http://www.medscidiscovery.com

OPEN ACCESS JOURNAL ISSN: 2148-6832

MSD Medical Science and Discovery
2020; 7(7):570-4

Research Article Doi: 10.36472/msd.v7i7.403

Factors affecting general or regional anesthesia preference in patients with elective surgery

Esra Adıyeke[1], Levent Adıyeke[2]*

Abstract

Objective: This study aimed to investigate the factors that affect the preference of the anesthesia method in patients who were indicated for general or regional anesthesia.

Material and Methods: A descriptive questionnaire was used to evaluate the opinions of 123 patients who were planned to undergo elective surgery in the orthopedics and traumatology outpatient clinic between January 2018 and June 2019.

Results: 73 women (%59) and 50 men (%41) participated in the study. The mean age was 58.62±11 years. General anesthesia was preferred in 58% of the patients. The most common reason for rejection was that the patients who preferred general anesthesia did not want to receive visual and auditory stimuli during the surgical procedure. There was a significant positive correlation between education level and regional anesthesia preference rate. There was a significant positive correlation between the regional anesthesia preference rate of patients receiving hand and foot surgery indications.

Conclusion: The preference of the majority of patients was found to be general anesthesia method. Additionally, the type of surgery and education level of the patients was found to be effective in preference of the anesthesia method.

Keywords: Anesthesia, Preference, Regional, Patient, Elective

Introduction

The principal aim of anesthesia is to carry out the surgical procedure with minimal pain and discomfort as possible. One of the most disturbing aspects of anesthesia for the surgery patient is the fear and anxiety caused by the spinal or local injections. As in all surgeries, the type of anesthesia method determines by the current systemic or regional problems, coexisting diseases, indications of surgery (ie, outpatient or inpatient), type of surgery (emergency or elective), patient' age, and preference (1-3). General or regional anesthesia methods, appropriate under these conditions, are often at the physician's preference. However, in some cases, depending on the patient health status, it may be possible to choose the method according to patient preference (1).

Regional anesthesia techniques have some advantages such as patient awareness, the continuation of spontaneous breathing, protection of reflex functions (coughing, swallowing), low intraoperative bleeding, low postoperative thromboembolism risk, and providing postoperative effective analgesia. However, hypotension, bradycardia, inability to extend the duration of anesthesia, and late mobilization may comprise disadvantages for regional preference (2, 3). In some cases, anesthesia methods can be superior to another. However, in some patients, each method may be equally suitable. Anesthesia method preference of the patients may be affect by factors such as previous anesthesia experiences of themselves and their relatives, wakefulness or sound effect during operation, information or advice of anesthesiologist and surgen (4, 5).

In a study conducted on orthopedists in order to determine which anesthesia method is preferred by surgeons who play an active role in the determination of anesthesia method, regional anesthesia was found to be more preferred than general anesthesia (6). In another study, it was stated that the opinion of the clinical physician forefront significant for the patient in preference and orientation of the anesthesia method (4, 7).

This study aimed to determine the effect of the patients information, gender, age, education level and type of operation on the selection of the anesthesia methods.

Received 30-06-2019 **Accepted** 13-07-2020 **Available Online** 22-07-2020 **Published** 30-07-2020
1 Sancaktepe Şehit Prof.Dr. İlhan Varank Hospital, Dept of Anesthesiology and Reanimation, İstanbul, TR
2 Haydarpasa Numune Training and Research Hospital, Dept of Orthopedics and Traumatology, Istanbul, TR
*** Corresponding Author:** Levent Adıyeke **E-mail:** leventadiyeke@gmail.com

http://dx.doi.org/10.36472/msd.v7i7.403

Material and Methods

A descriptive questionnaire was used to evaluate the opinions of 123 patients who were planned to undergo surgical treatment in the orthopedics and traumatology outpatient clinic between January 2018 and June 2019.

The study was initiated on 272 patients over the age of 18 who agreed to participate in the study. Patients who refused to participate in the study, who did not complete the anesthesia premedication process, or who were out of follow-up, who did not meet general or regional anesthesia, were excluded from the study.

