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PUBLICAÇÃO OFICIAL DA **SBC**

REVISTA DA SOCIEDADE BRASILEIRA DE
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Sociedade
Brasileira de
Cancerologia

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EDITORIAL

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De arma de guerra a remédio contra o câncer

Entrando na cápsula do tempo, estamos em 1822 no laboratório do químico César-Mansuète Despretz que tinha como intenção produzir uma medicação que deveria ser usada de forma tópica para tratar patologias da pele. De maneira não planejada, quis o destino que fosse sintetizado uma das substâncias mais tóxicas já vistas, o famigerado gás mostarda.

Tratava-se de líquido oleoso, incolor e de odor inocente, lembrando a temperos de uso na culinária, mas desde o início já era percebido suas propriedades altamente irritantes e vesicantes. Se aproveitando da toxicidade extrema e duradora da substância e como a maldade humana é ilimitada, por que não usá-la em forma de aerossol nos campos de batalha?

Em 1943 no porto de Bari, litoral adriático da Itália, bombardeiros alemães perfuram o casco do navio S.S. John Harvey que continha em seu interior toneladas de artefatos bélicos contendo gás mostarda. Enorme explosão pulveriza tal substância no ambiente. Diversas lesões puderam ser relatadas, mas foram as necrópsias que revelaram grande dano às células precursoras da série branca da medula óssea.

Coube aos farmacologistas Alfred Gilman e ao físico e farmacologista, Louis S. Goodman, estudando os efeitos causados pela liberação do gás no ambiente e sua toxicidade. Após mudanças moleculares, estava sintetizada a mecloretamina.

A comunidade médica passa a perceber que é possível tratar o câncer com medicamentos.

Daí para frente foram inúmeras classes de substâncias sintetizadas. Citocinas, anticorpos monoclonais, hormonioterápicos, drogas alvo específicas e a imunoterapia. Todas com o objetivo de promover a apoptose da célula tumoral.

Das enormes contribuições no estudo da genética própria dos tumores surge a medicina de precisão, onde indivíduos com tumores "aparentemente" semelhantes podem se beneficiar com tratamentos individualizados.

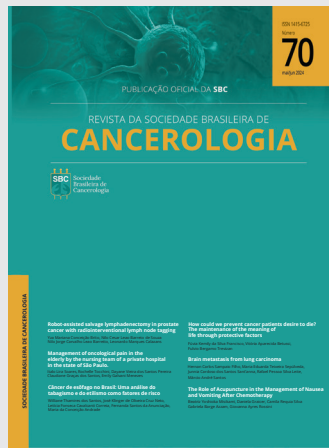
Para o tratamento do câncer o céu é o limite ... ou seja, não há limites.

Dr. Hézio Jadir Fernandes Júnior
Secretário Geral

Fundada em 25 de julho de 1946, sendo a mais antiga entidade de cancerologia da América Latina e uma das que se mantém em atividade na luta contra o câncer há mais tempo em todo mundo.



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Cancerologia



**PUBLICAÇÃO OFICIAL DA
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DE PSICO-ONCOLOGIA**

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STUDIES RESEARCH

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ARTIGO ORIGINAL | ORIGINAL ARTICLE

Robot-assisted salvage lymphadenectomy in prostate cancer with radiointerventional lymph node tagging**Robot-assisted salvage lymphadenectomy in prostate cancer with radiointerventional lymph node marking**

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SUMMARY

Prostate cancer is the second most common tumor in men worldwide, with lethality directly related to its staging. In general, radical prostatectomy represents the first line in the treatment of patients with prostate cancer, but even with improvements in diagnosis and advances in surgical techniques for the treatment of localized prostate cancer, it still occurs in up to 35% of cases. There will be biochemical recurrence over the years¹. Therefore, when this neoplasm recurs after the primary approach, treatment may vary according to its location and dissemination pattern. In cases of lymph node recurrence, adjunctive treatment with external radiotherapy is routinely indicated, associated or not with hormonal blockade.² However, in recent years, due to the advent of new imaging modalities with high sensitivity in cases of biochemical recurrence, the use of salvage lymphadenectomy has been proposed.² Thus, robotic salvage lymphadenectomy has emerged as an alternative to the treatment of patients with lymph node recurrence of prostate cancer. In this way, we seek to share, through a case report, the surgical technique of rescue lymphadenectomy with a lymph node marked by radiointervention.

There are no conflicts of interest in this report.

Keywords: Prostate Neoplasms. Lymphatic Metastasis. PET-PMSA. Robotic Surgical Procedures. Lymph node marking by radiointervention .

ABSTRACT

Prostate cancer is the second most common tumor in men worldwide, with lethality directly related to its staging. In general, radical prostatectomy represents the first line in the treatment of patients with prostate cancer, but even with improvements in diagnosis and advances in surgical techniques for the treatment of localized prostate cancer, it still occurs in up to 35% of cases. There will be biochemical recurrence over the years¹. Therefore, when this neoplasm recurs after the primary approach, treatment may vary according to its location and dissemination pattern. In cases of lymph node recurrence, adjunctive treatment with external radiotherapy is routinely indicated, associated or not with hormonal blockade.² However, in recent years, due to the advent of new imaging modalities with high sensitivity in cases of biochemical recurrence, the use of Rescue lymphadenectomy has been proposed.² Thus, robotic rescue lymphadenectomy has emerged as an alternative to the treatment of patients with lymph node recurrence of prostate cancer. In this way, we seek to share, through a case report, the surgical technique of rescue lymphadenectomy with a lymph node marked by radiointervention.

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INTRODUCTION

Prostate cancer is the second most common tumor in men worldwide, with lethality directly related to its staging. In general, radical prostatectomy represents the first line in the treatment of patients with prostate cancer, but even with improvements in diagnosis and advances in surgical techniques for the treatment of localized prostate cancer, it still occurs in up to 35% of cases. There will be biochemical recurrence over the years.¹ Therefore, when this neoplasm recurs after the primary approach, treatment may vary according to its location and dissemination pattern. In cases of lymph node recurrence, adjunctive treatment with external radiotherapy is routinely indicated, associated or not with hormonal blockade.² However, in recent years, due to the advent of new imaging modalities with high sensitivity in cases of biochemical recurrence, the use of Rescue lymphadenectomy has been proposed.² Thus, robotic rescue lymphadenectomy has emerged as an alternative to the treatment of patients with lymph node recurrence of prostate cancer. In this way, we seek to share, through a case report, the surgical technique of rescue lymphadenectomy with a lymph node marked by radiointervention.

CONTENT

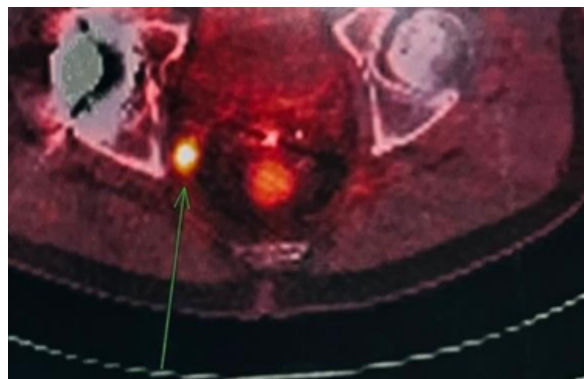
This is a case report study in which data were obtained by collecting the medical records of a patient who previously underwent traditional radical prostatectomy with pelvic lymphadenectomy, followed by robotic rescue lymphadenectomy with lymph node demarcation by radiointervention as an alternative to current treatments. Management in oligometastatic conditions.

The present case report aims to describe the performance of rescue lymphadenectomy performed robotically in a patient who had previously undergone conventional radical prostatectomy with pelvic lymphadenectomy for a prostate tumor, evolving with biochemical recurrence and elevated PSA after this treatment. The objective of this work is to present the report of a patient with oligometastatic prostate cancer who underwent robotic rescue lymphadenectomy with lymph node marking by radiointervention.

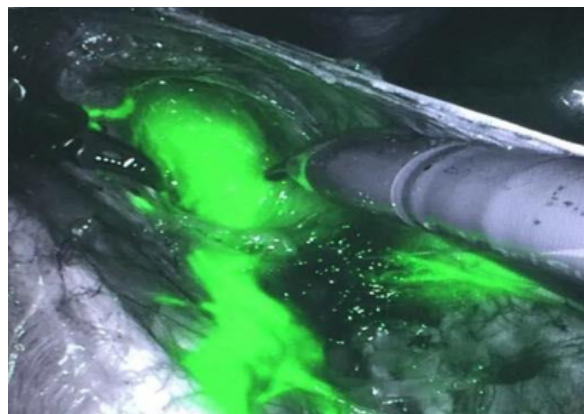
Clinical case, patient, 66 years old, male, with prostate adenocarcinoma, Gleason 4+3, TR: cT2a, PSAi: 8. Scintigraphy: Negative for metastasis. He underwent conventional prostatectomy in Jan/2003. Pathology: pT2c free circumferential surgical margins. After surgery, clinical follow-up was maintained, however there was a period of discontinuation due to the COVID-19 pandemic, with an increase in PSA upon return to follow-up in 2023. PSA: 0.043 - 1st

month after surgery; PSA: 1.7 - Jan/2023; He underwent PET-PSMA with overexpression of PSMA in the right internal iliac lymph node, with no other positive lymph nodes. Being exposed to therapeutic alternatives, faced with a young, active patient, he opted to undergo robot-assisted rescue lymphadenectomy, postponing hormonal blockade and its undesirable effects.

