*https://dx.doi.org/10.22161/ijaers.6.6.80* *ISSN: 2349-6495(P) | 2456-1908(O)*

# Evaluation of Pain Intensity and Analgesia used in Patients in the Postoperative Period in a Hospital in the Interior of Bahia

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***Abstract—*** *Pain is a detestable emotional, sensory experience that usually occurs in varying degrees of intensity, identifying itself as multidimensional, as high in quality as in intensity, being able to result from nerve stimulation as a result of injury, emotional disturbance or disease. In this way it makes possible the certification in which pain is a singular and particular experience. The present study aims to evaluate the intensity of pain and analgesia used in patients in the postoperative period in a hospital in the interior of Bahia. This is a quantitative, descriptive and cross-sectional study conducted in a public hospital in the interior of Bahia through a structured questionnaire and the analysis of medical prescriptions. The research involved 50 participants who underwent surgical procedures. NVS was used to assess pain intensity. The data were analyzed in the statistical program SPSS 22.0. The predominance of the male gender (78%) and the age groups of 62-72 years (32%) were observed. In addition, 64% of the participants presented prescription of some type of opioid. 86% presented some type of pain and 76% had mild pain. The results of this research indicate the need for systematic evaluation of pain in postoperative patients, aiming at its control, contributing to the recovery of these patients.*
***Keywords—*** ***Analgesia; Post-Operative Pain; Pain Evaluation.***

## I. INTRODUCTION

The word Pain originates from Latin *dolor* and Greek *algos*, which gave rise to the terms *doleur* in French, *pain* in English, *dolore* in Italian and *pain* in Portuguese (SAÇA et al., 2010).

According to IASP - The International Association for the Study of Pain (1986) establishes pain according to a complicated emotional and sensory experience, added to actual or latent, subjective at all times. It is identified as a multidimensional experience, in a high degree in quality as in intensity, with autonomic, affective, behavioral and sensorial points (DELLAROZA et al., 2012).

According to Meier and collaborators (2017), this definition makes possible the certification in which pain is a singular and particular experience, in this way pain is a subjective experience that is correlated not only with the sensorial constituent but also with an emotional constituent. thus be described as subjective.

The definition of clinical pain poses a great challenge to researchers, taking into account the subjectivity, difficulty and dimension of pain giving meaning to the patient. Over 20 years, there were improvements related to the production of resources, which facilitated the relationship in the patients' lives with the responsible professionals, allowing to identify both the occurrence, persistence and potency of the pain felt, according to the reduction acquired through the use of several analgesic strategies (PEREIRA and SOUZA, 1998).

Postoperative pain (DPO) is frequent and expected after large and medium-sized operations resulting from activation of nociceptors and local inflammatory response

https://dx.doi.org/10.22161/ijaers.6.6.80 ISSN: 2349-6495(P) | 2456-1908(O)

at the site of surgical injury. Some writers argue that the following sympathetic activation of the surgical lesion remains following the procedure and is capable of leading to potentially harmful situations to the point of causing hypertension, tachycardia, immune suppression, hyperglycemia, reduced local blood flow, and platelet aggregation (TEIXEIRA et al. 2014).

DPO is the patient's own unique and normal occurrence of preservation to the body which constantly arises when a certain tissue is injured, thus causing a reaction in the individual causing him to try to prevent the painful impulse. Due to its high relevance in the postoperative period, the DPO should be moderated to such an extent that it does not affect the patient's well-being, does not provide unnecessary suffering and does not allow other types of complications (BARBOSA et al., 2014).

Regarding the relationship between the drugs used, the World Health Organization (WHO) recommends the association of analgesics with different actions, which decrease the manifestation of possible adverse effects, corresponding to the use of smaller doses, making it essential that the prescription adjust to any need of the patient (BARBOSA et al., 2014).

Considering an extensive alternative in relation to the treatment of OPD, it is indispensable to form protocols in order to improve the questioning about pain (TEIXEIRA et al., 2014).

Therefore, the General Directorate of Health in Circular Normative No. 9 / DGCG of 14/6/2003, indicates pain as the 5th vital sign. Thus, good techniques of useful health activities were established, according to the systematic recording of pain intensity and the application during the measurement of its intensity, of one of the resulting internationally validated scales: Visual Analogue Scale, Quantitative Scale or Face Scale.

According to statements by Bottega and Fontana (2010), the use of pain scales represents a way to humanize care in which the patient's greatest interest is, taking into account what he describes and feels, and is therefore of extreme importance in doing so. that the patient has the right of expression. This method is of great relevance for planning care for the patient's pain and pathology by minimizing their suffering. In this sense, the objective of this study was to evaluate the intensity of pain and analgesia used in patients in the postoperative period in a hospital in the interior of Bahia.