Verbal and written informed consent was obtained from patients -Patient Informed Consent Form- over 18 years of age who had accepted to participate in the study. Ethical consent was obtained from the University Of Health Sciences Sureyyapasa Chest Diseases and Thoracic Surgery Training and Research Hospital (116.2017.185).

The questionnaire, which was prepared by the researcher based on the literature, was filled out by the orthopedic physician after the anesthesia polyclinic evaluation. The questionnaire consisted of 13 questions about the demographic characteristics of the patients, educational background, level of knowledge about anesthesia and surgical treatment type, previous operations, experiences, and preferences of anesthesia. Table-1

Table 1: Patient demographic characteristics and anesthesia preference evaluation questionnaire

1. Gender
Female
Male
2. Age
18-35
35-55
55-70
Above 70
3. Education
High school and below
College or Facult
4.Civil Status
The married
Single
5. Surgical indication
Knee or Hip Arthroplasty
Knee Arthroscopy
Mass Excision
Hand and Foot Surgery
6. Reasons to choose regional anesthesia
Inhaler anesthetic drug unwanted
Less nausea or vomiting
Being conscious
Having postop pain less
Postop sedation to be less
Safe
Having simple surgical intervention
Previous satisfaction
Other (Please specify):
7. Reasons for not choosing regional anesthesia
Risk of general anestesia transition
Pain during application
Being conscious
Headache / Back pain
Fear of permanent paralysis
Loss of effect in surgical procedure fear / anxiety
Other (Please specify):
8. Reasons for choosing general anesthesia
Not wanting to see and hear
Painless application
Safe
Regional anst. insufficiency fear / anxiety
Other (Please specify):
9. Reasons for not choosing general anesthesia
Sleeping / Waking worry
Nausea and vomiting
Postop sedation
Risk of thromboembolism
Postop analgesia needs
Previous bad experience
Other (Please specify):
10. Surgical / anesthesia intervention process information
Yes
No
11. History of surgery / anesthesia
Yes
No
12. ASA score?
13. Which type of anesthesia do you prefer?
Regional anesthesia
General anesthesia

Statistical Analysis

Descriptive statistical methods (mean, standard deviation, frequency) and paired sample t-test was used for comparisons between the groups. IBM SPSS Statistics 22 program was used for statistical analysis. While evaluating the data of the study, the suitability of the parameters to the normal distribution was evaluated by the Kolmogorov-Smirnov test and the parameters were found to be suitable for the normal distribution. Mann-Whitney U test was used to compare the mean age and education level between the groups. Significance ($p < 0.05$) was evaluated.

A structured questionnaire was used based on the cross-sectional study. Assuming that the effect size (Cohen's d = 0.3), alpha error (p-value = 0.05) and 1-beta error (power) value calculated with the correct response rates given to the questions were 0.92, it was understood that 104 people would be sufficient to test the absence hypothesis. For analysis, G Power Statistics Program version 3.1.9.2 was used.

Results

A total of 123 patients, 73 women (59%) and 50 men (41%), participated in the study. The mean age of the patients was 58.62 (range: 20-77) years. According to their educational background, the majority of the patients were high school and under-graduates (65%, n = 81) and the rest were college and university graduates (35%, n = 42).

58% of the patients preferred general anesthesia and 30% preferred regional anesthesia, 12% did not specify any preference.