In the present case, we show a PET-PSMA reconstruction image with the presence of a single lymph node recurrence in the right internal iliac topography **figure 01**, with the decision being made to



demarcate the lymph node with transcutaneous injection guided by tomography using a solution composed of blue of methylene and indocyanine green approximately 1 hour before the surgical procedure **figure 02**. Bilateral extended retroperitoneal



lymphadenectomy was performed: robotic rescue lymphadenectomy approach. Procedure carried out in Feb/2023: positioning of access trocars similar to robotic prostatectomy. Lymphadenectomy on the left, first resecting the external iliac lymph nodes, proceeding to the obturator lymph nodes and finally

Management of oncological pain in the elderly by the nursing team of a private hospital in the state of São Paulo

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Background and objective: Elderly people represent 12% of the world's population, with this number expected to double by 2050. Cancer is the main public health problem in the world and is already among the four main causes of premature death in most countries. In the elderly population, the prevalence of pain is quite high. To guide the use of analgesics in the treatment of pain, the WHO created the "analgesic ladder", classifying opioids according to their potency. In clinical practice, what often prevails is the individualized knowledge of each nurse, which directs the type of medication prescribed. To evaluate pain symptoms and pain management, using the Pain Management Index, in hospitalized elderly patients. **Methodology:** Observational, quantitative and retrospective study. The study population will be made up of the number of hospitalized patients in 2021. To collect the information, access to data in medical records was made. To investigate pain management, the Pain Management Index was used, which analyzes analgesic potency in relation to pain intensity. **Results:** 687 patients were selected, with 1178 pain scores recorded during the studied period. 590 records had their pain reset in the first reassessment, which took an average of 6h39 minutes. Regarding the PMI calculation, most patients did not have their pain controlled. **Conclusion:** It is necessary to standardize the instrument used in the research, so that it has a theoretical-clinical basis, making the best analgesic choice for the patient, since the majority of them do not have adequate control.

Descritores: Nursing; Pain Management; Medical Oncology; Pain Perception; Health of the Elderly.

BACKGROUND

Elderly people represent 12% of the world's population, with this number expected to double by 2050. Greater longevity can be considered a success story for humanity.

The World Health Organization (WHO) defines healthy aging as the "process of developing and maintaining functional capacity that allows well-being in old age". Functional capacity, in turn, can be understood as the association of the individual's intrinsic capacity, relevant environmental characteristics and

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the interactions between the individual and these characteristics. A capacidade intrínseca é a articulação das capacidades físicas e mentais (incluindo psicossociais). As características ambientais são o contexto de vida, incluindo as relações sociais. O bem-estar é singular e permeado de aspirações subjetivas, incluindo sentimentos de realização, satisfação e felicidade.¹

According to the WHO, aging is classified into four stages:²

- Middle age: 45 to 59 years old;
- Elderly: 60 to 74 years old;
- Elderly: 75 to 90 years old;
- Extreme old age: 90 years onwards

According to Law No. 10,741, of October 1, 2003, which establishes and regulates the Statute of the Elderly, and by the National Policy on the Elderly, established by Federal Law 8,842, an elderly person is any citizen who is 60 years of age or older.^{3,4}

With the rapid demographic transition observed in the world and in Brazil, the increase in the age of the population has impacts on the health of the population, especially the elderly, with an increase in the burden of chronic non-communicable diseases, including cancer. For Brazil, the estimate for each year of the 2020-2022 triennium indicates that there will be 625 thousand new cases of cancer (450 thousand, excluding cases of non-melanoma skin cancer).⁵

Cancer is the main public health problem in the world and is already among the four main causes of premature death (before the age of 70) in most countries. Cancer incidence and mortality have been increasing worldwide, partly due to aging and population growth, as well as changes in the distribution and prevalence of cancer risk factors, especially those associated with socioeconomic development.⁵

It can be defined, generically, as a group of diseases that can affect any part of the body. Certain common morphological features differentiate all forms of cancer from other types of disease, including other noncommunicable diseases and diseases caused by toxic agents. However, there are links between cancer and these other diseases. In particular, many non-communicable diseases share causal factors such as tobacco use, unhealthy diet, obesity and lack of physical exercise. Prevention approaches are therefore often identical. Cancers share several biological characteristics with one defining characteristic being the proliferation of abnormal cells.

The cell renewal process is normally well controlled throughout life by basic biological mechanisms, however in cancer, the control mechanisms go wrong. Cells from the affected part of the body grow beyond their usual limits, invade adjacent tissues, and may spread to secondary organs or tissues as metastases.⁶

Oncological pathophysiology basically occurs in three stages, with:

Initiation Stage, genes are affected by carcinogens, which cause changes in some of their genes. At this stage, the cells are genetically altered, but it is not yet possible to detect a tumor clinically. They are "prepared", that is, "initiated" for the action of a second group of agents that will act in the next stage.

Promotion stage, genetically altered cells, that is, "initiated", suffer the effect of carcinogens classified as onco promoters. The initiated cell is transformed into a malignant cell, slowly and gradually. For this transformation to occur, long and continuous contact with the promoting carcinogen is necessary. Suspending contact with prosecuting agents often stops the process at this stage. Some dietary components and excessive and prolonged exposure to hormones are examples of factors that promote the transformation of initiated cells into malignant ones. Progression stage, characterized by the uncontrolled and irreversible multiplication of altered cells. At this stage, the cancer is already established, evolving until the first clinical manifestations of the disease appear. Factors that promote the initiation or progression of carcinogenesis are called onco-accelerating agents or carcinogens. Smoking is a complete carcinogen, as it has components that act in the three stages of carcinogenesis.⁷

In the elderly population, the prevalence of pain is quite high, ranging between 25 and 80%. Among elderly people living in the community, the prevalence varies between 25 and 52% and in residents of long-stay clinics, the prevalence is even higher, with 45 to 80% suffering from moderate or severe pain and being undertreated.⁸ Mixed pain is the most common in oncology clinical practice.

Pain is always a personal experience influenced to varying degrees by biological, psychological and social factors. Pain and nociception are different phenomena. Pain cannot be inferred solely from the activity of sensory neurons. Through their life experiences, individuals learn the concept of pain. Although pain generally plays an adaptive role, it can have adverse effects on social and psychological function and well-being. Verbal description is just one of several behaviors to express pain; inability to

communicate does not negate the possibility that a human or non-human animal experiences pain.¹⁰ To guide their use in the treatment of pain, the WHO created the “analgesic ladder”, classifying opioids as weak or strong according to their potency.

- MILD TO MODERATE PAIN = Non-Opioid + Adjuvant
- MODERATE PAIN = No Opioid + Weak Opioid + Adjuvant
- INTENSE PAIN = Strong opioid + Adjuvant

Adjuvants are drugs intended for the treatment of comorbidities (antidepressants or muscle relaxants), being optional in the analgesic ladder.¹¹

Also according to the International Association for the Study of Pain (IASP), pain is an unpleasant sensation or emotional experience, associated with real or potential tissue damage, and can be classified as acute (lasting less than 30 days) or chronic (lasting longer to 30 days), and is classified according to its pathophysiological mechanism into three types: predominantly nociceptive pain; predominantly neuropathic pain and mixed pain.

Predominantly nociceptive pain, or simply nociceptive pain, occurs due to physiological activation of pain receptors and is related to injury to bone, muscle or ligament tissues and generally responds well to symptomatic treatment with analgesics or non-steroidal anti-inflammatory drugs (NSAIDs). Já a dor de predomnino neuropático é definida como dor iniciada por lesão ou disfunção do sistema nervoso, sendo mais bem compreendida como resultado da ativação anormal da via da dor ou nociceptiva, responde pobremente aos analgésicos usuais (paracetamol, dipirona, AINES, opióides fracos).⁹

The pain is related to cancer (“oncological”), cases in which there is not only compression of nerves and roots that generates neuropathic pain, but also of bones, facets, joints and ligaments that are part of musculoskeletal structures, generating nociceptive pain.⁹

In this sense, more than a definition in biomedical terms, chronic pain is understood as a persistent unpleasant sensory and emotional experience associated with real or potential tissue damage, or described in terms of such damage. Pain is, therefore, what the individual says they feel and suffer.¹²

As for the classification of analgesics, we can classify them into three large groups:

Non-opioid analgesics: They are a group of different drugs that reduce or interrupt nerve transmission pathways, reducing nociception, the main ones being acetaminophen and dipyrone.¹³

Opioids: They are a group of compounds derived from opium, a substance extracted from poppy with analgesic properties, which act by binding to opioid receptors distributed in the nervous system and peripheral tissues, and can act as agonists or antagonists. There are several opioid medications and in different formats. Fentanyl, hydromorphone, methadone, morphine, and oxycodone are opioid agonists, while buprenorphine is a partial agonist/antagonist.^{13,14}

NSAIDs: Along with analgesics, they are drugs indicated for the treatment of acute and mild chronic pain, corresponding to the first step of the WHO analgesic ladder. NSAIDs have antipyretic, analgesic and anti-inflammatory actions by inhibiting the synthesis of prostaglandins and thromboxanes. Despite the establishment of NSAIDs as drugs of choice in the treatment of mild to moderate chronic pain, they are potentially inappropriate for the elderly and their indiscriminate and long-term use is related to various morbidities and delirium. It is recommended that they be used only when essential and with monitoring.¹⁵

In clinical practice, what often prevails is the individualized knowledge of each nurse, which directs the type of medication prescribed that can alleviate the patient's pain, making it necessary to implement an instrument that validates the use of the medication according to its potency for correct intensity of pain level.

