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ANALYSIS OF KNOWLEDGE ABOUT SEDOANALGESIA IN PATIENTS WITH SEVERE ACUTE RESPIRATORY SYNDROME DUE TO COVID-19 OF HIGHER EDUCATION STUDENTS AT A PRIVATE INSTITUTION IN THE CITY OF ARAGUARI -MG

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Abstract: Patients with COVID-19 who develop Severe Acute Respiratory Syndrome (ARDS) can progress to a serious condition requiring intensive therapy, being subjected to interventions that can cause a lot of pain, anxiety, delirium and discomfort, such as orotracheal intubation and mechanical ventilation. The work aims to collect data about knowledge about sedoanalgesia in medical students, since acting as professionals directly impacts the health system, the quality of care and people's lives. Observational, descriptive, cross-sectional study with practical application in the field of qualitative and quantitative type, with data obtained through the application of questionnaires to analyze relevant variables. The level of knowledge of students from the seventh to the twelfth period at the institution was evaluated. 51.8% of students have never had contact with the topic in their theoretical routine and 58.6% have had no contact in practical scenarios or extracurricular internships, 55.18% have no knowledge to indicate the use of medications, dosages, function, technique administration and criteria for recommending ventilatory support. It is possible to conclude that medical students have little knowledge about sedoanalgesia, which is an obstacle to the effectiveness of the health system.
Keywords: SARS-CoV-2, COVID-19, SDRA, intubation, sedoanalgesia.

INTRODUCTION

In November 2019, the population of the city of Wuhan, located in China, was surprised by a large demand of patients with flu-like symptoms that evolved into serious health problems, mainly related to the respiratory system. In this context, the new coronavirus was discovered, titled SARS-CoV-2 due to its high homology with SARS-COV, which caused Acute Respiratory Distress Syndrome (ARDS) and high

mortality during 2002–2003. In March 2020, at a pandemic level, due to its contagious potential, the disease had already reached several countries causing mass contamination and deaths, especially in groups considered at risk, that is, patients with comorbidities, the elderly and immunosuppressed (YUKI; KOUTSOGIANNAKI, 2020; FREITAS; NAPIMOGA; DONALISIO, 2020).

The high morbidity and mortality of SARS-COV-2 is mainly related to two characteristics: the high dissemination capacity and the extreme severity of cases that progress to ARDS. The clinical presentation resembles symptoms of viral pneumonia and the severity of the disease varies from mild to severe. Symptoms may include sudden onset fever, accompanied by cough, odynophagia, myalgia, headache and arthralgia. Progression to ARDS occurs when the patient experiences dyspnea, respiratory failure, need for oxygen therapy to maintain saturation greater than or equal to 94% and exacerbation of a pre-existing disease. In severe cases, the patient may progress to ARDS related to the need for high oxygen flow to maintain target oxygenation, and often the need for invasive ventilatory support, due to refractory hypoxemia. Initial reports suggest that the severity of the disease is associated with advanced age and the presence of comorbidities (SILVA; MAIA; SOUZA, 2020).

Patients who develop ARDS due to COVID-19 and require intensive therapy are subjected to interventions, which can cause a lot of pain, anxiety, delirium and discomfort, such as orotracheal intubation and mechanical ventilation, necessary in approximately 3% of infected patients, according to information from the US Centers for Disease Control (CDC). To prevent adverse events from occurring, patients in intensive care must have ideal sedation and analgesia and need to be periodically evaluated using various scales, considering that due to different pharmacodynamics, pharmacokinetics, possible drug interactions and accumulation of medications, these can arise. In these patients, analgesia is achieved with drugs from the opioid group (morphine, fentanyl, tramadol and methadone). Sedation can also be done with hypnotics, selective alpha-2 adrenergic agonists (dexmedetomidine and clonidine) and inducers (propofol, ketamine, thiopental); and control of delirium, if necessary, with antipsychotics (haloperidol, risperidone and quetiapine) and low-potency benzodiazepines (lorazepan), (DELVIN, 2018).

