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Palliative care: The use of oxygen therapy in managing the symptoms of advanced disease

Cuidados paliativos: A utilização da oxigenoterapia no manejo dos sintomas da doença avançada

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ABSTRACT
Palliative care lacks an intervention in the care of patients in the early, advanced, or terminal stages of the disease, promoting comfort or control of signs and symptoms. According to this literature review, for patients in palliative care when there are signs of dyspnea leading to hypoxemia, the use of oxygen therapy may be indicated to correct the hypoxemic condition. The aim of this study is to understand the use of oxygen therapy in patients under palliative care in advanced disease. The methodology used was literature review research and the articles used were searched in the following databases: Pubmed, Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS) and Google Scholar. According to the studies carried out, it has been observed that the critically ill who are under palliative care, the improper use of oxygen supplementation can result in serious and harmful effects on health. Dyspnea is one of the most frequent symptoms experienced by individuals with terminal or end-of-life illnesses. For this reason, the correct use of oxygen therapy in terminally ill patients can be a good reversal of dyspnea, enabling better comfort and increasing the individual's quality of life.

Keywords: Palliative care, Oxygen therapy, Dyspnea, Cancer.

1 INTRODUCTION

According to the World Health Organization (WHO), in 2002, palliative care was defined as an action that improves the quality of life of patients and their families during the coping with a life-threatening disease, requiring comprehensive care, and aims to alleviate suffering, through

early identification, impeccable evaluation and physical treatment. psychosocial and spiritual. (QUINTANILHA, 2022).

Palliative care is offered by a multidisciplinary team, in which physiotherapy is present. The physical therapist has unique resources that are extremely important in palliative care. It has a comprehensive arsenal of techniques that complement palliative care, both in improving symptoms and quality of life, thus promoting functional independence. (SIQUEIRA, 2021).

For patients under palliative care, when necessary, oxygen therapy may be indicated for the use, which consists of the management of oxygen above the ambient air concentration (21%) and has the purpose of ensuring tissue oxygenation. It is applied to repair hypoxemia and, thus, provide a decrease in excess cardiorespiratory work, by increasing the increase in alveolar and blood oxygen levels. The most frequent reason for the application of oxygen therapy is acute respiratory failure (ARF), in which there is an inability of the respiratory system to preserve the values of arterial oxygen pressure (PaO2) and/or blood pressure carbon dioxide (PaCO2). (SILVA et al.2022).

As many patients who are under these care are, most of the time, patients with chronic diseases in more advanced stages and other pathologies where there are not so many possibilities for cure (SOUZA et al. 2021), dyspnea may be present, becoming one of the most disabling symptoms for the patient, therefore, in cases where there is hypoxemia, oxygen therapy is a widely used resource, But only in these cases is there a statute of limitations, since there are simpler remedies to be used. (MACHADO et al, 2021).

However, the lack of guidelines for the correct use of oxygen therapy can result in serious and harmful effects on the health of users. The risks of oxygen therapy can be classified as biological, physical, and functional risks. Biohazards are caused by fires and explosions; physical risks, due to injuries caused by the use of catheters or masks and dryness of secretions due to inappropriate humidification. Finally, functional risks cause deleterious effects, such as CO2 retention, atelectasis, increased SBP, reduced cardiac output, increased blood pressure, and toxicity risks, presented by cytotoxic oxygen manifestations (SOUZA et al, 2021).

Therefore, its prescription must be correct so that patients really benefit from it and obtain the expected result, both from a medical point of view and from a social, work and family point of view, since the limitations caused by the use of oxygen therapy can have a great impact on the quality of the end of life of people with advanced disease (CASTELLANO et al, 2022).

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2 METHODS

The methodology used for the development of this work was a bibliographic review of the literature indexed in databases recognized by the scientific community, such as Pubmed, Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS) and Google Scholar. The objective of the research of the articles was to include scientific publications that address the objective of the research, which had a full text and available, contemplating at least one of the chosen descriptors, published from 2013 to 2023, in Portuguese, English, and the search was carried out using the following descriptors: Oxygen therapy. Palliative care. Physiotherapy in palliative care.

