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Evaluation of surgical and anesthesiology physicians' approaches to preoperative medication management: a two-center survey study

Preoperative medication management

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Abstract

Aim: This study aimed to evaluate the approaches of surgical and anesthesiology physicians toward the management of medications used during the preoperative period and to raise awareness about standardizing these practices to minimize perioperative complications.

Methods: After ethical approval, a web-based 27-question survey was distributed between April and July 2023 to surgeons and anesthesiologists working at Fırat University Faculty of Medicine Hospital and Elazığ Fethi Sekin City Hospital. The questionnaire assessed demographic characteristics and clinical approaches to preoperative medication management. Descriptive statistical methods were used for data analysis.

Results: A total of 83 physicians participated; 69.8% were from Fırat University and 30.1% from Elazığ Fethi Sekin City Hospital. Of them, 61.7% reported having a preoperative medication management protocol. Antiplatelet/anticoagulant drugs were the most frequently questioned group (39.8%), while only 4.8% asked about herbal medicine use. Nearly half (49.4%) always discontinued antiplatelet/anticoagulants, mostly one week before surgery. In contrast, 72% continued NSAIDs and 84.1% continued antihypertensive medications. Antidepressants were stopped by 79.5% of participants, and herbal products were questioned by only 39.8%.

Conclusion: Although physicians were generally aware of preoperative medication management principles, significant inconsistencies were observed between knowledge and practice. Decisions were largely based on individual experience rather than evidence-based guidelines. Particularly, limited awareness regarding herbal and psychotropic agents may increase perioperative risk. Standardized institutional protocols and continuous education are needed to improve patient safety and surgical outcomes.

Keywords

preoperative assessment, medication management, anesthesiology, surgery, perioperative complications

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Introduction

Over 4.5 million surgical procedures are performed annually in our country.[1] Preoperative assessment is essential for preventing perioperative complications and mortality related to surgery and anesthesia. Its primary goal is to minimize morbidity and ensure rapid postoperative recovery. A structured preoperative evaluation improves operating room efficiency, reduces delays or cancellations, lowers hospital costs, and enhances care quality. This process is a key element of anesthesia management and requires a multidisciplinary approach in which surgeons and anesthesiologists jointly review medical history, medications, laboratory findings, and systemic examinations.[2]

During preoperative evaluation, clinicians must inquire not only about prescribed medications but also about herbal products, which are frequently perceived as harmless and often overlooked by patients.[3] These agents may interact with anesthetics, causing prolonged anesthesia, delayed awakening, allergic reactions, arrhythmias, and blood pressure instability, and may increase bleeding risk by affecting coagulation.[4] Therefore, decisions on whether to continue or stop medications should be made collaboratively. This study aimed to evaluate preoperative medication-management approaches of physicians in two different institutions and raise awareness on this issue.

Materials and Methods

After ethical approval, a web-based 27-item questionnaire evaluating demographic characteristics and preoperative medication-management practices was distributed to surgeons and anesthesiologists at Fırat University Hospital and Elazığ Fethi Sekin City Hospital. Participation was voluntary, and data were collected between April 1 and July 1, 2023. Descriptive statistical methods were used.

Primary Outcome

To assess physicians' knowledge, attitudes, and practices regarding continuation or discontinuation of drug groups commonly used in the preoperative period, including antiplatelet/anticoagulants, NSAIDs, antihypertensives, psychotropic agents, and herbal products.

Secondary Outcomes

- Comparison of medication-management approaches between physicians in a university and city hospital;
- Identification of factors affecting decision-making (specialty, academic title, protocols);
- Evaluation of awareness regarding perioperative complications related to herbal and psychotropic agents.

Ethical Approval

This study was approved by the Ethics Committee of Firat University (Date: 09.03.2023, Decision No: 2023/04-01).

Statistical Analysis

All statistical analyses were performed using SPSS software (version 25.0, IBM Corp., Armonk, NY, USA). Descriptive statistics were expressed as frequency and percentage.

Reporting Guidelines

The study was reported in accordance with STROBE guidelines.

Results

Eighty-three physicians participated; 69.8% worked at Fırat University Hospital and 30.1% at the city hospital. Specialties included Anesthesiology (36.1%), Otolaryngology (16.9%), General Surgery (9.6%), Neurosurgery (8.4%), Obstetrics and Gynecology (7.2%), Thoracic Surgery (7.2%), Urology (3.6%), Orthopedics (3.6%), Pediatric Surgery (3.6%), Ophthalmology (2.4%), and Cardiovascular Surgery (1.2%). Research assistants constituted 65.1% of respondents.

