needs.
- **Safety and Quality:** Proficiency in regional anesthesia techniques is essential to ensure patient safety and the provision of high-quality care. Adequate training and continuing education are critical in maintaining competence.
- **Advancements in Anesthesia:** The field of anesthesiology is constantly evolving with new techniques, equipment, and pharmaceuticals. Assessing the current state of regional anesthesia practice provides insights into the adoption of these advancements.
- **Resource Allocation:** Healthcare institutions must allocate resources effectively, including training programs, to meet the demand for regional anesthesia services. An assessment of current practice informs resource allocation decisions.

METHODS

A survey was created & studied by two highly trained experts in regional anesthesia to ensure it met worldwide standards. Question topics included: anesthesiologist demographics (e.g., gender, age, location, hospital of origin, and fellowship training in regional anesthesia); regional anesthesia practice (including ultrasound and/or nerve stimulation advice utilize, location, motivation, preference, frequency, and utilize); and ultrasound guided regional techniques (e.g. as training in, possession).

Morbidity Mortality Meeting (MMM) anesthesia Yahoo group (http://health.groups.yahoo.com/group/Triple M) were invited to participate in the study via email and/or electronic invitation message, and all practices anesthesiologists in Saudi Arabia who attend the biannual meetings of the Saudi Anaesthetic Association were invited to participate in the study. The survey was carried out with the help of the commercially accessible "Survey Monkey" software (www.surveymonkey.com). The latter was established in February 1999 with the goal of facilitating the sharing of concepts & firsthand knowledge regarding anesthetic practice in the Middle East. In order to complete the questionnaires, participants had to provide information about their current usual practice of regional anesthetic. The Survey Monkey website gathered the responses following the first email and the two follow-up emails. SPSS software, version 13, was used to perform the statistical analysis (SPSS, Illinois). The data provided as a percentage of occurrence. According to Pearson The utilization of ultrasound-guided regional anesthesia or demographic factors (such as age, gender, occupation, and completion of a fellowship in regional anesthesia, necessity of conducting training workshops, and possession or requirement of an ultrasound machine were correlated using a correlation test. Statistics were deemed significant if $P<0.05$.

RESULTS

The targeted anesthesiologists replied 400 of our questionnaires, yielding a 59% (n=236) response rate. The sample size matched the national distribution of healthcare facilities. According to Table 1, the majority of respondents—178, or 84.4 percent—had a mean age between 25 and 50 years old, and 144, or 68% of them were men. There were two (0.8%) fellows in regional anesthesia, 78 (33%) consultants, 81 (34.3%) assistant consultants, and

75 (31.7%) residents. The majority of respondents—107, or 45.3%—were employed by governmental hospitals, with the remaining respondents—39, or 16.5%—working for private, 32, or 11.8 percent of hospitals. Riyadh 47 (19.9%) and Jeddah 158 (66.9%) accounted for the majority of the responders. The bulk of regional anesthetic fellowships (Table 2) were completed in Egypt (11.8%), Saudi Arabia (5.7%), Europe (0.8%), India (0.6%), & Syria (0.5%). While the majority of anesthesiologists (88.2%) reported using regional anesthetic on a daily basis (19.0%) or weekly basis (23.7%) [Figure 1 and Table 2], 12.7% said they performed so less frequently.

Table 1: Respondents' characteristics

Respondents (%)	236/400 (59)
Age groups (%)	
25-30 years	52 (22.0)
30-35 years	43 (18.2)
35-40 years	38 (16.1)
40-45 years	41 (17.3)
45-50 years	34 (14.4)
>50 years	28 (11.8)
Gender (Male: Female)	162/238 (68.0:31.3)
Positions (%)	
Consultant	78 (33.0)
Assistant/associate consultant	81 (34.3)
Fellow	2 (0.8)
Resident	75 (31.7)
Hospital origin (%)	
Governmental	107 (45.3)
Military	28 (11.8)
University	39 (16.5)
Private	32 (13.5)
Fellowship in regional anesthesia	30 (12.7)