After searching the database, 35 articles were selected. After all the studies were read, 25 were chosen. The exclusion criteria were articles that did not meet the objective of the research and that did not include the study period.

3 DISCUSSION

3.1 PALLIATIVE CARE

The definition of Palliative Care was initially proposed by the English social worker, nurse and physician Cicely Saunders, who was one of those responsible for the expansion, studies of pain control and elaboration of multidisciplinary practice for the care of terminal patients, not only in the physical and pathological way, but contemplating the social, spiritual and emotional aspects of patients undergoing treatment and their families. Due to this, Palliative Care is currently beyond the scope of health, as it is contained in all emphases of human life, such as interfering in the biological, social, material, psychological and spiritual aspects, not limited to the sick, but also extending to family members with the purpose of offering a better quality of life for all involved (Birth, 2022).

The principles of PC, according to the WHO, are: to promote relief of pain and other symptoms that affect the individual; affirming life and viewing death as a natural process; neither hasten nor delay death; integrate psychological and spiritual aspects into patient care; provide support for patients to live more functionally, as much as possible, until death; provide support to the family during the patient's illness and loss; meet the needs of patients and their relatives, use a team approach that includes counseling in loss if necessary; provide quality of life and perhaps positively influence the course of the disease, to be applied at the beginning of the disease, in conjunction with other therapies that aim to prolong life; understand and manage distressing clinical complications (Garcia et al, 2014).

Due to the high incidence of people with cancer and other fatal diseases, the WHO declares PC as an urgent need worldwide, currently, in less developed countries there is a great use of palliative care, since many patients receive their diagnoses in more aggravated stages and, in these cases, many treatments are no longer as effective (Garcia et al, 2014). In Brazil, with the aging of the population, the increase in the number of cancer patients and individuals with acquired immunodeficiency syndrome (AIDS) ends up generating a great need to offer this care. (Garcia et al, 2014). Therefore, according to Resolution 41/2018 5 of the Brazilian Ministry of Health, PC should be mandatorily offered in all categories of health care, that is, from primary care where users who have diseases that threaten the continuity of life will be monitored in their territory to hospital care, in which the focus is on the control of acute symptoms, offering greater comfort to the patient who is under palliative care, however, hospital care is only indicated when other levels of care, such as home and outpatient care, are not effective in controlling acute symptoms (Kurogi et al, 2022).

3.1.1 Palliative care in advanced disease

It is believed that palliative care is care that does not have the purpose of curing advanced pathologies, but rather increasing the patient's quality of life (Zampieri, et al, 2019). The process of terminality causes despair and concern to the patient and his family, due to the signs and symptoms that progress, the most common signs such as: dyspnea, pain and thirst. Suffering is not limited only to the family, but can also affect the multidisciplinary team, causing physical or psychological pain, burnout, headaches, changes in appetite and insomnia, because they deal with life or death cases on a daily basis. (Catalan, et al, 2015).

The biggest obstacle for the multidisciplinary team is to agree on which therapeutic measures they should use, which is why knowing how to deal with these situations is one of the most distressing reasons for professionals and requires more delicacy (Zampieri, et al, 2019). Thus, they safeguard the importance of PC as a transformative form of health care, as they understand, contrary to curative medicine, that the approach focused on the patient in its multidimensions involves all their needs, in addition to involving the entire family environment (Porto, et al, 2020).

Thus, actions at the end of life should prioritize the patient's interests, respecting their feelings and considering their social and spiritual principles, thus generating adequate communication among all those involved in this process, especially among the health team. In order to recognize the individual to whom they will provide assistance and focus on their needs

and limitations, thus enabling them to adopt humanized and favorable practices towards them (Zampieri, 2019).

3.1.2 Management of symptoms of advanced disease in palliative care

The palliative care approach is totally opposed to the biomedical model, which silences the individual, as it takes into account the patient, and not just the disease, thus valuing all their needs and complaints, seeing them as a whole, as provided for in the biopsychosocial model of health care. It is with this look at health that one of the main concerns of PC is directed towards symptom control (Gomes, et al, 2023).