## II. MATERIALS AND METHODS

This study is based on a quantitative, descriptive and cross-sectional study carried out in a public hospital in the interior of Bahia, which is large and caters to highly complex patients. Fifty patients were interviewed and the other data were collected at the Clinical Surgical Unit in the postoperative period. The research was carried out between February and April, using interviews with questionnaires that dealt with socioeconomic aspects, medicines used, obtained through medical prescription and pain intensity evaluation, which were classified by scale.

The Numerical Visual Scale (NVS) comprises a line 10 centimeters long, where it is numbered from 0 to 10. It was considered that "no pain" = 0, "mild pain" = 1-4, "moderate pain"= 5-7 and "severe pain"= 8-10 (CALIL, PIMENTA, 2005).

Inclusion criteria were patients older than 18 years of age who underwent surgical procedure. The exclusion criterion used was the patients who are presenting some type of limitation that does not become fit to participate in the research.

The data were tabulated and analyzed through the statistical program SPSS 22.0. Absolute and relative frequency analyzes were performed. In addition, correlations between the variables were analyzed using the chi-square test or the Fisher's exact test, considering a significance level of 5%.

This study was approved by the Ethics Committee of the FaculdadeIndependente do Nordeste - FAINOR through opinion no. 3,209,338. Participants signed the Free and Informed Consent Term (TCLE), ensuring the integrity of the work and clarified any doubts about the work addressed.

## III. RESULTS AND DISCUSSION

It was reported that the largest percentage were male subjects 78% (n = 38), aged 62-72 years 32% (n = 16). According to Tomasi and collaborators (2017), the male sex presents a higher risk of becoming ill, since the women present a higher life expectancy in relation to the men. Regarding the age group, the index of surgical procedures also increases, establishing an alert for the indispensability of a reorganization of the health system.

Among the participants, 50% (n = 25) declared themselves to be brown, single 50% (n = 25), 74% (n = 37) state that they live at home or apartment with their family, 38% n = 19) live with a partner, and they may affirm more than one family option.

The variants of religion, catholic 50% (n = 25), schooling were analyzed, in which, from the 5th to 8th grade of elementary school (old gymnasium) and high school completed the same values 24% (n = 12). With respect to the monthly family income of the participants,

*https://dx.doi.org/10.22161/ijaers.6.6.80* *ISSN: 2349-6495(P) | 2456-1908(O)*

according to the Minimum Salary (SM) of 2018, equal to R $ 954,00 reais, the average salary was from 01 to 03 minimum wages 86% (n = 43). Regarding the occupation, 36% (n = 18) work with a formal contract, and 64% (n = 32) of the interviewees live in another municipality (Table 1).

*Table 1 - Socioeconomic data on patients in the postoperative period of a hospital in the interior of Bahia in 2019.*

| VARIABLES | n | % |
|---|---|---|
| **Gender** | | |
| Male | 39 | 78 |
| Female | 11 | 22 |
| **Age Group** | | |
| 18-28 | 5 | 10 |
| 29-39 | 8 | 16 |
| 40-50 | 4 | 8 |
| 51-61 | 8 | 16 |
| 62-72 | 16 | 32 |
| 73-85 | 9 | 18 |
| **declared color** | | |
| White | 10 | 20 |
| Black | 8 | 16 |
| Brown | 25 | 50 |
| Yellow | 7 | 14 |
| **Civil Status** | | |
| Single | 25 | 50 |
| Married /with a companion | 18 | 36 |
| WidowedWidowed | 3 | 6 |
| Divorced / Separated / Disqualified | 4 | 8 |
| **Religion** | | |
| Catholic | 30 | 60 |
| Protestant / Evangelic | 14 | 28 |
| No religion | 6 | 6 |
| **Where do you live?** | | |
| In your apartment or home with my family | 37Self- | 74owned |
| apartment or flat | 13 | 26 |
| **Who do you live with?** | | |
| I live alone | 13 | 26 |
| Father and / or mother | 15 | 30 |
| Spouse / Partner | 19 | 38 |
| Children | 11 | 22 |
| Siblings | 5 | 10 |
| **Education** | | |
| Did not study | 6 | 11 |
| From 1st to 4th grade of elementary school | 11 | 22 |
| From 5th to 8th grade of primary | 12 | 24 |