Regional anesthetic was of particular interest to 59% of responders (n=236) [Figure 1]. The key motivations for doing so were to improve safety (22%) or outcome (22.8%), as well as reduce health care expenses (9.3%), & rate for complications (5.9%). Nonetheless, the three primary obstacles to the practice of regional anesthesia were its time-consuming nature (3.8%), surgeons' reluctance (2.5%), and the block failure rate (2.1%) [Table 2]. Only 4.6% of participants used a designated block room, while the majority (68.6%) completed the regional blocks in operating rooms [Table 2].

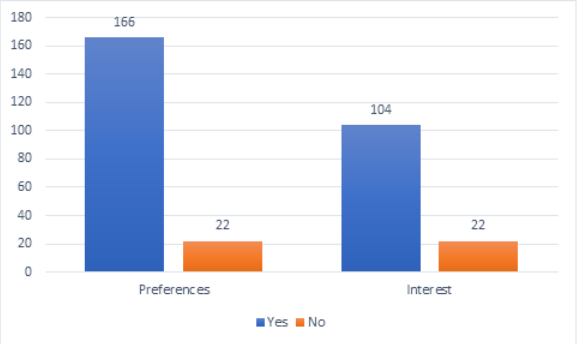

Figure 1: Regional block performances get preference and interest.

Table 2: Regional anesthesia practices

Respondents (%)	236/400 (55.2)
Fellowship in regional anesthesia (%)	30 (12.7)
Frequency of performing regional blocks (%)	
Daily	45 (19.0)
Weekly	56 (23.7)
Monthly or less	30 (12.7)
Interest in regional anesthesia	105 (44.4)
Reasons for performing (%)	
Safer	52 (22.0)
Less costly	1 (0.4)
Less complications	18 (7.6)
Improve outcome	54 (22.8)
Safer and less costly	14 (5.9)
Safer, less costly, improve outcome	22 (9.3)

Barriers to perform (%)	
Surgeon refusal	6 (2.5)
Time consuming	9 (3.8)
Failure of the technique	5 (2.1)
Where are the blocks performed? (%)	
Operating rooms	162 (68.6)
Designated block rooms	11 (4.6)
Both of them	9 (3.8)
Possession of an ultrasound machine	127 (53.8)

For regional block position, 24.6% of responders reported using ultrasonography and nerve stimulation together. In contrast, 18.5% and 21.8% of respondents, respectively, reported using nerve stimulation or ultrasound-guided regional blocks [Figure 2]. The majority of anesthesiologists who perform ultrasound-guided regional blocks obtained their training through workshops or courses (26.6%), self-study (11.1%), or formal instruction (5.5%). In general, 53.8 percent of the latter group owned an ultrasound machine, and 68.6% of them thought they needed to use it [Table 3]. 81% of respondents stated participants would be more inclined to attend the forthcoming regional anesthesia training sessions as a result of this. Their research suggests that annual training workshop has to be between two and four [Table 3].

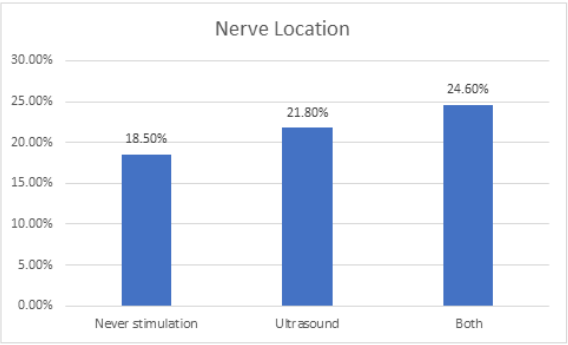

Figure 2: Regional block performances are Preference and interest.