Patients who prefer general anesthesia; 43% did not want to receive visual and auditory stimuli during the procedure, 31% wanted to feel less pain or ache, 8% thought that general anesthesia was safer, 6% worried about feeling pain

http://dx.doi.org/10.36472/msd.v7i7.403

during the regional procedure, 5% did not trust regional anesthesia, 5% stated general fear and anxiety, and 2% did not give any reason. Patients who prefer regional anesthesia; 41% thought it was safer, 32% thought that surgical intervention was not a major procedure, 11% did not want general anesthetic inhaler drug toxicity and side effects, 5% thought to be awake, 5% thought it was easier, 3% stated that they were previously satisfied with regional anesthesia and 3% were affected by the doctor. (Fig.I)

According to the surgical indications of the patients, 61% of those who were indicated for hip or knee arthroplasty, 60% of those who were indicated for knee arthroscopy (meniscectomy or ACL reconstruction), 66% of those who were indicated for mass excision of the lower and upper extremities, 12% of the patients who had indications for foot surgery (hallux valgus, hallux rigidus, finger arthrodesis, trigger finger, wrist ganglion cyst, dupuytren's contracture, etc.) stated that they preferred general anesthesia. Patients demographic characteristics and anesthesia method preference distribution was shown in Table 2.

Age, gender, and marital status were not found to have a significant effect on anesthesia preference distribution ($p > 0.05$). There was a significant positive correlation between education level and regional anesthesia preference rate ($p = 0.001$). There was a significant positive correlation between the regional anesthesia preference rate of patients receiving hand and foot surgery indications ($p = 0.003$).

Table 2. Regional and general anesthesia preference distribution according to demographic and surgical indications.

	Regional Anesthesia [Mean±sd] n (%)	General Anesthesia [Mean±sd] n (%)	No preference	p
Age	[60.9±13]	[63.2±8]		
	38(30)	71(57)		
18-35	8	20	1	0.238
35-55	4	13	3	
55-70	17	28	4	
Above 70	9	10	6	
Gender				
Female	22	41	10	0.988
Male	16	30	4	
Education				
High school and below	13	47	5	0.0013
College or Facult	25	24	9	
Marital Status				
Married	24	33	12	0.966
Single	14	38	2	
Surgical indication				0.0015
Knee or Hip Arthroplasty	7	19	5	0.79
Knee Arthroscopy	9	18	3	0.13
Mass Excision	8	22	3	0.96
Hand and Foot Surgery	14	4	3	0.032
Surgical/Anesthesia intervention process information				0.814
Yes	12	24	3	
No	26	47	11	

*Chi Square Test,statistically significant between groups $p < 0.05$

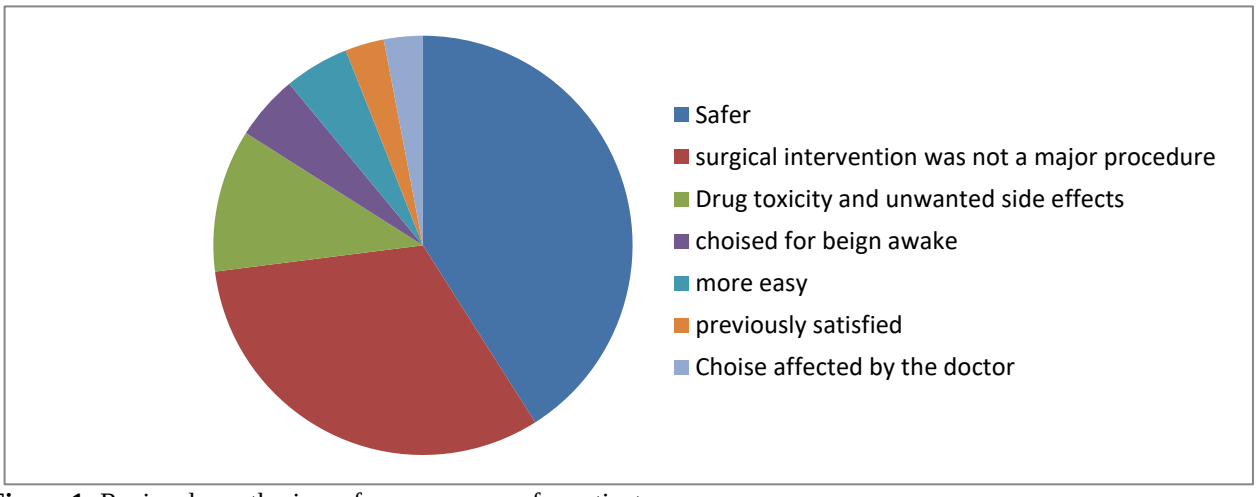

Figure 1: Regional anesthesia preference reasons for patient.