The complete evaluation of signs and symptoms is the basis for an individualized and efficient palliative treatment, for death to be dignified, it is essential that the patient has all the necessary comfort, despite the limitations, and that his autonomy is respected at all times (Bittencourt, 2021). The intervention should address much more than symptomatic management, that is, there is also a need for constant contact with family members with clarification about the goals and expectations that help connect patients to their loved ones, thus resulting in greater family support and comfort for each patient (Mendes, et al, 2023)

There are several symptoms that accompany the patient at this stage, such as chronic pain and dyspnea (Schwingel, et al, 2022). From the diverse range of symptoms that these individuals present during the various phases of disease progression, dyspnea is a prevalent and debilitating symptom that can manifest for long periods until the end of life (FDV), causing important limitations for these patients. With the approach of VDF, dyspnea becomes progressively incurable and difficult to manage, and most patient comfort measures are applied. It is even more necessary at this stage to assess the degree of suffering of the patient with dyspnea in order to try to provide him with maximum comfort until the last day of life, also comforting the family, as they see that the family member is not suffering (Enriquez, 2019).

Since dyspnea is a multifactorial symptom and with different etiological mechanisms that condition different therapies (Enriquez, 2019) at first, the management of the symptom is attempted through non-pharmacological methods, such as psychological support, relaxation techniques, appropriate positioning through posture techniques, etc. The use of oxygen therapy is indicated only for patients suffering from hypoxemia, and is most often used for short periods (Schwingel, et al, 2022).

3.1.3 Indications for Oxygen Therapy in Advanced Disease

Dyspnea is one of the most commonly reported symptoms by people with terminal or end-of-life illnesses. The treatment of this symptom in advanced disease also has, in a culturally in-depth way, the precision of the essential use of oxygen therapy. This is seen as a first-line therapeutic measure by most patients with this symptom and by many healthcare professionals. Since sudden occurrences are constant in individuals in the terminal phase, oxygen therapy can be a good option in reversing dyspnea, providing comfort and enabling patient contact with their families, reducing possible discomfort and increasing their quality of life (Cardoso, 2022).

The management of the patient with dyspnoea in PC should begin with the recognition of the reason for the dyspnoea and its treatment. If the cause of dyspnoea is reversible, symptom management should be focused on the cause, but interventions focusing on symptomatic relief should always be considered together. If the cause is irreversible and/or targeted therapy is optimized without resolution of dyspnea, symptomatic relief becomes the main goal of therapy, and removal of oximetry saturation quantification is advised. The use of complementary oxygen is indicated only for patients with moderate to severe dyspnea and identified hypoxemia, and is most often used for short periods, especially before physical exertion or eating (Schwingel, et al, 2022).

The criteria for this prescription are established by national and international guidelines: in the presence of hypoxemia at rest, i.e., PaO2 ≤ 55 mmHg; SaO2 ≤ 88% or PaO2 = 56-59 mmHg and SaO2 ≤ 89% at rest in the presence of pulmonary hypertension, cor pulmonale, or polycythemia (hematocrit > 55%) (Azeved et al, 2021). And, even in these patients, there should be a reassessment of the benefit of therapy within a maximum of 3 days, which should be interrupted if the patient does not report improvement after a few days. (Frade et al, 2019).

In non-hypoxemic patients, other resources should be used prior to oxygen therapy. In these individuals who are under PC and do not meet the established criteria, the use of supplemental oxygen does not add benefit compared with room air through nasal cannulas for the treatment of refractory dyspnea. In addition, palliative oxygen therapy is not as effective as pharmacological treatment in the symptomatic control of dyspnea in advanced and irreversible disease and, therefore, should be used only after having explored other therapeutic options, pharmacological and non-pharmacological (Frade et al, 2019).

3.1.4 Forms of oxygen administration in patients under palliative care

The application is one of the considerable ways to treat hypoxemia, caused by the disease of origin (Alves et al, 2018). The most normal forms of oxygen therapy require face masks, cannulas, and nasal devices. (Demoule et al, 2017). The forms that can be used are high and low flow systems according to each goal predicted to the patient(Barreto et al, 2017).