According to the study by KAPP et al. (2020), carried out in the ICU of the Johns Hopkins Hospital (JHH), it was observed that patients with COVID-19 in intensive care often needed medication doses below those recommended in existing literature. In this sense, it is of great relevance to collect data about knowledge regarding sedoanalgesia in medical students, since acting as professionals directly impacts the health system, the quality of care and people's lives.

Therefore, we seek, through the application of questionnaires, to collect data on how involved medical students in the seventh and eighth period of the studied institution are with regard to the particularities of patients with COVID-19, such as such as difficulty in algosedation.

Within the context of the medical course at the studied institution, it is observed that the knowledge of students from the seventh to the twelfth periods regarding sedoanalgesia in patients with Severe Acute Respiratory Syndrome due to COVID-19 is limited.

It is already a consensus that some patients hospitalized with COVID-19 will require admission to Intensive Care Units and undergo invasive mechanical ventilation, and consequently the use of sedatives and

analgesics. As it is a recent disease, there is still not a large amount of information in the literature about the management of these patients. Therefore, this work seeks, through a cross-sectional study, subsidies that allow clarifying the particularities of algosedation and the management of refractory hypoxemia.

Therefore, the present study aims to highlight the level of knowledge of medical students from the seventh to the twelfth period regarding sedoanalgesia in patients with Severe Acute Respiratory Syndrome due to COVID-19.

METHODOLOGY

This is an observational, descriptive, cross-sectional study with practical application in the field of qualitative and quantitative type, using technical procedures for obtaining data through the application of questionnaires prepared by the authors for the purpose of surveying and analyzing variables relevant to the study in question.

The study was carried out at `` Centro Universitário IMEPAC Araguari`` (MG), with medical students, enrolled from the seventh to the twelfth period, through the application of questionnaires prepared by the authors, from June 1 to 30, 2021. Students were selected according to the inclusion and exclusion criteria.

The project included academics from Centro Universitário IMEPAC Araguari-MG, aged between 18 and 45 years old, as participants.

The study was carried out using the following criteria: age, sex, period, contact with the topic in its theoretical routine, contact with the topic in its practical scenario or extracurricular internships, application of the RASS scale, main sedatives used in hypnosis induction, difference between hypnosis and sedation, use of non-barbiturate hypnotics, use of sedatives and opioids used in analgesia,

bispectral index (BIS), drugs for sedation and intubation in patients with COVID-19, Behavior Pain Scale (BPS) protocol and extubation of the patient after the respiratory condition has resolved.

Initially, a voluntary non-probability sampling technique was used with the purpose of inviting students to respond to the research instrument. To determine the sample size (n), random probabilistic sampling was used in a population (N) of 399 students.

The calculation for the sample result adopted the following parameters: 95% confidence level, with a margin of error of 5%, and a population proportion of interest equal to 50% (P equal 50%). The sample size resulted in 196 academics (n = 196).

The research instrument used to collect data was an exploratory questionnaire with 15 questions, applied via the Google Forms Tool.

Participants were informed about the research and the objectives via class e-mail and the representative. Representatives, together with teachers, will be instructed to reinforce the dissemination of the study and the importance of responding to the instrument.

During the period of access to the Google Forms platform, the academic found the Free and Informed Consent Form (TCLE), highlighting the most important information from the research protocol, allowing the participant to make their decision fairly, without obligation and without constraints, before proceeding to the next step.

After signing the TCLE, the student was able to answer the form used as a data collection instrument. The questions addressed were related to the choice of medications for the institution of sedoanalgesia in patients undergoing mechanical ventilation due to COVID-19, seeking to explain dosages and functions of each medication. This questionnaire is self-administered, with multiple choice questions that require an

estimated response time of 5 minutes.

The inclusion criteria include medical students at Centro Universitário IMEPAC-MG, aged between 18 and 45 years, who are between the seventh and twelfth periods and agree to participate in the research.

Failure to answer questions correctly, omitting information and submitting an incomplete questionnaire will be considered exclusion criteria.