Discussion

The aim of general anesthesia is sedation, analgesia, loss of reflexes, and muscle relaxation. Regional anesthesia is an alternative to general anesthesia. Nowadays, regional anesthesia applications have been given more importance and used more frequently (8, 9). In both methods, the patient's age, general condition, medical drug usage, the type of surgical intervention, depending on the existing disease may be preferred to each other. In our study, the cases where both anesthesia methods had equal superiority in terms of patient and that both methods accepted equally by surgeon and anesthesiologist were selected. There upon, based on these cases, independent patient preference study planning was developed. It is known that regional anesthesia has less negative effects on vital signs, endocrine, and metabolic responses in which occur during operation compared to general anesthesia (10, 11). However, regional anesthesia has difficulties in achieving the desired level of anesthesia, adverse hemodynamic changes, delayed onset of effect, and toxicity of high volume drug use so constitute the difficulties of application. Patients' rejection of regional anesthesia, previous negative experience, pain that may occur during and after the administration, and possible persistent symptoms due to nerve block are among the most common causes. In our study, it was found that anesthesia preference could change according to the type of surgery. Regional anesthesia was preferred more especially in patients who needed surgical treatment such as hand, foot, and finger. Hip or knee prosthesis surgery in elderly patients may have a high risk of morbidity and mortality due to the characteristics of both the patient and the surgery (4, 10). Although the age, gender, marital status, and ASA values of our patients did not have any effect on preference. It was seen that the preference for general anesthesia higher in parallel with the increase in surgical risk. Sargin et al. In the survey conducted by the anesthesiologists on regional anesthesia preferences, 72.2% of the participants expressed their opinion about regional anesthesia. They stated that age, gender, mental status, education level, previous satisfaction, operation site and surgery characteristics were effective in their preferences in varying percentages (12). The choice of anesthesia method may differ depending on the type of surgery performed and postoperative pain treatment due to the physiological changes occurring in the elderly patient. The patient's awareness during the operation process, the continuation of spontaneous breathing, protection of reflexes (coughing, swallowing) may cause regional anesthesia to come to the forefront in determining the method of anesthesia in elderly patients. Salam et al. prospective survey study, in which regional and general anesthesia preference in the group of elderly patients who underwent orthopedic hip and knee prosthesis surgery, indicated that regional anesthesia was generally rejected. The most common reason for rejection was the surgeon's preference, back pain, and fear of being awake during the operation (13). It is accepted that regional anesthesia reduces morbidity and mortality in terms of early results. However, values cannot be standardized within the scope of comorbidities, surgical procedures, and case variables (2, 14). In our study, postoperative findings related to morbidity and mortality in RA and GA patients were not included in the study. It was the limiting effect of the study. Age, gender, and marital status did not have any effect on the distribution of anesthesia preference in our study and this finding was found to be consistent with the literature (5, 15). Patient's education level as well as giving detailed information about GA or RA is important for approaching and informing patients preference anesthesia method (16). In this study, there was a relationship between the preference of anesthesia method in patients with high educational level. The number of patients who had general anesthesia preference without any reason was higher in patients with low educational levels compared to those with university or higher education. ASA (American Society of Anesthesia) risk classification values did not have a significant effect on RA and GA preference distribution in this study.

Conclusion

Anesthesia premedication and method decisions are made in line with the prediction of anesthesiologists. In terms of patients, it was observed that general anesthesia methods were more preferred. Also, patient education level and type of surgical treatment method were found to be effective in preference of anesthesia method.

Acknowledgement, Funding: None.

Author's contributions: EA, LA; Study design, Data Collection, patient examination, collection of questionare and analyses, **LA;** Revisions

Conflict of interest: The authors declare that they have no conflict of interest.