Among participants, 61.7% reported having institutional medication-management protocols (Figure 1). Antiplatelet/anticoagulants were the most frequently questioned drugs (39.8%), whereas only 4.8% asked about herbal medications (Figure 2). Nearly half (49.4%) always discontinued antiplatelet/anticoagulants, and 48.1% sometimes did so. Discontinuation typically occurred one week (69.2%) or three days (32.1%) before surgery. Warfarin (81.3%), clopidogrel (80%), and aspirin (73.8%) were the most frequently stopped agents (Figure 2).

Regarding NSAIDs, 26% discontinued these agents; 69.6% stopped them 24 hours preoperatively. Most physicians (84.1%) continued antihypertensive medications. However, 12.2% discontinued them 24 hours before surgery; calcium channel blockers (41.2%), ACE inhibitors (41.2%), and diuretics (35.3%) were the most commonly withheld agents.

Antidepressants were discontinued by 79.5% of respondents; 87.5% stopped them 24 hours preoperatively. TCAs (84.1%), MAOIs (76.2%), and SNRIs (69.8%) were the most frequently discontinued (Figure 2). Herbal medications were not well recognized; 55.7% had no opinion about discontinuation, while 38% discontinued them, mostly one week preoperatively. Ginseng (77.4%), Ginkgo biloba (71%), garlic (48.4%), and St. John's wort (48.4%) were the most frequently stopped products. Concerning addictive substances, 38.9% lacked an opinion, while 52.8% discontinued them. About one-third (32%) discontinued substances such as heroin, methamphetamine, and marijuana one week before surgery.

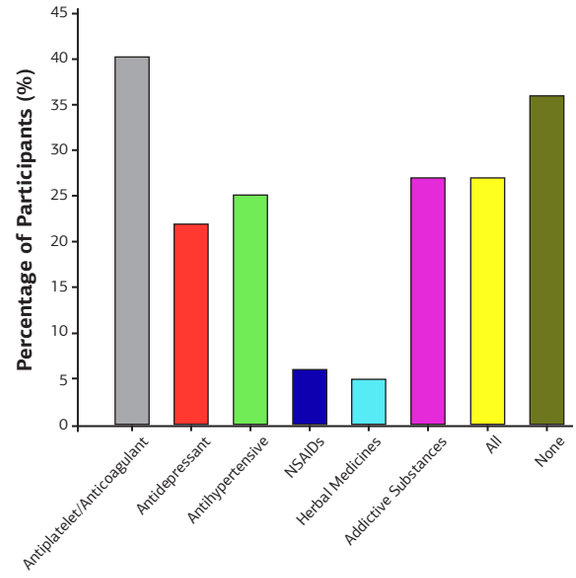

Figure 1. Drugs questioned by participants during preoperative evaluation

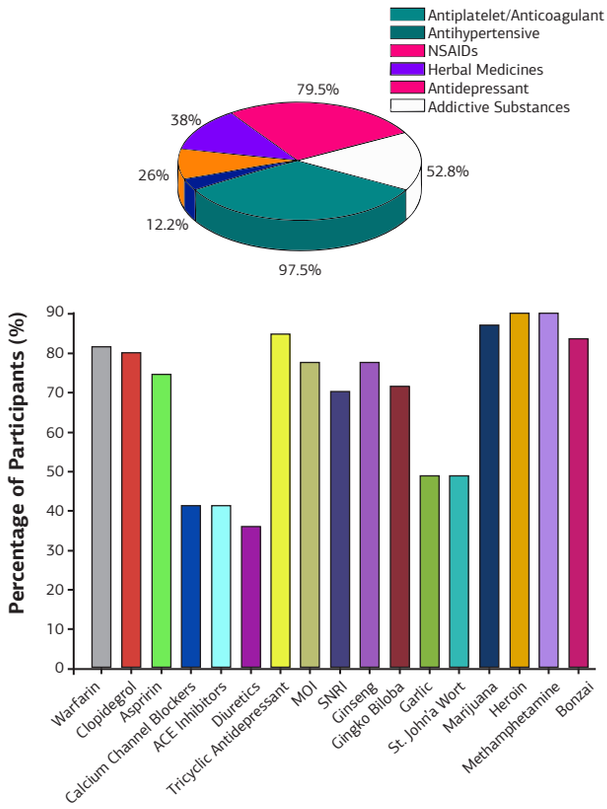

Figure 2. Medications groups most commonly discontinued during the preoperative period.