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| | | |
|---|---|---|
| school | | |
| High school incomplete | 4 | 8 |
| High school complete | 12 | 24 |
| Higher education incomplete | 3 | 6 |
| Higher education complete | 2 | 4 |
| Postgraduate | 0 | 0 |
| **Which your occupation** | | |
| Employee (signed) | 18 | 36 |
| Public employee contractedemployed | 5 | 10 |
| Self- | 7 | 14 |
| Retired / Pensioner | 10 | 20 |
| Unemployed | 8 | 16 |
| Widowed | 2 | 4 |

**Source**: Data collected by the researcher (2019)

Regarding the surgical procedures, of the 50 participants, 46% (n = 23) performed orthopedic procedures, totalizing most of them. Then, General Surgery 24% (n = 12), Neurology 14% (n = 7), Oncology 10% (n = 5) and finally, Vascular 6% (n = 3) (Table 2).

According to January 2019 data from DATASUS, of a total of 299,608 beds available in Brazil for hospitalizations made through the Unified Health System - SUS, 37,497 are dedicated to general surgery patients, 14,309 orthopedic surgeries and 3,510 for oncological surgeries. No data were found for neurological surgery.

*Table 2 - Data related to the surgical procedures and analgesic treatment prescribed after the surgical procedure.*

| VARIABLES | n | % |
|---|---|---|
| **Procedure performed** | | |
| Orthopedics | 23 | 46.0 |
| General Surgery | 12 | 24.0 |
| Neurology | 7 | 14.0 |
| Oncology | 5 | 10.0 |
| Other | 3 | 6.0 |
| **Analgesia (prescription drugs)** | | |
| Dipyrone | 48 | 53.3 |
| Tramadol | 27 | 30.0 |
| Morphine | 8 | 8.0 |
| Gabapentin | 3 | 3.3 |
| Paracetamol | 3 | 3.3 |
| Ketoprofen | 1 | 1.1 |
| TOTAL | 90 | 100.00 |

**Source**: Data collected by the researcher (2019)

Fifty prescriptions were analyzed in the a total of 90 drugs were found, and the vast majority of the drugs were prescribed in combination, ie, multimodal analgesia. In this way, dipyrone 53.3% (n = 48), tramadol 30% (n = 27), morphine 8% (n = 8), gabapentin 3,33% (n = 3), paracetamol 3.3% = 3), ketoprofen 1.1% (n = 1). (Table 2)

Konijnenbelt-Peters et al. (2017), shows that many studies report good efficacy of dipyrone as an analgesic in the postoperative period. Oral dipyrone has high bioavailability and is absorbed rapidly. A meta-analysis

*https://dx.doi.org/10.22161/ijaers.6.6.80* *ISSN: 2349-6495(P) | 2456-1908(O)*

shows that, following an oral dose of 500 mg dipyrone, 70% of patients experience at least 50% pain relief in 4 to 6 hours.

The second drug used was tramadol, this data is in agreement with the study of Barros and Lemonica (2003), whose pharmacological properties make its use extremely relevant in different clinical circumstances, by understanding part of its analgesic action that is not dependent of opioid mechanism. Tramadol is a moderate opioid analgesic, making it always associated with a non-opioid analgesic with the purpose of achieving adequate analgesia.

The use of gabapentin has an efficient absorption, becoming a multimodal analgesia, bringing a decrease of pain and even use of smaller doses of opioids constituting a new vision in the therapy of postoperative pain. It is worth mentioning that gabapentin was used in subjects submitted to 3.3% of patients (CLIVATTI, SAKATA and ISSY 2009).

The union of drugs of different classes and with different means of action aims to achieve the expected analgesic effect with the decrease of some possible side effect. Multimodal analgesia, with an association of different classes of drugs, ie two or more drugs for pain or non-pharmacological interventions with different mechanisms allows a more adequate effect. With this, the decrease of opioids that may cause side effects (LADHA et al, 2016 and CLIVATTI, SAKATA and ISSY 2008).

The use of a drug relationship that presents different mechanisms can increase the analgesic effect and reduce the side effects, thus minimizing the total amount of each drug (LADHA et al, 2016).

Analgesia can be established as the decrease or suppression of pain. Reduction of pain is seen as a fundamental human benefit and, as such, it is not only a clinical case, but also an ethical question that involves all health professionals. Pain afflicts millions of people around the world and is shown as the first reason for medical consultations (FERREIRA, et al, 2014 and MARTINEZ et al., 2011).

With reference to the preoperative cycle, the practice shows that patients who are properly oriented on the treatment and with the help of this knowledge during the hospitalization, tend to evolve in a distinguished way, with rapid improvement and excellent future results. In addition, all methods performed must be presented in such a way that the patient is actively involved in the established therapeutic plan, including their measures and possibilities (VITAL et al., 2018).