References

1. Hwang SM, Lee JJ, Jang JS, Gim GH, Kim MC, Lim SY. Patient preference and satisfaction with their involvement in the selection of an anesthetic method for surgery. Journal of Korean medical science. 2014;29(2):287-91.

2. Yeung J, Patel V, Champaneria R, Dretzke J. Regional versus general anaesthesia in elderly patients undergoing surgery for hip fracture: protocol for a systematic review. Systematic reviews. 2016;5(1):66.

3. D O'Donnell B, Iohom G. Regional anesthesia techniques for ambulatory orthopedic surgery. Current Opinion in Anesthesiology. 2008;21(6):723-8.

4. Wong PB, McVicar J, Nelligan K, Bleackley JC, McCartney CJ. Factors influencing the choice of anesthetic technique for primary hip and knee arthroplasty. Pain management. 2016;6(3):297-311.

5. Sagün A, Birbiçer H, Yapici G. Patients', who applied to the anesthesia clinic, perceptions and knowledge about anesthesia in Türkiye. Saudi journal of anaesthesia. 2013;7(2):170.

6. Oldman M, McCartney CJ, Leung A, Rawson R, Perlas A, Gadsden J, et al. A survey of orthopedic surgeons' attitudes and knowledge regarding regional anesthesia. Anesthesia & Analgesia. 2004;98(5):1486-90.

7. Pelinka LE, Pelinka H, Leixnering M, Mauritz W. Why patients choose regional anesthesia for orthopedic and trauma surgery. Archives of orthopaedic and trauma surgery. 2003;123(4):164-7.

8. Egol KA, Soojian MG, Walsh M, Katz J, Rosenberg AD, Paksima N. Regional anesthesia improves outcome after distal radius fracture fixation over general anesthesia. Journal of orthopaedic trauma. 2012;26(9):545-9.

9. Chery J, Semaan E, Darji S, Briggs WT, Yarmush J, D'Ayala M. Impact of regional versus general anesthesia on the clinical outcomes of patients undergoing major lower extremity amputation. Annals of vascular surgery. 2014;28(5):1149-56.

10. Helwani MA, Avidan MS, Abdallah AB, Kaiser DJ, Clohisy JC, Hall BL, et al. Effects of regional versus general anesthesia on outcomes after total hip arthroplasty: a retrospective propensity-matched cohort study. JBJS. 2015;97(3):186-93.

11. Urwin S, Parker M, Griffiths R. General versus regional anaesthesia for hip fracture surgery: a meta-analysis of randomized trials. British journal of anaesthesia. 2000;84(4):450-5.

12. Sargın M, Kara İ. Anestezistlerin rejyonal anestezi kararı verirken dikkate aldıkları kriterler: Ulusal bir anket çalışması. Çukurova Anestezi ve Cerrahi Bilimler Dergisi. 2019;2(2):61-9.

13. Salam AA, Afshan G. Patient refusal for regional anesthesia in elderly orthopedic population: A cross-sectional survey at a tertiary care hospital. Journal of anaesthesiology, clinical pharmacology. 2016;32(1):94.

14. Qiu C, Chan PH, Zohman GL, Prentice HA, Hunt JJ, LaPlace DC, et al. Impact of anesthesia on hospital mortality and morbidities in geriatric patients following emergency hip fracture surgery. Journal of orthopaedic trauma. 2018;32(3):116-23.

15. Yek J, Lee A, Tan J, Lin G, Thamotharampillai T, Abdullah H. Defining reasonable patient standard and preference for shared decision making among patients undergoing anaesthesia in Singapore. BMC medical ethics. 2017;18(1):6.

16. Elkassabany NM, Abraham D, Huang S, Kase B, Pio F, Hume E, et al. Patient education and anesthesia choice for total knee arthroplasty. Patient education and counseling. 2017;100(9):1709-13.

Copyright © 2020 The Author(s); This is an open-access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), (CC BY NC) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. International journal of Medical Science and Discovery.