Discussion

This study is the first to evaluate preoperative medication-management approaches among surgeons and anesthesiologists across different drug groups. Findings indicate that although awareness exists, clinical practice lacks standardization.

Antiplatelet/anticoagulants were the most commonly questioned drugs due to their critical bleeding and thromboembolic implications. Guidelines recommend continuation for low-bleeding-risk surgeries and temporary discontinuation for high-risk procedures.[5] However, 49.4% of physicians reported routinely stopping therapy regardless of surgery type or comorbidities. This suggests limited adherence to guidelines, similar to previous reports where ophthalmologists discontinued medications in 49.1% of cases, irrespective of procedure.[6]

NSAID use is also clinically relevant due to platelet inhibition and potential bleeding. Platelet function typically normalizes within three days after stopping NSAIDs.[7,8] Despite this, only 6% of respondents regularly questioned NSAID use, and most continued them without adjustment, suggesting insufficient consideration of their perioperative effects.[9,10]

Management of antihypertensive medications requires individualized decisions. Beta blockers should generally be continued to avoid withdrawal-related ischemia.[11,12] Calcium channel blockers are considered safe and may be beneficial perioperatively.[13,14] Conversely, ACE inhibitors and ARBs may increase intraoperative hypotension risk and require individualized decisions.[15,16] In this study, although 84% continued antihypertensives, many discontinued ACE inhibitors and calcium channel blockers, indicating heterogeneous practices. Diuretic management also lacks consensus; discontinuation depends on volume status and indication.[17,18]

Psychotropic drugs require balancing psychiatric stability and perioperative safety. TCAs may cause arrhythmia or QT prolongation, but abrupt cessation can provoke withdrawal; guidelines recommend individualized decisions and tapering when necessary.[19] SSRIs and SNRIs may increase bleeding risk and require careful assessment in high-risk surgeries.[20,21] MAOIs pose risks of serotonin syndrome and drug interactions; elective discontinuation may be appropriate with adequate tapering.[21] In this study, most physicians discontinued psychotropics, often without patient-specific adjustment.

Herbal product use is significantly under-recognized. These agents can affect coagulation, cardiovascular function, and anesthetic drug metabolism.[22] Discontinuation one week before surgery is recommended for agents such as ginkgo, ginseng, garlic, and St. John's wort.[23] Yet, more than half of the participants were unaware of perioperative risks, reflecting the need for improved education.

Substance abuse is another essential component of preoperative evaluation. Abrupt discontinuation of opioids may cause withdrawal and complicate perioperative management, whereas stimulants and cannabinoids can increase cardiovascular and anesthetic risks. A multidisciplinary, individualized approach is essential, yet 38.9% of participants lacked clear knowledge, showing the need for standardized clinical guidance.

Limitations

This study has some limitations. It was conducted through a self-reported online survey, which may not fully reflect actual clinical practices. The sample size was limited and included physicians from only two centers, restricting the generalizability of the findings.

Conclusion

This study shows that although physicians are aware of preoperative medication considerations, significant variability exists in clinical practice. Decisions about stopping or continuing antiplatelet/anticoagulants, NSAIDs, antihypertensives, psychotropic agents, herbal products, and addictive substances are often inconsistent and not fully aligned with guidelines. Lack of standardized protocols and inadequate awareness particularly regarding herbal and psychotropic agents—may compromise perioperative safety. Enhancing education and establishing institution-wide protocols could improve standardization and patient outcomes.

Ethics Declarations

This study was approved by the Ethics Committee of Firat University (Date: 2023-03-09, No: 2023/04-01)

Animal and Human Rights Statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent

Written informed consent was obtained from all participants.

Data Availability

The datasets used and/or analyzed during the current study are not publicly available due to patient privacy reasons but are available from the corresponding author on reasonable request.

Conflict of Interest
The authors declare that there is no conflict of interest.

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Data Curation: G.A., F.Ç.
Writing – Original Draft Preparation: A.Y.A.
Writing – Review & Editing: S.Ö., O.H.
Supervision: O.H.

Scientific Responsibility Statement
The authors declare that they are responsible for the article's scientific content, including study design, data collection, analysis and interpretation, writing, and some of the main line, or all of the preparation and scientific review of the contents, and approval of the final version of the article.

Abbreviations
NSAIDs: Nonsteroidal anti-inflammatory drugs
ACE: Angiotensin-converting enzyme
ARBs: Angiotensin receptor blockers
TCAs: Tricyclic antidepressants
MAOIs: Monoamine oxidase inhibitors
SNRIs: Serotonin-norepinephrine reuptake inhibitors

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