*Table 3 - Pain intensity assessment according to pain scales Numerical visual range and range.*

| VARIABLES | n | % |
|---|---|---|
| **Numerical Visual Scale (NVS)** | | |
| 0 (without pain) | 7 | 14.0 |
| 1 | 3 | 6.0 |
| 2 | 13 | 26.0 |
| 3 | 10 | 20.0 |
| 4 | 12 | 24.0 |
| 5 | 3 | 6.0 |
| 6 | 1 | 2.0 |
| 7 | 0 | 0.0 |
| 8 | 1 | 2.0 |
| 9 | 0 | 0.0 |
| 10 (maximum pain) | 0 | 0.0 |
| | | |
| **NVS per Range** | **n** | **%** |
| No pain | 7 | 14.0 |
| Mild pain | 38 | 76.0 |
| Moderate pain | 4 | 8.0 |
| Intense pain | 1 | 2.0 |

**Source**: Data collected by the researcher (2019)

Because they undergo surgical procedures, pain has a high incidence among patients. Given the complexity and subjectivity of the painful experience, analgesia control and its measurement becomes the first

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challenge, and only the questioning of the patient does not adequately favor their evaluation, since not all will have conditions to report them, in a clear and effective way. It is clear that pain control still deserves greater care and attention in its evaluation by health professionals (BARBOSA et al., 2014).

The use of pain scales reflects a way of humanizing the care in which the patient's greatest interest is, taking into account what he describes and feels, and is therefore of utmost importance making the patient have the right to expression. This method is of great relevance for the planning of care in relation to the patient's pain and pathology, thus minimizing their suffering (BOTTEGA; FONTANA, 2010).

It was found in the present study that the incidence of complaints was high, inasmuch as 43 (86%) participants reported some pain intensity. In a similar study, a high incidence of pain was observed at the time of the interview (PIMENTA et al, 1992). Still with regard to pain, it was found that a greater number of patients presented mild pain, corresponding to 76% of the interviewees.

One should also consider the beliefs and psycho-emotional aspects of each individual that may influence the high incidence of mild pain. It is known that in some cases the patient may not even report the frequency and presence of pain due to cultural issues as well as issues related to the passive personality itself, which may be related to the findings of this investigation, in which the majority of patients reported pain of mild intensity (SILVA, 2007).

It was also noted that only 14% (n = 7) patients did not present pain during the interview, corroborating another study in which a small number of patients did not feel pain during the postoperative period analyzed (GIACOMAZZI and LAGGIO; MONTEIRO, 2005).

This result points to a relevant aspect: the confirmation that the pain accompanies the trauma caused by the surgical procedure. In addition, it also shows the magnitude of the pain intensity presented by the patients.

Regarding the number of analgesics prescribed by patients, it can be observed that 56% (n = 8) of the patients had prescription of two analgesics in their medical records. In addition, 100% of the participants had the prescription of at least one analgesic. It was not possible to observe a correlation between the type and number of analgesics prescribed, and the pain intensity. However, it is advised that the analgesic treatment be done in three levels, the first one being mild pain, the second, the moderate pain and the third, the intense pain. For level 1 NSAID prescription is indicated. For level 2, the association of NSAIDs with weak opioids is indicated, and for level 3, the association of NSAIDs with strong opioids is indicated. As postoperative pain tends to decrease over time, its treatment should be initiated by the third step (SILVA, 2007).

In this respect, 32 (64%) were found to have opioid prescription. However, 2 (4%) patients who presented moderate pain had only NSAID prescription, demonstrating an inadequate analgesic prescription.

## IV. FINAL CONSIDERATIONS

The results of this research indicate the need for systematic evaluation of pain in postoperative patients, aiming at its control, contributing to the recovery of these patients, since pain information leads to an increase in the synthesis of catecholamines and hormones, which released in an intense and prolonged way, can produce alterations in the organism such as alterations in the coagulation, reduction of the immune response, peripheral vasoconstriction, tachycardia, tachypnea increase of the arterial pressure, in this way delaying the recovery of the patient, also being able to occur the reduction of gastric emptying and predisposition to nausea, vomiting and reduction of intestinal tone.

It should be pointed out that some limitations of the present study can be pointed out, such as the fact that the sample is composed of 50 patients and because it was non-probabilistic, which compared to large specialized centers can be considered a very small number. However, such limitations do not compromise the results obtained in this research, since the statistical tests adopted ensure the reliability of these findings.

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