OBJECTIVE

General

- Evaluate the symptom of pain and its management, by the nursing team, using the Pain Management Index, in elderly patients hospitalized in an oncology inpatient unit of a private hospital.

Specifics

- Describe the participant's demographic profile;
- Identify data about the onset of the pain symptom, location, cause, duration, intensity and periodicity;
- Measure the patient's pain using the Numerical Verbal Scale in two moments;
- Evaluate the applicability of the Pain Management Index in elderly people in an oncology inpatient unit.

METHODOLOGY

Observational, quantitative and retrospective study that will be carried out with patients hospitalized in the oncology inpatient unit of a private hospital in the city of São Paulo in the State of São Paulo.

There are four floors with apartment-type beds, two floors with fifteen beds, one floor with fourteen beds

and one floor with thirteen beds, the latter being five positive pressure rooms for bone marrow transplantation.

The study population will be made up of the number of patients hospitalized in the inpatient unit in 2021 (January to December). For the sample, it will be necessary to carry out a sample calculation. To do this, contact the hospital's statistics department in order to obtain the number of patients hospitalized in that year.

The inclusion criteria to take part in the study are: being aged 60 years or over, of both sexes, hospitalized in the inpatient unit undergoing oncological treatment (chemotherapy or radiotherapy) and/or diagnosed metastases and complaining of pain.

To collect information, access will be made to data in medical records

- Demographic profile of the electronic medical record: with the purpose of obtaining information such as sex (male and female), age (in years), marital status (with or without a partner), skin color (white, black, yellow, brown or yellow), education (in years), profession and religion (Catholic, Adventist, evangelical, other).
- Clinical profile from the electronic medical record: Medical diagnosis, duration of illness, length of hospital stay; type of hospitalization (clinical, surgical and/or palliative clinic), pre-existing comorbidities or continuous drug treatment.
- Pain profile: the medication, medication class and form of presentation of the medication that will be administered to the patient for pain, dose, time and route of administration will be taken into account (PO - Oral; IM - Intramuscular; IV - Intravenous; IVD - Direct Intravenous or in HDC - Hypodermoclysis).
- Numerical Verbal Scale (NVS): unidimensional pain assessment instrument that measures pain intensity in a range from 0 to 10, in which zero corresponds to the absence of pain and ten corresponds to the worst pain imaginable. Used for adult patients and children from six years of age, with preserved cognitive capacity and who demonstrate understanding of the scale. Patients with verbal communication deficits, but with preserved cognitive skills, can use the same scale, writing, signaling or confirming the pain score indicated by the applicator.
- PAINAD Scale (Pain Assessment in Advanced Dementia): Based on the assessment of physiological and behavioral status (breathing, vocalization, facial expression, body language and consolability), with

scores ranging from 0 to 2 for each of the five areas assessed. Your total score ranges from 0 to 10.

Pain Management Index (PMI) created by Cleeland et al., and analyzes analgesic potency in relation to the intensity of pain reported by the individual. Analgesics are classified according to their potency (PA) and intensity (ID):

Power

- 0 - Absence of analgesic;
- 1 - Anti-inflammatory or non-opioid;
- 2 - Weak opioid;
- 3 - Strong opioid.

Intensity

- 0 - No pain;
- 1 - Mild pain (1 - 4);
- 2 - Moderate pain (5 - 7);
- 3 - Severe pain (8 - 10)

The PMI is obtained by subtracting the pain intensity (ID) from the analgesic potency (PA), that is, $PMI = PA - ID$. The PMI ranges from -3 to +3 and negative scores indicate analgesic inadequacy and positive scores or zero indicate its adequacy.

The information will be stored in the Microsoft Excel® program in which double typing will be carried out to check for typing errors that will be corrected. Subsequently, the information will be imported into the Statistical Program for Social Sciences (SPSS) version 25.0.

Descriptive analyzes will be carried out and for quantitative variables, the analysis will be carried out by observing the minimum and maximum values, and calculating means, standard deviation and median.

As all research involving human beings can pose a risk to them, which in the case of this research is the misinterpretation of data, the project was presented to the Research Committee of Hospital Alemão Oswaldo Cruz and was approved under C.A.A.E 59113622.3.0000.0070.

RESULTS

687 patients were selected, 293 females and 394 males, with an average of 76.59 years of age (min 65 and max 98 years), with an average of 3.31 years of disease (min 0.5 years and max 39 years) Regarding pathology, 402 were solid tumors, 255 were hematological tumors and 30 hospitalizations were related to neoplastic conditions.

There was an average length of stay of 9 days (min. 1 day and max. 151 days), with 1178 pain scores recorded during the studied period, with an average

reassessment time of 02h23 (minimum 00h01 and maximum 19h28). 590 records had their pain reset in the first reassessment, which took an average of 6h39 minutes. The scales used to measure pain were 64.34% (n=758) Verbal numerical; 28.86% (n=340) Behavioral; 5.77% (n=68) PAINAD; 0.84% (n=10) Faces and 0.16% (n=2) NIPS.

Regarding the PMI calculation, most patients (54.3%; 640 pain score records) do not have their pain controlled, with PMI -1. The sum of all indexes equal to or greater than 0 reaches 52.2% of all records. There was also an average of 2h23 of reassessment time for the imputed scores.

Regarding the use of medications, there were 154 records of intense pain, requiring strong opioids, and 157 doses were administered, but 56 cases of this class were not medicated.

Of the 149 records of moderate pain, requiring weak opioids, only 49 doses were administered, but 131 cases of this class were not medicated.

Of the 741 records of mild pain requiring anti-inflammatories or non-opioid analgesics, 264 doses were administered, but 364 cases of this class were not medicated.

The same patient may have received two concomitant drugs or been on a continuous opioid infusion and a medication rescue was performed.

CONCLUSION

It can be seen that, for scores up to 8, most records present a reassessment equal to 0, while for scores 9 or 10 the tendency is for this score to first decrease or remain the same, so that in subsequent assessments it is reduced, we can infer that for more intense pain there is difficult management on the part of the team, raising the need for improvement of pain control protocols by the non-prescribing team.

There was no good distribution of the medication needed to control pain, which indicates poor management by the multidisciplinary team, making it necessary to better understand the patient's pain and have medications available that can alleviate the pain.

It is necessary to standardize the instrument used in the research, so that there is a clinical theoretical basis, and to be able to make the best analgesic choice for the patient, since the majority of them do not have adequate control.

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Esophageal cancer is common among men in Brazil

Câncer de esôfago no Brasil: Uma análise do tabagismo e do etilismo como fatores de risco

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RESUMO

O câncer de esôfago é comum entre homens no Brasil, em especial o carcinoma de células escamosas. O etilismo e o tabagismo são fatores de risco associados. Outros fatores incluem síndrome de Barrett, nitrosaminas, acalasia, síndrome de Plummer-Vinson e *Helicobacter pylori*. O diagnóstico tardio e o tipo histológico contribuem para o aumento da agressividade e reduzem a sobrevivência dos pacientes. O presente trabalho teve como objetivo estudar a incidência e os fatores de risco do câncer de esôfago no Brasil para estratégias preventivas e terapêuticas. Trata-se de um estudo transversal com dados do DATASUS e do IBGE de 2019. Foram analisadas internações por câncer de esôfago de 2008 a 2021 em estados brasileiros, e coletados dados sobre o consumo de álcool e tabaco por regiões. As análises estatísticas incluíram taxas estimadas, regressão linear e diagramas de dispersão. Foram consideradas 219.579 internações por câncer esofágico. Foi observado um aumento na incidência após 40 anos, com pico entre 50 e 69 anos. Detectamos um maior número de casos nos indivíduos brancos, seguidos pelos pardos, pretos, amarelos e indígenas. Ademais, foi identificado mais internações de pessoas do sexo masculino. O Sudeste obteve mais internações, seguido pelo Sul, Nordeste, Centro-Oeste e Norte. O Rio Grande do Sul registrou a maior taxa, já o Pará registrou a menor. Conclui-se que no presente estudo ficou evidente como fatores de risco o tabaco e o álcool, sendo, portanto, essencial e urgente um maior controle desses hábitos para a prevenção dessa doença. É fundamental a compreensão de fatores demográficos e regionais para auxiliar na realização de programas de detecção precoce e consequente adoção de tratamentos eficazes. Além disso, políticas de saúde regionais pautadas na mudança de hábitos são imprescindíveis para reduzir a incidência e melhorar os desfechos do câncer de esôfago.

Palavras-chave: Câncer de Esôfago; Fatores de Risco; Alcoolismo; Hábito Tabágico.

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ABSTRACT

Esophageal cancer is common among men in Brazil, especially the squamous cell carcinoma kind. Alcoholism and smoking are associated risk factors. Other factors include Barrett's syndrome, nitrosamines, achalasia, Plummer-Vinson syndrome, and Helicobacter pylori. Late diagnosis and histological type contribute to increased aggressiveness and reduce patient survival. The present work aimed to study the incidence and risk factors of esophageal cancer in Brazil for preventive and therapeutic strategies. This is a cross-sectional study with data from DATASUS and IBGE from 2019. Hospitalizations for esophageal cancer were analyzed from 2008 to 2021 in Brazilian states, and data on alcohol and tobacco consumption by region was collected. Statistical analyses included estimated rates, linear regression, and scatter plots. 219,579 hospitalizations for esophageal cancer were considered. An increase in incidence was observed after 40 years, with a peak between 50 and 69 years. We detected a greater number of cases in white individuals, followed by brown, black, yellow, and indigenous people. Furthermore, more hospitalizations of men were identified. The Southeast region had the most hospitalizations, followed by the South, Northeast, Central-West, and North regions. Rio Grande do Sul recorded the highest rate, while Pará recorded the lowest. It is concluded that in the present study, tobacco and alcohol were evident as risk factors, therefore, greater control of these habits is essential and urgent to prevent this disease. Understanding demographic and regional factors is essential to help carry out early detection programs and the consequent adoption of effective treatments. Furthermore, regional health policies based on changing habits are essential to reduce the incidence and improve outcomes of esophageal cancer.