Devices that make use of the low-flow system restore oxygen with low flows to the individual's inspiratory volume, typically 1 to 10 liters per minute. The remaining volume is directed by ambient air, which complicates classifying the fraction of inspired oxygen (FIO2) being administered to the patient (Donoso et al, 2013). Devices that make use of the high-flow system restore considerable oxygen to offer two to three times the person's inspiratory volume. They are appropriate for individuals who need high proportions of oxygen, since 100% oxygen is administered and sustains 100% humidification, which prevents dryness of the mucous membranes (Donoso et al, 2013).

3.1.5 Nasal candle

The use of O2 through a nasal catheter is a simple method, and the following are indispensable: oxygen source, connection circuit, humidifier with water, flowmeter and no smoking warning (Donoso et al, 2013). During the use of the nasal catheter, it is possible to eat and drink water without the need to remove the mask, where on other occasions it would be necessary. Dryness or bleeding of the nasal mucosa may occur from using high flows. Humidification is only necessary for flows greater than 4L/min (Barreto et al, 2017).

3.1.6 Mask with reservoir

There are two types of masks with reservoirs: With rebreathing and without CO2 rebreathing. Reservoir masks that grant achieve a FIO2 of 60%-80% to 10 liters per minute, while masks that prevent rebreathing can achieve FIO2 of 80%-95%, this happens due to one-way valves (Barreto et al, 2017).

3.1.7 Venturi Mask

The venturi mask allows for a concen adequate traction of oxygen, regardless of the volume offered. It has a device with the combination of air with oxygen to administer a continuous concentration of the gas. It uses lower levels of supplemental oxygen, avoiding the danger of suppressing the hypoxic stimulus (Donoso et al, 2013). This device offers continuous levels of

FIO2, has holes in which O2 enters the environment, and can be offered from 24% to 50% of O2. (Barreto, et al, 2017).

3.1.8 Deleterious effects of the use of oxygen therapy in advanced disease

As with any other medication, oxygen therapy should be used with great caution. Although severe hypoxemia is dangerous if left untreated, the effects of using uncontrolled oxygen therapy are also downright harmful (Silva et al, 2021). The limitations that are caused by its use should be carefully evaluated by a multidisciplinary team, as some of them can have a great impact on the quality of the end of life of the person with advanced disease (Stanzani et al, 2020).

With regard to oxygen therapy in palliative care patients, over the years it has been hypothesized that oxygen therapy has a beneficial effect on the approach to patients with dyspnea. However, as a therapeutic intervention, oxygen therapy is not free of negative effects and risks and can be a potential promoter of anxiety due to dependence on the equipment where a possible failure becomes an anxiogenic focus (Frade et al, 2019).

The administration of oxygen to users with diseases that cause hypoxemia can aggravate them over time. Among the symptoms, the following stand out: difficulty breathing, paresthesia of the extremities of the body, restlessness, fatigue, dry cough, malaise and dizziness (Souza et al, 2021), hypercapnia, cerebral and coronary vasoconstriction, production of reactive oxygen species with cytotoxic effects, pulmonary atelectasis, decreased cardiac output, increased peripheral vascular resistance, discomfort and airway injury (Frade et al, 2019).

4 FINAL THOUGHTS

Due to the high incidence of late diagnoses, palliative care has become essential in coping with the disease and supporting patients and families who deal with the impossibility of cure. As their main objective is to relieve suffering and welcome the patient as a whole, all therapeutic approaches are aimed at providing a better quality of life to these individuals. With advanced disease, patients commonly present signs and symptoms such as pain, dyspnea, and all of this acts directly interfering with the patient's well-being and functionality.

For the proper management of symptoms, a thorough evaluation of symptoms and constant welcoming of patients and their families is necessary. Dyspnea is one of the most persistent symptoms and affects the patient in many periods until the end of life. If the symptom is mild and reversible, some therapeutic measures can be used for symptomatic relief. However, when the

symptom tends to persist and becomes moderate and severe or generates hypoxemia, there is a need to use oxygen as a therapeutic form.

Thus, when the patient meets the criteria for oxygen therapy, it should be used in order to alleviate the patient's suffering, but always aware of the effects and risks that its use may generate on the patient's health.

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