KNOWLEDGE OF DENTAL STUDENTS ON THE USE OF LOCAL ANESTHETICS: LITERATURE REVIEW

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ABSTRACT

The objective of this literature review was to evaluate the knowledge of dental students regarding the correct indication of local anesthetics. For this, a search was conducted in the PubMed, Google Scholar, and CAPES Periodicals databases. Articles published between the years 2001 and 2024 were included in this review. The literature review showed that, in all analyzed articles, the students demonstrated unsatisfactory knowledge about the correct indication of local anesthetics, in addition to evidencing a lack of knowledge about vasoconstrictors.

Keywords: Dental students; Local Anesthetics; Dentistry

INTRODUCTION

According to Malamed (2021), local anesthetics used for pain control are notably distinct from most other medications used in medicine and dentistry. Unlike other drugs, which need to reach certain concentrations in the circulatory system to produce their clinical effect, local anesthetics cease to be effective precisely when they are absorbed into the circulation.

It is essential to know the indications, as well as the benefits and risks of each anesthetic, considering the different systemic conditions that each individual may present. A study conducted by Vasconcelos (2009) revealed that students had difficulties in correctly selecting the appropriate anesthetic for patients with systemic

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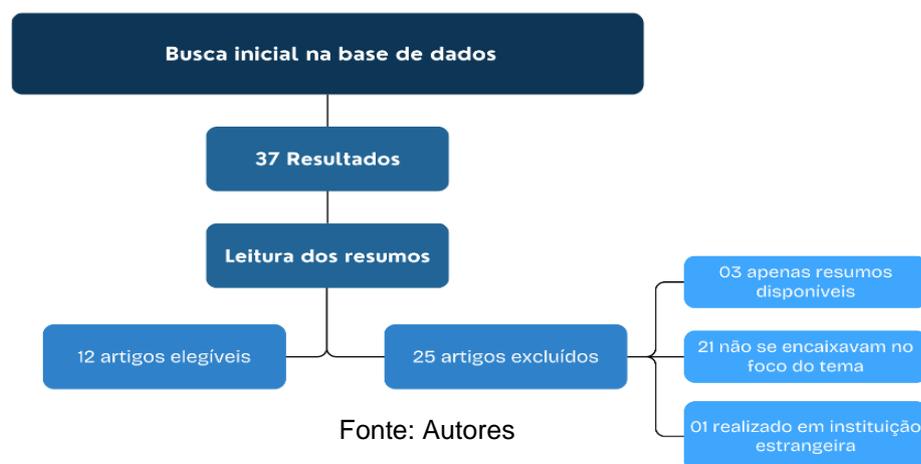
alterations, such as hypertension, pregnancy, hyperthyroidism, and other conditions. There was an overall unsatisfactory performance, highlighting the need for greater preparation and knowledge in this aspect.

The present work aimed to conduct a bibliographic survey on the knowledge of dental students from Brazilian colleges regarding the correct indication of local anesthetics.

METHODOLOGY

A search was conducted in the PubMed, Google Scholar, and CAPES Periodicals databases, using the terms "knowledge", "dental students", "local anesthetics", and "dentistry". The inclusion criteria for article selection were: (1) research conducted in Brazilian colleges; (2) research conducted only with undergraduate students; and (3) articles available in full, excluding those with only the abstract available. The exclusion criteria consisted of: (1) articles that did not fit the focus of the work; (2) studies with only abstracts available, without access to the full text; and (3) research conducted in foreign colleges. The selection process resulted in an initial total of 37 articles. After applying the inclusion and exclusion criteria, 12 articles were selected for detailed analysis (FIG. 1).

Figura 1. Gráfico de fluxo para demonstrar a estratégia de busca utilizada e os estudos excluídos e incluídos.

Fonte: Autores

RESULTS

The Table (TAB. 1) synthesizes the data extracted from the reviewed studies, organizing the information regarding the authors, objectives, methodologies employed, and results obtained in each research, facilitating the comparison between the approaches.