Keywords: Esophageal Cancer; Risk factors; Alcoholism; Smoking Habit.

INTRODUÇÃO

O câncer de esôfago é a 6ª neoplasia mais incidente em homens no Brasil, excluindo-se casos de câncer de pele não melanoma. Seus dois principais tipos histológicos são: o carcinoma de células escamosas e o adenocarcinoma, sendo o primeiro subtipo o mais comum^{1,2}.

O consumo excessivo de bebidas alcoólicas e o tabagismo ainda despontam como os principais fatores de risco para essa patologia. Mesmo em indivíduos assintomáticos ou com uma mucosa normal, estudos evidenciaram que a expressão do p53 foi afetada em resposta à lesão do tecido por

exposição à fumaça do cigarro ou álcool, o que leva à cancerização do epitélio e maiores recorrências³.

Demais fatores de risco são: síndrome de Barrett; alta ingestão oral de compostos de nitrosamina encontrados em pimentas, alimentos condimentados e chá quente; acalasia; síndrome de Plummer-Vinson e anemia perniciosa mediada pela cititoxina A (CagA) produzida pelo H. Pylori^{4,2}.

Tendo em conta que a taxa de sobrevida para o carcinoma de células escamosas é de aproximadamente 18% em 5 anos, devido ao diagnóstico tardio e agressividade da doença, há uma grande necessidade de melhor conhecer os fatores de risco implicados a fim de que se consiga instituir melhores estratégias preventivas e terapêuticas¹.

MÉTODOS

Trata-se de um estudo epidemiológico do tipo transversal, cujos dados foram obtidos a partir da base de dados do Departamento de Informática do Sistema Único de Saúde (DATASUS) e do Programa Nacional de Saúde (PNS) do Instituto Brasileiro de Geografia e Estatística (IBGE) para o ano de 2019. Os dados em análise são relativos aos casos de internação por neoplasia maligna de esôfago no período de janeiro de 2008 até abril de 2021 nos 26 estados brasileiros e Distrito Federal e o perfil estatístico de consumo de bebidas alcoólicas e uso de substâncias derivadas do tabaco nas unidades federativas no ano de 2019. Os dados foram tabulados na ferramenta Microsoft Excel 2016, onde foram calculadas as taxas estimadas para cada cem mil habitantes, realizado o teste de regressão linear (coeficiente de correlação de Pearson e valor de p) e elaborados os diagramas de dispersão.

RESULTADOS

No período estudado foram registradas 219579 internações por neoplasia de esôfago no Brasil. A partir da quadragésima década de vida o número de internações aumenta atingindo o seu pico na faixa etária entre 50 e 69 anos, que concentra mais da metade das internações (n=133961). Em relação a variável cor/raça, os indivíduos brancos lideram com a maior quantidade de casos (n=90420), seguida pelos pardos (n=74237), pretos (n=15465), amarelos (n=1952) e a indígenas (n=113), esse último com o menor número de internações. Vale ressaltar que um número significativo de internações não possui a informação da raça (n=37378). Dentre as internações hospitalares os homens (n=168187) representam a maioria sendo 3,2 vezes maior que o número de internações das mulheres (n=51392). Observando as regiões do país, a região sudeste (n=108534) possui a maioria dos casos de internações hospitalares por

neoplasia, seguida da região sul (n=58338), nordeste (n=35307), centro-oeste (n=12476) e por fim, a que detém a menor concentração de internações é a região norte (n=3588). Em relação a taxa de internação hospitalar por neoplasia de cada estado brasileiro merecem destaque o Rio Grande do Sul, por apresentar a maior taxa de internação hospitalar (n=233,985) e o Pará, estado com a menor taxa de internação hospitalar (n=15,373).

Após a realização da correlação entre as taxas de internações por neoplasias de esôfago e tabagismo, observou-se uma relação positiva ($r=0,45$ e $p=0,018$) como demonstrado no **Gráfico 1**. Ao término da análise das regiões do Brasil, a região nordeste (n=99,7) possui a maior taxa de casos por 100.000 habitantes, logo após, a região norte (n=81,5); a região centro-oeste (n=54,8); a região sudeste (n=50,1) e a região sul (n=43,6). Em relação aos estados destaca-se o Mato Grosso do Sul (n=16,3) com a maior taxa de internações; Sergipe (n=9,4) com a menor taxa no número de internações e faz parte da região que detém a maior taxa de internações.

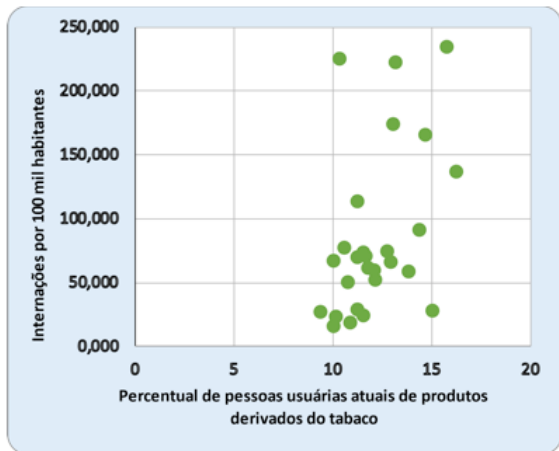


Gráfico 1: Correlação entre tabagismo e internações por neoplasia de esôfago no Brasil, de janeiro de 2008 a abril de 2021.

(Fonte: Autores, 2023)

A taxa da correlação entre neoplasias de esôfago e etilismo, revelou uma relação positiva significativa ($r=0,65$ e $p=0,00020$) como demonstrado no **Gráfico 2**. Observando as regiões do país, a região nordeste (n=182,3) se destaca novamente com a maior taxa de internações a cada 100.000 habitantes, seguida da região norte (n=125,7); a região sudeste (n=114,3); a região centro-oeste (n=111,5) e a região sul (n=89,9) com a menor taxa no número de internações. Analisando os estados, o Acre

(n=12,8) merece destaque pela menor taxa de internações; o Mato Grosso do Sul (n=31,3) mais uma vez liderando com a maior taxa nos números de internações por etilismo e tabagismo.

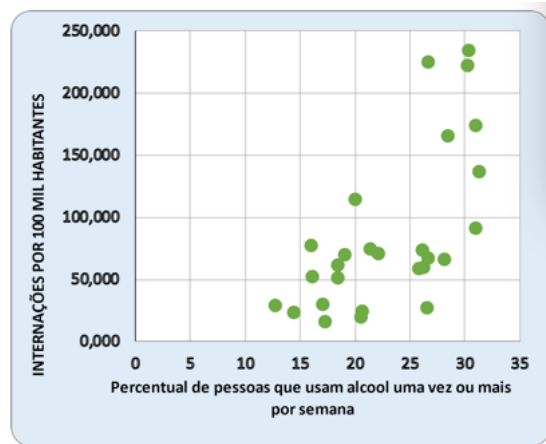


Gráfico 2: Correlação entre consumo de álcool e internações por neoplasia de esôfago no Brasil, de janeiro de 2008 a abril de 2021.

(Fonte: Autores, 2023)

DISCUSSÃO

O presente artigo apoia a hipótese de que o alto consumo de álcool e tabaco são fatores de risco para a carcinogênese esofágica, somando-se a outros fatores como idade, genética, sexo masculino e obesidade⁵. Diversos estudos evidenciam o aumento na incidência de neoplasias digestivas, sobretudo em pâncreas, fígado e esôfago^{6,7}.

A taxa do consumo alcoólico e de tabaco por indivíduos com histórico de carcinogênese esofágica é alta. Dos pacientes diagnosticados com câncer do trato digestivo superior, 26,9% ingerem bebidas alcoólicas por mais de quatro vezes por semana. No que se refere ao tabagismo, 18,6% informa continuidade no uso após 2 anos de diagnóstico. No entanto, esses dados devem ser interpretados com cautela, pois podem ser subestimados pelos médicos^{8,9}. Assim, uma abordagem eficiente da adição pela equipe multidisciplinar, oferecendo apoio psicológico e psiquiátrico pode ser uma ferramenta útil na cessação do etilismo e do tabagismo¹⁰.

A incidência das neoplasias esofagianas é demograficamente heterogênea, sendo maior nos países asiáticos e menor na América do Norte e na Europa. No Brasil, essa diversidade também é observada, sendo a incidência de 4 casos a cada 100 mil habitantes na região Norte e 15 casos para a mesma população na região Sul⁵. As taxas de

incidência no Rio Grande do Sul (RS) e no Pará (PA) destacam-se por serem a maior e a menor taxas à nível estadual. O RS tem uma das maiores taxas de incidência de neoplasias esofágicas à nível mundial¹¹. Entretanto, os presentes dados revelam um panorama diferente à nível regional, sendo as regiões nordeste e sul com a maior e menor taxa de internação, respectivamente.