Initially, the data were tabulated and organized with the help of Excel® Software and the BioEstat® Software will be used for their descriptive and inferential treatment, with central and dispersion statistics being calculated and relevant hypothesis tests being applied. Categorical variables were described as proportions with respective 95% confidence intervals. As for numerical variables, means and medians were calculated, with their measures of dispersion, standard deviation (SD) and interquartile.

Next, the frequency distribution of the variables analyzed in the questionnaire was carried out and the prevalence of each of these variables was calculated.

For the purpose of comparison, the relationships of the observed proportions of the independent variables, Chi-Square tests or the T-Student test, were used using the BioEstat® statistical program, considering a significance level of 5% ($p = 0.05$).

This research will not bring risks to the academics who chose to respond, as the forms were online, following all precautions regarding the moral, social and psychological integrity of the research subjects, avoiding embarrassment and any type of judgment. It is worth noting that all participants were assured of the confidentiality of their responses, clarifications about the research and the freedom to interrupt their participation at any time during the study. As this is a cross-sectional study, the evidence observed will bring benefits to future academic interventions, benefiting the training of future doctors.

Regarding ethical aspects, the study in question will follow all the criteria of the Research Ethics Committee based on Resolution 466/12 of the National Health Council (CNS), considering the four pillars of bioethics: autonomy, non-maleficence, beneficence and justice. All established ethical principles were respected with regard to ensuring the legitimacy of information, particularity, privacy and confidentiality, when necessary, making the results of this research public.

The data collection will show that sedoanalgesia, when well performed by the professional, has a great influence on improving patient complaints and brings benefits in terms of reducing the occurrence of adverse events and mitigating morbidity and mortality during ICU admissions, as it improves the induction of tissue oxygenation and reduces the risk of accidental extubation. Therefore, we want to know the uniqueness of algosedation in patients with ARDS due to COVID-19 with indication of invasive ventilatory support, as it has been repeatedly observed that patients affected by SARS-CoV-2 needed higher doses to achieve sedation, compared to the medicinal doses already recommended in the literature (HANIDZIAR, BITTNER 2020). Thus, with the practice of the present work, the knowledge of students from the seventh to the tenth period of medicine at a private higher education institution about sedoanalgesia in patients with ARDS due to COVID-19 was evaluated, data relating to the indication for the use of medications and dosages, function, administration technique and criteria for recommending ventilatory support.

RESULTS AND DISCUSSIONS

The present observational study aimed to evaluate the level of knowledge of students enrolled from the seventh to the twelfth period at the institution in question, developing and applying an exploratory questionnaire with 12 questions regarding sedoanalgesia in patients with Severe Acute Respiratory Syndrome due to COVID-19, applied via Google Forms Tool. The questions contained in the form (Table 1) had "yes" or "no" alternatives to be marked. It was designed this way in order to obtain greater acceptance from students with clear, objective and quick-to-answer questions.

After applying the form, 210 responses were obtained, resulting in the following result (figure 1):

The data indicated (Brazil, 2021), until September 25, 2021, 231,515,976 cases of COVID-19 were recorded in the world and 21,343,304 in Brazil. In relation to the number of deaths per 1 million inhabitants, the world presented, until the same date, a rate of 602.3 deaths/1 million inhabitants, while Brazil presented a rate of 2,806.1 deaths/1 million inhabitants, reaching 7th position among countries.

Therefore, sedoanalgesia in COVID-19 patients has become a very relevant topic in the current pandemic scenario. However, the results demonstrated that 51.8% of students at the private institution analyzed never had contact with the subject in question in their theoretical routine and 58.6% had no contact in practical scenarios or extracurricular internships.

Furthermore, when performing an arithmetic average between the questions addressed, 55.18% of students do not have the knowledge to indicate the use of medications and dosages, function, administration technique and criteria for recommending ventilatory support.