Tabela 1. Dados extraídos dos estudos elegíveis

AUTOR	OBJETIVO	AMOSTRA	QUESTIONARIO	RESULTADOS
Breseghello et al. (2019)	Descrever a compreensão dos acadêmicos sobre o manejo de pacientes com comorbidades e gestantes.	Alunos do 8° e 9° período.	22 perguntas objetivas.	56% demostraram conhecimento sobre atendimento em gestantes,hipertensos e diabéticos e apenas 66% acertaram as questões relacionadas ao diabetes.
Antônio et al. (2023)	Avaliar o conhecimento de alunos sobre reações sistêmicas de toxicidade no uso de anestésicos locais.	Alunos do 4° ao 10° período.	10 perguntas de múltipla escolha.	63,2% dos alunos autodeclararam saber escolher corretamente cada anestésico local. 42,1% responderam corretamente sobre a indicação dos vasos constritores.
Mariz et al. (2023)	Avaliar o conhecimento dos alunos acerca da utilização de anestésicos locais frente a condições sistêmica.	Alunos do 5° ao 10° período.	10 perguntas de múltipla escolha.	9ºP com 62,5% de acertos, seguido por 10ºP com 33,3%, 5ºP com 23,1%, 8 com 20,0%, 6ºP com 19,0% e 7ºP com 16,7%
Souza et al. (2023)	Avaliar o conhecimento de alunos sobre os anestésicos locais nos procedimentos clínicos e cirúrgicos.	Alunos do 6° ao 10° período.	Questionário com 35 perguntas.	7,3% dos alunos conhecem as reações de dos anestésicos locais. 10,2% sabem a dose máxima correta.

Fonte: Autores

DISCUSSION

In the study by Breseghello et al. (2019), a questionnaire was administered to fifth-year dental students (9th and 10th semester) from UNIFUNEC and they demonstrated good knowledge about the care of special patients during anamnesis, especially regarding hypertensive and diabetic patients. From this study, it can be concluded that the level of understanding of undergraduates about dental care for

hypertensive, diabetic, and pregnant patients is satisfactory, reaching about 56%. Regarding performance on the questions, the respondents showed higher accuracy in relation to questions about diabetic patients, with a rate of 66%.

In the study by Antônio (2023), 76 students from the 4th to the 10th semester linked to the Federal University of Campina Grande participated. Only 63.2% of the students self-declared as capable of correctly choosing each local anesthetic. When asked about the main function of vasoconstrictors in the anesthetic solution, only 42.1% answered correctly. The study concluded that students do not feel secure in choosing the local anesthetic.

Mariz (2023) conducted a study with a quantitative-qualitative approach where students from the 5th to the 10th semester of the Dentistry course at the Federal University of Campina Grande who had already taken the anesthesiology discipline participated. The majority of students (68.9%) were already treating patients at the dental school clinic. Only 04 out of the 10 questions about the use of local anesthetics had a majority of correct answers. The 9th semester had the highest percentage of correct answers (62.5%), while the 7th semester had the lowest (16.7%).

The data suggest that there is a deficit in students' knowledge about the use of local anesthetics in the face of systemic conditions, reflecting the need for continuous training to avoid future adverse reactions.

Souza (2023) conducted a prospective study with 100 students from the Federal University of Amazonas enrolled from the 6th to the 10th semester. The study revealed that 57.3% of students know the reactions of a local anesthetic overdose, but 40.7% did not respond. Almost all perform an anamnesis and choose the anesthetic according to the patient's condition, but only 10.2% know the correct maximum dose. For patients with special conditions, between 52.5% and 62.7% correctly indicate the anesthetic solution, with lidocaine with vasoconstrictor being the most recommended.

CONCLUSION

This review demonstrated that the knowledge of dental students about local anesthetics is insufficient, especially in the care of patients with systemic conditions.

The insecurity in choosing and administering, in addition to the lack of familiarity with dosages, reveals the need to improve teaching

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