Outros fatores de risco apontados por estudos são idade e sexo, com predomínio em homens e indivíduos nas faixas etárias entre a quinta e sexta década de vida, com predominância entre 60 e 69 anos, atribuído, principalmente, pelo dano acumulativo causado por Doença do Refluxo Gastroesofágico (DRGE), etilismo e tabagismo⁶. Os dados do presente artigo estão de acordo com a literatura, pois observou-se maior número de internações em homens, chegando à proporção de 3:1 em relação as mulheres; o predomínio significativo entre a quinta e sexta década de vida, bem como o pico de incidência entre 60 e 69 anos também foi confirmado.

Além disso, os dados relativos à incidência por cor e raça estão conforme a literatura. Estudos prévios já demonstraram que indivíduos brancos são os mais acometidos no Brasil, seguidos por pardos e pretos, o que foi confirmado no presente estudo¹².

CONCLUSÃO

Diante disso, o presente artigo visa reafirmar a relação entre as neoplasias de esôfago e consumo de bebidas alcoólicas e produtos derivados do tabaco, já muito bem abordada pela literatura. Assim, ressalta-se a necessidade do apoio multidisciplinar às pessoas adictas destas substâncias, não somente como forma de prevenção, mas também de melhora na qualidade de vida. Por fim, este estudo, ao concordar com a literatura, ensina a importância do combate ao etilismo e tabagismo dada a classificação enquanto fatores de risco para neoplasias, tendo a de esôfago entre elas.

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How could we prevent cancer patients desire to die? The maintenance of the meaning of life through protective factors

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ABSTRACT

Objective: To assess cancer patients' perception of the meaning of life associated with the desire to live.

Method: A qualitative cross-sectional study of discourse analysis comprising cancer patients with a history of treatment, selected through the Snowball technique, of both genders, aged 18 years or older, and aware of their disease. Participants completed screening questionnaires (PHQ-9), sociodemographic assessments, the Death Anticipation Desire Scale (DDRS), the Meaning in Life Questionnaire (MLQ), and a semi-structured questionnaire. Bardin's content analysis was used for qualitative data, while descriptive statistical data, including mean and standard deviation, were used for exploratory analysis, grouped into categories of meaning.

Results: The sample comprised 10 patients, male (n=4) and female (n=6). All participants had utilized at least one hospital service. Five categories of meaning emerged from discourse analysis: assertive communication about treatment, family support, will to live, faith and spiritual belief, and the impact of the diagnosis related to treatment.

Conclusions: The significance of life for each cancer patient lies in continuing their lives, regardless of the diagnosis. The importance of being in harmony, balance, being welcomed, humanized, having the support of loved ones, possessing autonomy, gives each participant's life meaning and, consequently, the desire to live. Therefore, it is concluded that for these patients, the desire to live is related to the meaning of life.

Keywords: Desire to live; Cancer; Life course perspective.

INTRODUCTION

Cancer is a significant public health issue, representing the second leading cause of morbidity and mortality among noncommunicable chronic diseases, often being associated with death even before diagnosis¹. It can be perceived as a stigma, instilling fear throughout society, including the individuals affected by it, potentially interfering with the sense of life of every human being diagnosed with cancer². The sense of life is a term that describes a reason and purpose for being alive, functioning as a driving force that needs constant fueling, promoting life redefinition. The loss of the sense of life, particularly associated with death, leads the individual to experience a type of mourning due to the changes caused by the onset of the disease, not only physical but also emotional, causing an even greater impact. Therefore, protective factors become

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essential, serving as buffers against the disease, considered indispensable for the recovery process, bearing in mind that the quality of life of each individual is related to significantly important aspects for them^{2,3}.

It is crucial for each patient to find resources associated with health behaviors, psychological well-being, and mental health, one of which is self-esteem, going beyond what the mirror may reflect, relating to the inner self of each individual. The way the patient saw life before the illness says a lot about how they come to perceive it with the diagnosis. Coping and social support jointly assist in preserving self-esteem, being a necessary clinical issue for oncological care, also involving resilience⁴. Originally, resilience was used in the field of physics to refer to the ability of a material to return to a state of equilibrium after being displaced, being adapted to the field of psychology, relating to health and behavior as a lifestyle, perceptions of the disease, promoting treatment adherence⁵.

From the same point of view, communication during the illness is extremely important, establishing a better relationship between the healthcare team, the patient, and the family, providing confidence and effective assistance, minimizing fears and anxieties caused by the disease. However, it remains a challenging and flawed discussion for healthcare professionals, partly due to the deficiency in training the necessary skills in academic formation^{6,7}.

Therefore, considering the vulnerability of cancer patients, the suffering experienced by family members and caregivers, and even the anguish experienced by the healthcare team, guidance becomes essential, leading to a humanized approach through assertive communication, through welcoming, active listening, and protective factors, respecting the wishes of each patient, promoting dignity and quality of life.

METHODS

Study Design

This is a prospective, cross-sectional, and qualitative study, analyzing the discourse of patients with various types of cancer.

Sample Selection

The researchers selected participants (N=10) with various types of cancer. They included patients aged 18 years or older who were undergoing cancer treatment (past or recent) and were aware of their diagnosis. The study employed the Snowball methodologi-

cal technique⁸. to select patients. In this screening method, reference chains were utilized. Initial participants referred new participants, and so forth, until reaching "saturation point." As each interview took place, the researchers conducted a pre-analysis to identify new findings and repetitions from previous interviews, determining the optimal time to close the sample. This method facilitated the establishment of a network of contacts for the research, resulting in 10 interviews.

Procedures

Initially, the research project was developed and submitted to the Research Ethics Committee, in 2022, approved under opinion 5,270,703, allowing the start of the research. Patients were approached by phone and invited to participate in the study. For those who showed interest and met the eligibility criteria, the objectives were explained, followed by the reading of the Informed Consent Form. After consenting to participate, an interview was scheduled, and on the agreed date, the sociodemographic questionnaire, Desire for Death Rating Scale (DDRS)⁹ and Meaning of Life Questionnaire (MLQ) 10 were individually administered online, followed by a semi-structured questionnaire. Patients had the option to use image and voice or only voice. The interviews were conducted through a secure and encrypted platform, ensuring all confidentiality conditions were met. The responses were recorded and, after being transcribed in full, were deleted.

Data Analysis

For data analysis, Bardin's content analysis technique was used, consisting of three necessary steps called: pre-analysis, exploration of the material, and treatment of the results¹¹. For exploratory data analysis, descriptive statistics were used. The discourse analysis begins after reading the transcripts to locate the most significant and convergent links among patients. These parts are delimited by themes or perspectives. Discourses presenting similarities were selected, and from these groupings, categories were named.

RESULTS

The sample consisted of 10 patients, of whom 4 were male and 6 were female, adherents to the Catholic religion (n=8), with incomplete primary education (n=5), incomplete higher education (n=2), complete higher education (n=1), and postgraduate education (n=2). Regarding clinical characteristics, five patients

were diagnosed with breast cancer, one with multiple myeloma, one with Hodgkin's lymphoma, one with upper digestive tract cancer, one with head cancer, and one with skin cancer. Among the participants, four were still undergoing chemotherapy treatment, while six, who had completed their treatments, were under medical follow-up. The majority of participants received their diagnosis between 1 to 5 years ago, two were diagnosed between 6 to 10 years ago, and another two had been diagnosed for more than 10 years.

The PHQ-9 instrument was utilized to assess the depression index through questions related to the frequency of occurrence of major symptoms^{12,13}. The purpose of using this instrument was to screen research participants, as individuals exhibiting depressive symptoms would not proceed to subsequent stages. This precaution was taken because evaluating the desire for death in individuals with depression could introduce bias. The Desire for Death Rating Scale (DDRS)⁹ aims to assess the prevalence of death anticipation desire, allowing for the observation of whether participants possess a desire to hasten their death. This highlights that the total study sample did not exhibit a "death wish" (Table 1).

Table 1. Results from the application of the *Desire For Death Rating Scale* instrument

<i>DDRS</i>	
Domains	N
Without a desire to die soon	10
Don't want to answer	-
Slight desire	-
Mild desire	-
Moderate desire	-

On the other hand, the Meaning in Life Questionnaire (MLQ)¹⁰ aims to evaluate positive presence related to well-being, intrinsic religiosity, extraversion, and agreeableness, as well as the negative presence of anxiety and depression. It demonstrates the significance of each participant's beliefs and values in sustaining a sense of life purpose (Table 2).

Table 2. Results of the application of the *Meaning Of Life Questionnaire* instrument

<i>MLQ</i>	
Domains	N
Agree	4
Strongly agree	5
Disagree	1
Strongly disagree	-

Following the interviews, Bardin's analysis, and the process of coding and categorization, five categories of meaning were identified, considered as protective factors:¹ Assertive Communication, where effective communication, whether verbal or non-verbal, depends on the connection between the team, the patient, and the family, serving as a therapeutic measure, aiding the patient in articulating anxieties and feeling included in the entire process;² Family Support, with the family being the primary source of support for the patient, providing a sense of security and protection;³ Will to Live, with an observed association between the diagnosis and death, yet also noting the will to live that each participant possesses;⁴ Faith and Spiritual Belief, where spirituality is universal, transcending any single religion, involving the search for meaning in life in the face of serious illness, providing reassurance; and⁵ the Impact of the Diagnosis on Treatment, emphasizing the significance of how information about the diagnosis and potential treatments is conveyed to the patient, as it influences the resulting impact (Table 3).

Table 3. Categories of meaning extracted from the participants' speeches in the qualitative phase of the study followed by an illustrative excerpt.