A pie chart was then created (figure 3) in order to compare the proportion of knowledge about sedoanalgesia in patients with severe acute respiratory syndrome due to COVID-19 among students from the seventh to the twelfth period.
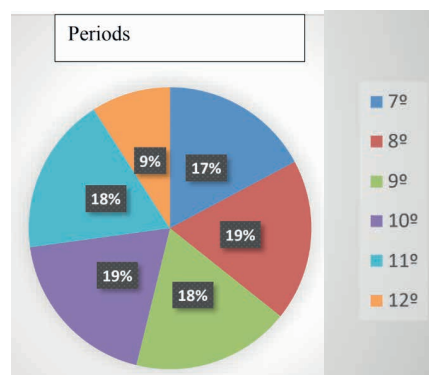

Figure 3: Comparative graph of knowledge between students from the seventh to the twelfth period.

Finally, the age of the students in the sample used was also analyzed using the form (figure 3).

CONCLUSION

With the high spread of the SARS-COV-2 virus in 2019 across the world, healthcare systems collapsed, resulting in countless extremely serious patients, many of whom progressed to intensive care, requiring orotracheal intubation. or mechanical ventilation. To avoid adverse events, patients in intensive care must have optimal sedation and analgesia. Given this scenario, it is possible to highlight the need for qualified professionals.

The actions and knowledge of healthcare professionals directly impact the healthcare system. Thus, medical students, future professionals who worked in this scenario, were analyzed regarding their knowledge about sedoanalgesia in a pandemic scenario.

Therefore, it is clear that COVID-19 creates several obstacles for health professionals, as it is not yet a deeply understood disease.
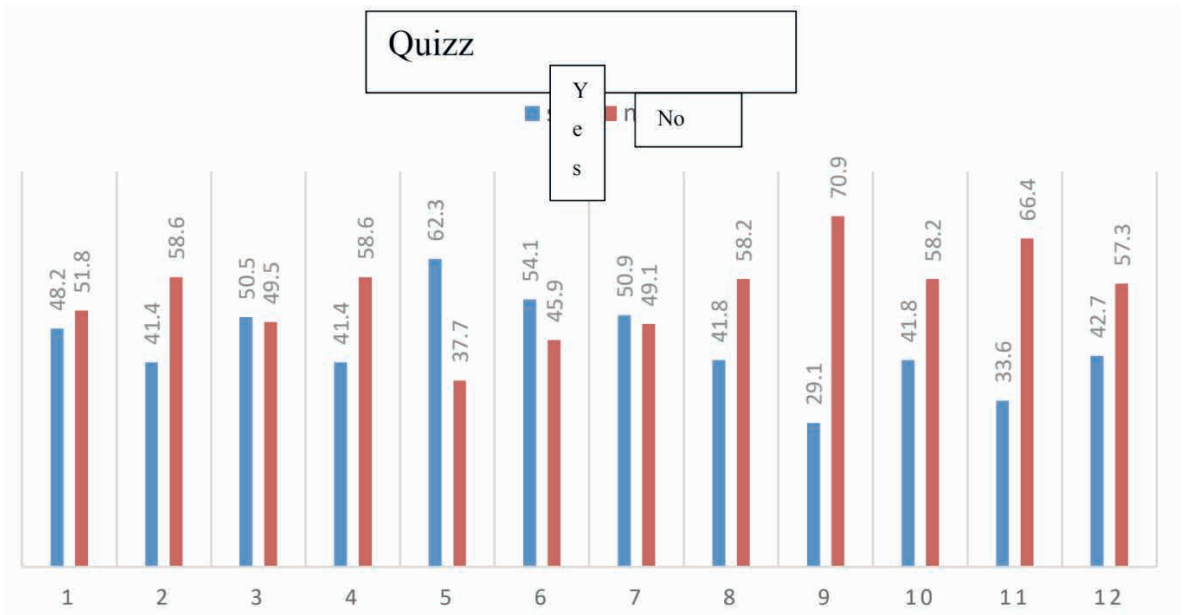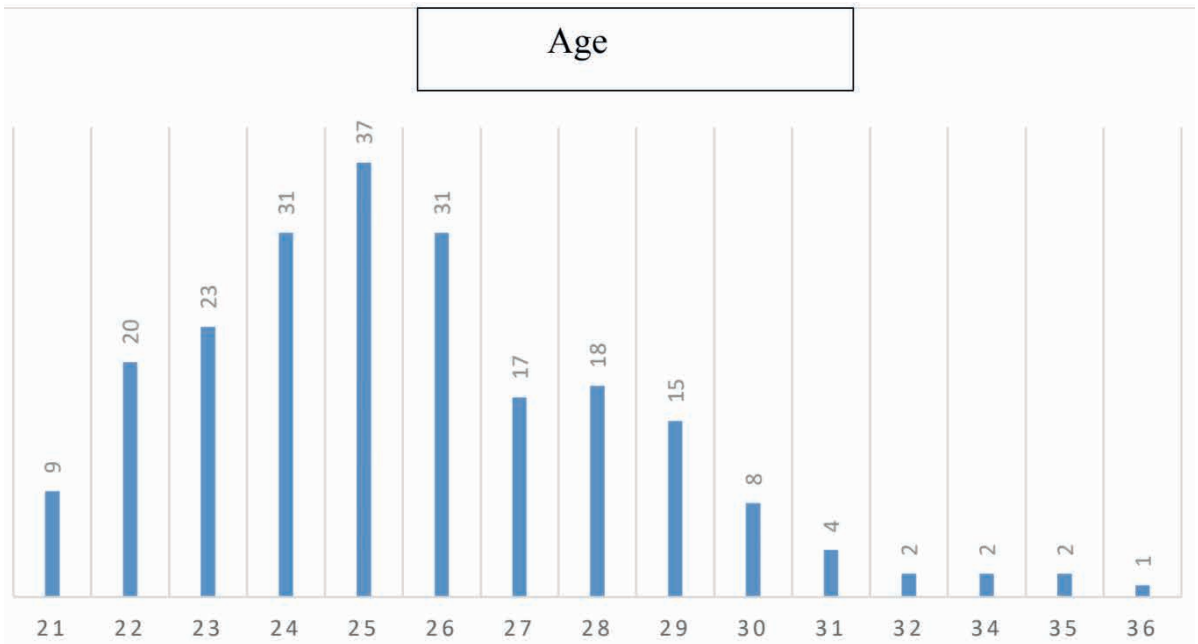
Figure 2: graph showing comparisons of the answers obtained for each question in the questionnaire with "yes" and "no".