Table 3: Regional Anesthesia Learning

Respondents (%)	236/400 (55.2)
Sources (%)	
Courses, workshops	63 (26.6)
Self-learning	26 (11.01)
Formal-training	13 (5.5)
Courses, workshops, and self-learning	19 (8.0)
Looking for forthcoming workshops/courses (%)	
<50	33 (13.9)
50-70	54 (22.8)
70-90	62 (26.2)
≥=90	46 (19.4)
Frequency of the needed training workshops/courses (%)	
Once per year	36 (15.2)
Twice per year	61 (25.8)
Three per year	46 (19.4)
Four per year	58 (24.5)

Having access to an ultrasound machine was favorably connected with administering regional anesthetic (r=0.666, P<0.001), while ultrasound users were negatively correlated with their institutional positions (r=-0.191, P=0.026).

DISCUSSION

This study presented initial attempt to evaluate the use of regional anesthesia by anesthesiologists working in the Saudi Arabia kingdom. The majority of the respondents work in government hospitals in the Kingdom's two biggest cities, Jeddah and Riyadh, which also host the majority of the Saudi Anesthetic Association's meetings. It's not surprising that fewer participants went abroad for their regional anesthesia fellowships. This emphasizes the importance of launching a Saudi Regional Anesthesia Fellowship Program to cultivate trained, seasoned clinical physicians whose familiarity with regional anesthesia will lead to improved clinical outcomes from the widespread use of anesthesia

suits. Because of its efficacy in enhancing safety & outcome, lowering expenses, and lowering the rate of complications, 81% of the responding anesthesiologists in the Kingdom employ regional anesthetic on a daily or weekly basis. Unfortunately, the most significant impediments for the 5.3% of people who are not using regional anesthetic are the old ideas such as the time consuming & failure rate of the blocks, lack of awareness of the surgeons.

All facilities offering regional anesthetic should adopt the framework we have outlined, with the provision of a dedicated block room being particularly important.[7] The majority of practitioners, 68.6 percent, were discovered to be administering regional blocks right there in the operating rooms. Due to the necessity to complete their scheduled lists swiftly, surgeons usually decline to do this, which could lengthen the anesthesia's duration.

More than a quarter of the people who performed regional blocks utilized ultrasound to pinpoint the exact location of the needles, and one-third of those people also employed nerve stimulation guidance to ensure a smooth procedure. Others found that the utilization of nerve stimulators or ultrasound together greatly minimizes the necessity for a needle during manipulation & ineffective blockage, without a statistically significant variation in the quality of regional anesthetic.8, 9] Additionally, to validate closeness to brain regions, electric nerve stimulation or ultrasound guidance must be collective—expressly for novices.10]

The absence of formal training in regional anesthesia in the Kingdom was highlighted by the fact that only 5.5% of respondents received formal training in performing ultrasonography guided regional blocks. In a similar vein, 113 Irish instructors and students took part in a study designed to uncover the characteristics that contribute to trainees' & instructors' success in mastering ultrasound-guided axillary brachial plexus blockade. They came to the conclusion that formal, structured training programs are necessary for optimal training, and they made recommendations for improving curriculum design, training content, and procedure performance assessments.11] According to our report, 81% of the participants expressed a strong desire to receive training in more recurrent expert workshops on regional anesthesia in Saudi Arabia. The younger anesthesiologists were more eager to practice or pick up new skills in regional anesthesia, particularly those who were residents. This proved how important it is to include regional anesthesia in residency program curricula and to hold a lot of workshops and classes in the subject.

CONCLUSION

It additionally believes that formal training & provision of more frequently occurring expert courses and workshops in the field of regional anesthesia, with particular reference to ultrasound regional anesthesia blockade techniques, would be beneficial in the Kingdom of Saudi Arabia. Anesthesiologists in Saudi Arabia should have a comprehensive awareness of the breadth of their practice & training requirements in regional anesthesia in order to enhance patient care, assure safety, & adapt to changing medical practices. In addition to being pertinent to the regional healthcare system, this evaluation advances knowledge of regional anesthesia trends or difficulties in the anesthesiology community on a global scale.

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