Category	Illustrative Excerpt
C1. Assertive Communication	"[...] Lots of fantasy, but that quickly dissipated, talking to the doctors..."
C2. Family Support	"I always relied on the support of my family, that was very decisive."
C3. Will to Live	"I faced it in the best way, I'll go through this phase and I'll get the result."
C4. Faith and Spiritual Belief	"[...] we came to learn and if we have a posture of faith, we learn twice as much."
C5. Impact of the Diagnosis on Treatment	"[...] the initial impact is tough, but there were few moments when I felt the desire to die."

DISCUSSION

During the research, it was observed that breast cancer is the most prevalent cancer diagnosis among women. It remains the leading type of cancer in the female population and is the primary cause of cancer-related deaths among women.¹⁴ Throughout the interviews, these patients reported discomfort during the biopsy procedure. Various emotions and feelings were observed, including hope and a desire to make the most of their days, which positively influenced their well-being.

Initially, the PHQ-9 was included to assess symptoms of depression. Although the current research does not aim to evaluate depressive symptoms in

oncology patients specifically, it was necessary to include this questionnaire to ensure participants' health and well-being, allowing them to participate safely, comfortably, and humanely. According to the literature, the impact of depression on the quality of life has exhausting effects on cancer patients, threatening their sense of life. In other words, if a patient has depression, it can lead to a loss of this sense of life and, consequently, a diminished desire to live.¹⁵

Subsequently, the DDRS questionnaire was introduced. The word "death" prompts numerous questions, as little is known about it, and the only certainty is that it will come for everyone eventually. Over the years, the meaning of death has changed. What was once considered a public event, with funeral rituals held in homes, has become something discreet and often avoided, now occurring in hospitals in solitude. The association of illness with the proximity of death generates anxiety and uncertainty. However, it is through these associations that a patient may form a decisive perception of what is truly important in their life, a unique process that often leads to a reduction in fear.¹⁶

For the next stage, the MLQ was used. The sense of meaning in life is one of the most affected psychological domains in patients with life-threatening illnesses. After diagnosis, patients experience many losses and adaptations, such as having to withdraw from social life and work and becoming dependent on others. The construction of meaning may help individuals successfully cope with their conditions. Through this process, it is possible to observe the sense of meaning each patient has in the face of their illness, leading to the reemergence of the feeling that their lives matter.

Based on the patients' feedback, five key categories were identified that support the entire process from diagnosis to treatment: assertive communication¹⁷, a basic human need that depends on the connection between the medical team, the patient, and the family. This connection acts as a therapeutic measure, helping individuals express their fears, concerns, and questions about their illness and treatment, making them feel included in the entire process; family support¹, when a diagnosis is received, the patient's family is also affected. Family support can become a key component in the patient's journey, providing security, tranquility, confidence, and protection. It allows the patient to feel safe and to share this sense of security with their loved ones; will to live¹⁸, from the narratives of each research participant, a strong will to live was evident. Patients expressed not just a fight against the disease, but an acceptance of its existence. This acceptance, similar to that of other diseases that can lead to death,

made each patient feel even more alive; faith and spiritual belief¹⁹, other studies have highlighted the relationship between spirituality, quality of life, and health. These aspects are crucial in the healing and rehabilitation process, underscoring the importance of faith and spiritual beliefs; impact of diagnosis on treatment²⁰, the discovery of a cancer diagnosis significantly impacts the lives of individuals and their families, causing conflicts and uncertainties and threatening their sense of life. However, by addressing the previous four categories, it is possible to support and assist patients throughout this challenging process.

Thus, offering treatment that depersonalizes the patient and does not allow for their participation in decision-making deprives them of their autonomy. This autonomy is essential for patients to feel included throughout their treatment, thereby aiding in their adherence to the treatment plan.

This study presents limitations. Firstly, concerning the sample, it consists of only ten participants, which could be considered small. However, as it is a qualitative research, researchers deemed the discourse analysis to be sufficient and satisfactory. Regarding the format, the process was conducted online, which limited the possibility of finding participants. Some individuals declined to participate due to discomfort discussing the subject via video calls. Additionally, certain aspects of non-verbal language, expressions, and other details are inevitably reduced in analysis due to the virtual environment. Furthermore, the inclusion of a screening questionnaire restricted participation to individuals with depression, potentially biasing the sample towards those without mental health issues. Therefore, the continuation of this study is fundamental, utilizing evaluations with different samples, a larger audience, and face-to-face interviews.

CONCLUSION

It is concluded that the importance of the will to live in relation to the sense of life becomes a necessary moment for improving the quality of life of cancer patients. Although the diagnosis brings forth a multitude of emotions, it is possible to observe how patients desire and need to be treated in a welcoming and humanized manner. Therefore, the role of the psychologist is to become a facilitator in promoting protective factors, intervening to reduce signs and symptoms of stress and suffering. Additionally, psychologists aim to contribute to the scientific field by encouraging healthcare professionals to reflect on the topic and to provide these patients with inclusion in their health-disease process. This is achieved

through appropriate speech, qualified listening, and creating space for patients to be seen beyond their diagnosis.

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RELATO DE CASO | CASE REPORT

Brain metastasis from lung carcinoma

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SUMMARY

Lung cancer is one of the leading causes of cancer-related death worldwide. Brain metastasis is a common person in patients with advanced lung cancer, which can affect the quality of life and survival of patients. This condition may be asymptomatic at first, but eventually it can cause symptoms such as headache, vision changes, balance and cognition problems. Treatment requires an individualized approach with multidisciplinary strategies with the main objective of controlling both the primary tumor in the lung and the air metastases, to provide the best possible clinical outcome for patients. Therapeutic options may include a combination of modalities such as surgery, radiotherapy, chemotherapy, molecular therapy, and immunotherapy. Molecular therapy and immunotherapy have flourished as promising options for patients with lung cancer with brain metastases, being thought of in conjunction with other treatment modalities to maximize clinical outcomes. The following report addresses a 66-year-old patient who presented with progressive hemiparesis in the left side of the body. Examinations revealed an expanding right frontal lesion with edema. Surgery was performed to remove the intracranial tumor, with satisfactory evolution. Histopathological examination indicated metastatic adenocarcinoma of pulmonary origin. After initiation of chemotherapy, drug-induced hepatitis developed due to phenytoin intoxication, but recovered after drug withdrawal. He is currently undergoing ongoing treatment for lung cancer and is being followed up on an outpatient basis.

KEY WORDS: Lung Neoplasm, Lung Cancer, Lung Cancer, Brain Metastasis

GOAL

Report a case of lung cancer with brain metastasis from clinical findings to therapeutic approach.

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METHOD

The information contained in this work was obtained through a review of the medical records, interviews with the patient, photographic records of the diagnostic methods to which the patient was subjected and a review of the literature.

INTRODUCTION

Lung cancer is described as one of the leading causes of cancer-related death worldwide, according to a recent study published in the journal "CA: A Cancer Journal for Clinicians", lung cancer accounted for 18% of all cancer deaths in 2020¹. Although most cases are diagnosed in advanced stages, with metastases to other organs, brain metastasis is particularly common in patients with lung cancer, occurring in around 40% of cases, being a significant clinical complication and can negatively affect the quality of life and survival of these patients².

Brain metastasis occurs when cancer cells spread from the lung to the brain, causing secondary tumors to grow in the brain. This condition may be asymptomatic in its early stages, but can cause symptoms such as headache, changes in vision, problems with balance and cognition³. The treatment of brain metastasis must be individualized for each patient, and the therapeutic approach must involve a multidisciplinary team.

CASE REPORT

Anamnesis

Patient M.A.T. 66-year-old female, sought the neurology team complaining of progressive hemiparesis in the left side over the last 15 days.

Denies associated symptoms or similar symptoms previously. He denied having a seizure and fever.

He was taking escitalopram 20 mg per day and risperidone 2 mg per day for 30 days, due to suspected major depression.

Denies comorbidities.

Physical exam

Good general condition, oriented in time and space, with blood pressure of 140x90mmHg. The neurological examination showed grade IV complete left hemiparesis and a cutaneous plantar reflex extending to the left.

Conduct

Initially, the patient was admitted to a hospital under the care of the neurosurgery team and a non-contrast head tomography was performed, observing the following aspects: spontaneously hyperattenuating nodular lesion centered in the middle frontal gyrus on the right, measuring 2.0 x 1.9 x 2.0 cm in the presence of a hypoattenuating area with a permeative aspect predominantly involving the subcortical zone between the white and gray matter (probable vasogenic edema), with an expansive effect that partially erases convexity grooves in the ventricular system. To further elucidate the case, magnetic resonance imaging with contrast and brain spectroscopy were performed, which revealed an expansive right frontal lesion with significant edema.

Given the clinical picture and MRI findings, the patient was clinically managed to reduce perilesional brain edema with intravenous dexamethasone and prophylaxis for seizures and deep vein thrombosis with intravenous phenytoin and subcutaneous enoxaparin, respectively.

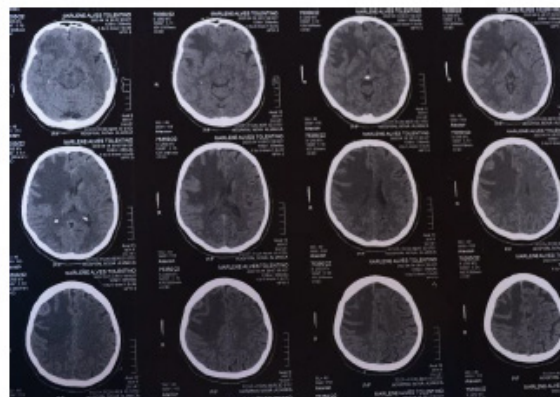


Figure 1: Emergency head CT, with the following aspects observed: spontaneously hyperattenuating nodular lesion centered in the middle frontal gyrus on the right, measuring 2.0 x 1.9 x 2.0 cm in the presence of a hypoattenuating area with a permeative aspect predominantly involving the subcortical zone between the white and gray matter (probable vasogenic edema), with an expansive effect that partially erases convexity grooves in the ventricular system, requiring evaluation with intravenous contrast, preferably MRI, for additional information.