Source: Authors themselves.

Graph 3: Age of students by number of responses.

Table 1

Nº	Questions
1	Have you already had contact with this topic in your theoretical routine?
2	Have you already had contact with this topic in your practical setting or extracurricular internships?
3	The RASS scale is the main scale used to evaluate hypnosis within the ICU, do you know how its application works?
4	Do you know which main sedatives are used in hypnosis induction?
5	Do you know the difference between hypnosis and sedation?
6	Diazepam, Clonazepam, aldehydes and bromides are examples of non-barbiturate hypnotics, do you know when the use of these medications is indicated?
7	Morphime, dexmedetomidine, sufentanil are examples of sedatives and opioids used in analgesia, do you know when the use of these medications is indicated in patients in intensive care?
8	Do you know what a bispectral index (BIS) is?
9	Do you know what a value of 60 on the bispectral index (BIS) means?
10	According to the recommendation of drug combinations for sedation, intubation and continuous sedation in COVID-19, there should be 3 types of drugs, do you know what they are?
11	Do you know which questions are assessed in non-communicative and sedated patients, using the Behavior Pain Scale (BPS) protocol as a reference?
12	Do you know how sedation is removed to extubate the patient after the respiratory condition has resolved?

Figure 1: Table with questions contained in the form.

Source: Authors themselves.

Therefore, given the academic scenario observed, it was possible to conclude that medical students from the seventh to the twelfth period have little knowledge about the subject studied.

Given the importance of the subject, a theoretical and practical basis on sedonalgesia and now sedoanalgesia in patients with COVID-19 in educational institutions is highly necessary, since they will be the professionals working in this pandemic scenario.

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