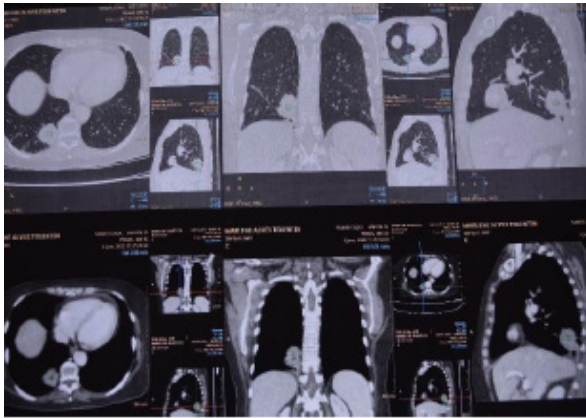


Figure 2: Computed tomography (CT) for staging shows a rounded lung mass with well-defined limits and irregular contours compatible with clinical reports of a primary neoplastic lesion located in the posterior segment of the right lower lobe, subpleural, presenting heterogeneous contrast enhancement and measuring approximately measuring 3.3 x 3.1 cm in the largest axial axes. Absence of pleural effusion. No evidence of mediastinal lymph node enlargement. Bone structures without changes of oncological relevance.

ANTIGEN	ANTIBODY	RESULT
CK7	SP52	POSITIVE
NAPSINA	MRQ-60	POSITIVE
TTF1	8G7G3/1	POSITIVE

Table 1: Conclusion on examination: Metastatic adenocarcinoma consistent with pulmonary origin.

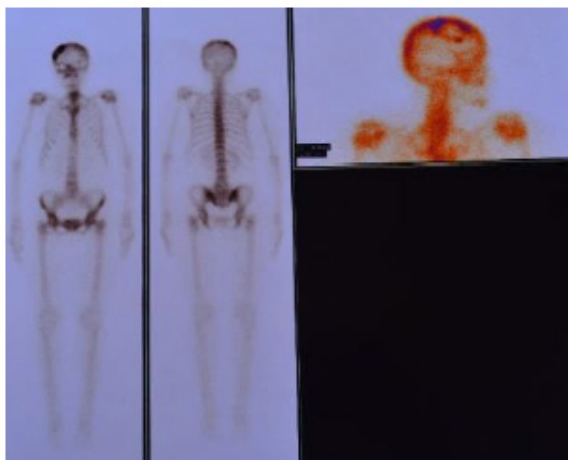


Figure 3: Bone scintigraphy demonstrates low probability for metastatic osteogenic process in the skeleton

SURGICAL CONDUCT

The patient underwent microsurgery for an intracranial tumor, cranial reconstruction and treatment of a cerebrospinal fluid fistula with removal of material for histopathological study under general anesthesia.

EVOLUTION

The patient was taken to the intensive care unit, where she presented a satisfactory and uneventful evolution, remaining for just 24 hours and being discharged after four days of hospitalization.

PROGNOSIS AND FOLLOW-UP

The result of the histopathological examination showed poorly differentiated neoplasia infiltrating nervous tissue. It was necessary to complement it with an immunohistochemical study, which showed metastatic adenocarcinoma consistent with pulmonary origin.

Given the diagnosis, the patient underwent chemotherapy treatment with Osimertinib 80mg per day. Approximately 15 days after neurosurgery, the patient began to experience generalized jaundice, anasarca and diffuse rash, in addition to choluria and fecal acholia. She underwent several laboratory tests which identified drug-induced hepatitis caused by Phenytoin poisoning. After the condition, the anti-convulsant was discontinued, with subsequent clinical improvement.

The patient underwent a series of skull MRIs and chest CT scans for follow-up, showing stability of the post-surgical lesion in the brain and stability of the lung lesion located in the posterior basal segment of the right lower lobe.

Currently, the patient is still undergoing treatment for lung cancer, undergoing periodic imaging tests to monitor the treatment, as well as consultations with a neurologist to assess possible developments.

CONCLUSION

Lung cancer with brain metastasis is a significant complication that can negatively affect patients' quality of life and survival⁴. The present case report highlights the complexity of managing lung cancer patients with brain metastases. In this sense, it is important to highlight that the treatment approach must be individualized and based on factors such as the extent of the disease, the presence of genetic mutations and the patient's general health status. Therefore, the effective management of lung cancer with brain metastasis must be multidisciplinary, involving Oncologists,

Neurologists and Radiotherapists to optimize the patient's clinical outcome⁵. Furthermore, molecular therapy and immunotherapy have emerged as promising treatment options for patients with lung cancer with brain metastases and should be considered in conjunction with other treatment modalities⁶.

Therefore, the management of lung cancer patients with brain metastases remains a challenge for clinical practice, requiring an individualized approach and interdisciplinary collaboration in order to improve the quality of life and survival of these patients.

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The Role of Acupuncture in the Management of Nausea and Vomiting After Chemotherapy

O papel da acupuntura no manejo de náuseas e vômitos após uso de Quimioterápicos

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1. ABSTRACT

Introduction: Acupuncture is a technique of Traditional Chinese Medicine in which needling stimulates body points, promoting therapeutic effects and energetic balance of organs and viscera. Disruption of the natural flow of stomach descent force and rising Qi can cause nausea and vomiting (N/V), the main side effects of chemotherapy, related to reduced adherence and prolonged treatment. **Objective:** To conduct a literature review on the role of acupuncture in the management of nausea and vomiting after chemotherapy. **Methodology:** Articles (randomized blinded clinical trials, systematic reviews with meta-analysis, integrative literature reviews, therapeutic manuals, epidemiological databases) were searched on PubMed between 2012 and 2022. Exclusion criteria were outdated articles and/or those focused on a specific patient profile or neoplastic pathology. **Result and discussion:** In case of high-risk therapies, nausea and vomiting are hardly treatable with conventional antiemetics. When acupuncture was compared to ondansetron, there was a more significant response in the acupuncture group (52.8%) than in the ondansetron group (35.7%). There was a significant decrease in the frequency of N/V between the first and second chemotherapy cycles ($P < 0.0358$) and in their intensity ($P < 0.0087$) between the control group and patients who received transcutaneous electrical nerve stimulation (TENS) therapy at acupuncture point PC6. **Conclusion:** Acupuncture can be used as an alternative and complementary treatment, especially for patients who do not tolerate the side effects of conventional antiemetics. However, the literature is still controversial due to the small number of available studies and/or small sample size.

Descriptors: acupuncture, antineoplastic agents and nausea

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2. INTRODUCTION

2.1 Acupuncture

Acupuncture is an ancient needling technique of Traditional Chinese Medicine. Needling allows the stimulation of body points, promoting therapeutic effects or even establishing energetic balance in organs and viscera, leading to well-being. These points, although superficial, are connected to internal organs. Currently, acupuncture can be associated with new technologies such as ultrasound, infrared, and laser, and different modalities can be employed, such as classical acupuncture, electroacupuncture, acupressure, and auricular acupuncture.^{1,2}

2.2 Cancer and Chemotherapy

Cancer is the term used for a group of malignant diseases characterized by the uncontrolled growth of cells. Cancer treatment can be done through surgery, radiotherapy, bone marrow transplant, or chemotherapy. Chemotherapy involves the use of drugs to fight cancer, as they are distributed throughout the body through the bloodstream to destroy or inhibit cells with uncontrolled growth. However, these medications are potent and can cause various side effects such as nausea and vomiting, hair loss, diarrhea, infertility, mouth sores, and leukopenia.³

When the use of such cytotoxic drugs is necessary, they can be classified as high, moderate, or low risk for causing nausea and vomiting.⁴

2.3 Stomach and Nausea and Vomiting

The stomach (Wei) is responsible for receiving and preparing food and drinks, initiating the separation of pure and impure fractions along with the Spleen/Pancreas (Pi).⁵

Disruption of the natural flow of the stomach's descent force and rising Qi can cause nausea and vomiting, the main side effects of chemotherapy, related to reduced adherence and prolonged treatment.^{2,5}

2.4 Acupuncture Post-Chemotherapy

Post-chemotherapy acupuncture is used with the main objective of improving the quality of life of oncology patients by helping to alleviate symptoms of anxiety, fatigue, nausea, and vomiting.²

3. PROBLEM

Nausea and vomiting are the main side effects induced by chemotherapy, affecting both the quality of life and treatment adherence.^{6,7} Acupuncture can be

a complementary treatment, reducing the excessive use of medications and their side effects. However, few systematic studies are found regarding the effectiveness and safety of this approach.⁷

3.1 HYPOTHESIS

The use of acupuncture in patients after chemotherapy for the management of nausea and vomiting helps both well-being and symptom management, as well as reducing the use of conventional antiemetics and the adherence of these patients to treatments.

4. OBJECTIVES

4.1 GENERAL OBJECTIVE

To conduct a literature review on the role of acupuncture in the management of nausea and vomiting after chemotherapy.

4.2 SPECIFIC OBJECTIVES

1. Understand the therapeutic mechanism behind acupuncture in the prevention of nausea and vomiting;
2. Identify the most effective techniques and main acupuncture points;

5. JUSTIFICATION

The use of chemotherapy for cancer treatment is one of the main and most accessible therapies for the management of oncology patients, especially in Brazil. However, despite being effective for various oncological pathologies, conventional chemotherapy induces several frequent and unwanted side effects, with nausea and vomiting being the most common. The high incidence of these aforementioned side effects can be evidenced as more than 90% of patients using conventional chemotherapy drugs, such as cisplatin, who did not use prophylactic antiemetics, are at high risk of emesis in the first 24 hours. In addition, chemotherapy-induced nausea and vomiting can cause and worsen malnutrition, depression, dehydration, electrolyte disturbances, as well as decrease the tolerance and adherence of patients to drugs^{7,8}. Therefore, acupuncture is a great ally due to its low cost, easy applicability, and low rates of side effects^{1,2,7}.

6. MATERIALS AND METHODS

The literature review on the role of acupuncture in the management of nausea and vomiting will be conducted by searching for articles on PubMed (randomized blinded clinical trials, systematic reviews with meta-analysis, integrative literature reviews, therapeutic manuals, epidemiological databases)

between 2012 and 2022. Portuguese and English descriptors for acupuncture, antineoplastic agents, and nausea were used. For the selection of articles, the criteria were the need to cover acupuncture and chemotherapy-induced nausea and vomiting for cancers in general, be updated and scientifically relevant, while exclusion was based on less updated articles and those focused on a specific patient profile or neoplastic pathology.

7. RESULTS/DISCUSSION

Nausea and vomiting are common complications after chemotherapy, being the most feared and unpleasant side effects that impact both the quality of life and the outcome of treatment.⁶

Emetic events that occur before the infusion of cytotoxic drugs are considered anticipatory, those that occur within 24 hours are acute and subacute effects, with acute effects usually occurring between 1-2 hours after infusion and subacute effects occurring between 9-18 hours after. On the other hand, late effects occur after 24 hours of infusion and usually persist for up to 72 hours. In addition, drugs with a high risk of N/V are quite common in treatments of highly prevalent neoplasms in clinical oncology, such as breast and prostate cancer, including cyclophosphamide, cisplatin, carmustine, meclizetamine, streptozocin, cyclophosphamine, dacarbazine, and a combination of anthracycline and cyclophosphamine. Such classifications of the emetogenic effects of each drug or combination of chemotherapy drugs define the prophylactic class and dosage of antiemetic drugs that will be prescribed. Although individualization of the indication for prophylaxis of emetic events associated with oncological treatment, there are drug schemes that can include classes such as 5-HT₃ receptor antagonists, NK1 tachykinin receptor antagonists, steroids, olanzapine, dopamine receptor antagonists, and benzodiazepines.^{4,7}

Chemotherapy-induced nausea and vomiting (N/V) can be classified by the moment they occur and the emetogenic potential each drug has in causing them. Thus, there are anticipatory, acute, subacute, late, and high-risk drugs (>90%), moderate (30-90%), low (10-30%). High-risk emetic therapies are those in which the risk of emesis is greater than 90% in the first 24 hours after the start of therapy in patients not using antiemetic prophylaxis. Regarding the time of manifestation, the interval between chemotherapy approach and the occurrence of vomiting allows classifying the episode into early vomiting (interval less than or equal to 24 hours) and late (interval greater than 24 hours).⁸

Given high-risk therapies, nausea and vomiting are hardly treatable with conventional antiemetics (5-HT₃ receptor antagonists, NK1 tachykinin receptor antagonists, and corticosteroids). About 28% of patients using moderate to high-risk drugs for emesis still have symptoms despite antiemetic prophylaxis. In addition to the failure of symptom remission with conventional treatments, side effects of this approach, such as constipation, headache, and hiccups, stand out, justifying the search for new approaches such as Traditional Chinese Medicine techniques. We analyzed a literature review article that found that the effect of acupuncture in controlling chemotherapy-induced nausea and vomiting was beneficial and effective in 13 out of 15 analyzed studies, comparing classical acupuncture, electroacupuncture, and the use of antiemetic medication. Classical acupuncture obtained positive results in all 13 studies, however, only one article on electroacupuncture had a positive result. When acupuncture was compared to ondansetron, there was a more significant response in the acupuncture group (52.8%) than in the ondansetron group (35.7%). In light of this data, it was found that acupuncture can be used as an alternative treatment, especially for patients who do not tolerate the adverse effects of ondansetron. However, the statistically insignificant results were justified by the author due to the low number of participants in the research.²

According to Tonezzer et al., a significant decrease in the frequency of N/V was demonstrated between the first and second chemotherapy cycles ($P < 0.0358$) and in their intensity ($P < 0.0087$). These results were obtained through a controlled, prospective, randomized clinical study, where patients in the control group did not receive transcutaneous electrical nerve stimulation (TENS) therapy at the acupuncture point PC6. On the other hand, the author mentions that such results with TENS were not equally replicated concerning the intensity of N/V in the literature, but systemic acupuncture demonstrated a significant decrease in acute episodes of N/V, as well as acupressure with the severity of such side effects.

8. CONCLUSION

Through this study, it was evidenced that acupuncture can be used as an alternative and complementary treatment, especially for patients who do not tolerate the side effects of conventional antiemetics. However, the literature is still controversial due to the small number of available studies and/or small sample size.

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CATEGORIA DE ARTIGOS

Além dos artigos originais que tem prioridade, a Revista da Sociedade Brasileira de Cancerologia, publica revisões, atualizações, relato de casos e cartas ao editor. Nomes genéricos dos fármacos devem ser usados. Quando nomes comerciais são usados na pesquisa, esses nomes devem ser incluídos entre parênteses no capítulo MÉTODOS .

Artigos originais: são contribuições destinadas a divulgar resultados de pesquisa original inédita, que possam ser replicadas e ou generalizadas. Devem atender os princípios de originalidade e clareza da questão norteadora, Justificativa e Objetivos. Introdução, Métodos, Resultados, Discussão, Conclusão, Figuras e Tabelas e Referências Bibliográficas.

Revisões: Avaliação crítica sistematizada da literatura e ou reflexão sobre determinado assunto, devendo conter conclusões. O procedimento adotado e a delimitação do tema devem estar incluídos. Para artigos de revisão destacar: Justificativa e Objetivos, Conteúdo e Conclusão.

Relato de casos: estudos avaliativos, originais ou notas prévias de pesquisa contendo dados inéditos e relevantes no fenômeno estudado. A apresentação deve acompanhar as mesmas normas exigidas para artigos originais.

Descritores: Para todos os artigos, indicar os Descritores. Recomenda-se a utilização do DECS – Descritores em Ciência da Saúde da Birene, disponível em <http://decs.bvs.br/>.

Summary: A versão do resumo para o inglês deve ser enviado.

Texto: Iniciar o texto de acordo com o tipo de artigo.

Deve ser estruturado da seguinte forma: Introdução, Conteúdo, Conclusão e Referências. Não deve exceder a 40 referências.

ABREVIATÓES

Por favor, lembre que, apesar de muitos de nossos leitores serem especialistas, eles podem não ser especialistas na sua área e, assim é necessário explicar toda a terminologia e acrônimos a primeira vez que eles são usados. Por favor, providencie uma lista alfabética de todas as abreviações.

Referências: A Revista da Sociedade Brasileira de Cancerologia adota as "Normas Vancouver", disponível em <http://www.icmje.org>, como referência para a veiculação de seus trabalhos. Use as abreviações de revistas encontradas no Index Medicus/MedLine.

Elas devem ser dispostas no texto em ordem sequencial numérica, sendo obrigatória a sua citação (sobrescritas, sem parêntesis). Evitar a citação do nome do autor em destaque. Não se recomenda a citação de trabalho não publicado ou apresentado em Eventos Médicos. As referências com mais de cinco anos, de livros texto e resumo de congressos, devem limitar-se às que são fundamentais. Incluir referências acessíveis aos leitores. Quando a citação for de artigo já aceito para publicação, incluir "em processo de publicação", indicando a revista e o ano. Comunicações pessoais não são aceitas.

Devem ser citados até três autores e, a seguir, et al. O título do periódico deverá ter seu nome abreviado.

Exemplos de referências:

Artigos de revistas:

1 autor - Wall PD. The prevention of postoperative pain. *Pain* 1988;33(1):289-90.

2 autores - Dahl JB, Kehlet H. The value of pre-emptive analgesia in the treatment of postoperative pain. *Br J Anaesth* 1993;70(1):434-9.

Mais de 3 autores - Gimenes RO, Previato BL, Claudio PDS, et al. Impacto do programa escola de coluna em indivíduos com hérnia de disco lombar. *Rev Dor* 2008;9(2):1234-41.

ILUSTRAÇÕES

É obrigatória a sua citação no texto. Enumerar gráficos, figuras, tabelas e quadros em algarismos arábicos, elas deverão conter título e legenda. Indicar no texto, o local preferencial de entrada de cada ilustração (Entra Figura x, por exemplo). O mesmo resultado não deve ser expresso por mais de uma ilustração. Sinais gráficos utilizados nas tabelas ou gráficos devem ter sua correlação mencionada no rodapé. Gráficos, Figuras e Tabelas devem ser enviadas separadas do texto principal do artigo. A qualidade dos gráficos e figuras é de responsabilidade dos autores.

FORMATO DIGITAL

A Carta de submissão, o manuscrito, e tabelas deverão ser encaminhadas no formato DOC (padrão Windows Word); figuras em barras ou em linhas deverão ser encaminhadas em Excel (extensão XLS). Fotos deverão ter resolução mínima de 300 DPI, em formato JPEG.



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