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Research Article

Impact of Oral Mucositis in Pediatric Cancer Patients

Paula Silva*

Local Health Unit São João – Pharmaceutical Services, General hospital in Porto, Portugal.

***Corresponding Author:** Paula Silva., Local Health Unit São João – Pharmaceutical Services, General hospital in Porto, Portugal.

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Abstract:

Introduction: Cancer treatment in pediatric patients has several side effects, with oral complications being the most frequent and debilitating for these patients, with a significant impact on their quality of life.

Chemotherapy lacks selectivity, that is, it acts either in tumor cells or functional cells, with rapid cell multiplication, as is the case of the oral mucosa when affected by this mobility of treatment becomes thinner and atrophied, giving rise to oral mucositis.

Finality: Since chemotherapy is a risk factor for oral mucositis, the main purpose of this work is to study some of the preventive and treatment measures related to this phenomenon ensuring the quality of life of children and young people.

Materials and Methods: To respond to the objectives of this study, we used bibliographical research of scientific articles in the following databases Library, Pubmed-Medline, Google academic, ScieLo, Bon and Bireme, from which 32 articles were selected, we also used the official page of INFARMED and International Agency for Research on Cancer.

Conclusion: Despite constant advances, QT still causes some adverse effects, including in the oral mucosa. OM is one of the most debilitating side effects for children/young oncologic. OM is associated with pain, nutritional impairment, impact on quality of life, changes in cancer treatment, risk of infection and high economic costs. Even so, there are some preventive treatments that can minimize the side effects of QT, namely OM.

Key words: neoplastic agents; oral mucositis; pediatric cancer patients; treatment; prevention

1. List of Abbreviations and Acronyms

DNA – Acid Deoxyribonucleic

CHUSJ - Center Hospital University student They are John

DGS - Direction General of Health

EOCC - Protocol of European Oral Care in Cancer Group

IARC - International Agency for Research on Cancer

IPOPFG, EPE - Institute Portuguese of Oncology of Harbor Francisco Gentle, EPE

MO - Mucositis oral

WHO World Organization of Health

PALOP – Countries Africans of Language Official Portuguese

QT - Chemotherapy

ROS- Radicals Free of Oxygen

CNS – System Nervous Central

2. Introduction

One of main health problems public and that it's increasing Its incidence is cancer (Berger Velten D, 2016).

Through from the literature, it is known what the Cancer in child and one pathology rare, given just represent 1% of pathologies associated the pediatrics. Node however, the depart of the four years of age, us countries developed, the Cancer and one Car accidents are among the leading causes of death in childhood, after (road) accidents, and that is why it is so important to make a diagnosis as quickly as possible. once what your delay you may have serious implications in morbidity and mortality in children (Muniz & Maria, 2021; Brito & Paul, 2017).

The most commonly used treatment options include chemotherapy (CT), radiotherapy, and surgery; however, despite constant advancements, the QT continues the to provoke effects adverse, including in mucosa oral (Monteiro, 2022).

Chemotherapy's main objective is to prevent cell proliferation. However, this treatment has effects on the oral mucosa, given its lack of selectivity. acting he wants in the cell's tumors, he wants in the cells functional with rapid cell multiplication (Chaveli-López, 2014).

Thus, when subjected to chemotherapy, the oral cavity becomes thinner and atrophied, resulting in oral malformation, which is one of the most frequent oral complications in pediatric oncology (Carvalho C, 2018).

The development of oral mucositis (OM), in most cases, originates from a loss of state of health from the child in regime of treatment Oncological conditions can make it impossible to ingest solid or liquid foods due to the intensity of the pain, potentially leading to dehydration, malnutrition, and difficulty speaking (Mosel DD, 2011).

Recognizing the impact of bone marrow atrophy (BM) on pediatric oncology patients, it is important to study some of the preventive and treatment measures related to this phenomenon, thus ensuring the quality of life of these patients.

Thus, this work aims to conduct a literature review on the prevention and treatment of this oral complication and, in this way, understand the concept of pediatric cancer, analyze which cancers are most frequent in this age group, understand the development of oral malformation (OM), which is one of the most frequent manifestations in chemotherapy treatment, and the importance of oral health in pediatric oncology patients.

3 Revision of Literature

3.1 Concept of cancer pediatric

The cause of most tumors in pediatrics is still unknown. To date, it is estimated that 10% of cases are due to predisposition. genetics and what 5% they will origin in exhibition the factors environmental carcinogens. In practice clinic, the big majority of the patients with cancer There is apparently no known predisposing factor (Muniz & Maria, 2021).

In recent times, there has been significant progress in cancer treatments.

the what he did with what the rate of survival increased about of 80%. However, pediatric cancer remains the second leading cause of death among the 5-14 age group, after accidents, especially road accidents (Organization., 2018).

In general, a neoplasm in a child presents a greater potential for growth and development when compared to an adult, which may be the cause of an alteration in the child's development. Clinically these present symptoms characteristics of illnesses common in childhood, symptoms include irritability, weight loss, fever, and general malaise, which leads to... what the in big majority of the cases, the diagnosis of Cancer pediatric It appears accidentally and frequently in more advanced stages of the disease (Alba Ferrández-Pujante, 2022, Imbach P, 2011).

The choice of therapy to be implemented is extremely important, as it must take into account the type and location of the oncological disease, and the size of the tumor. of tumor, the fact of if spread by others parts of body, the age and health status of the patient.

THE treatment applied the child no he must to affect only about the body's recovery from the disease, but also about its quality of life and well-being in society (Gabriele Franco, 2021).

3.2 Which your cancers more common in pediatrics

The most common types of cancer in children are solid tumors, liquid tumors, and central nervous system (CNS) tumors. (Siegel R, 2019, UK., 2018)

At the moment, in many countries yet no they exist studies Epidemiological studies provide data on pediatric cancer, which makes it difficult to have a comprehensive overview. of problem. However, second data of last record oncology of the Institute Portuguese of Oncology referring to the cases diagnosed in 2017, leukemia was the most frequent cancer found in children. The three types of tumors with bigger incidents they were: to the leukemias (24 (cases), you Lymphomas (15 cases) and neuroblastomas (3 cases) were among the diagnosed cases, as can be seen in Figure 1. (Siegel R, 2019).

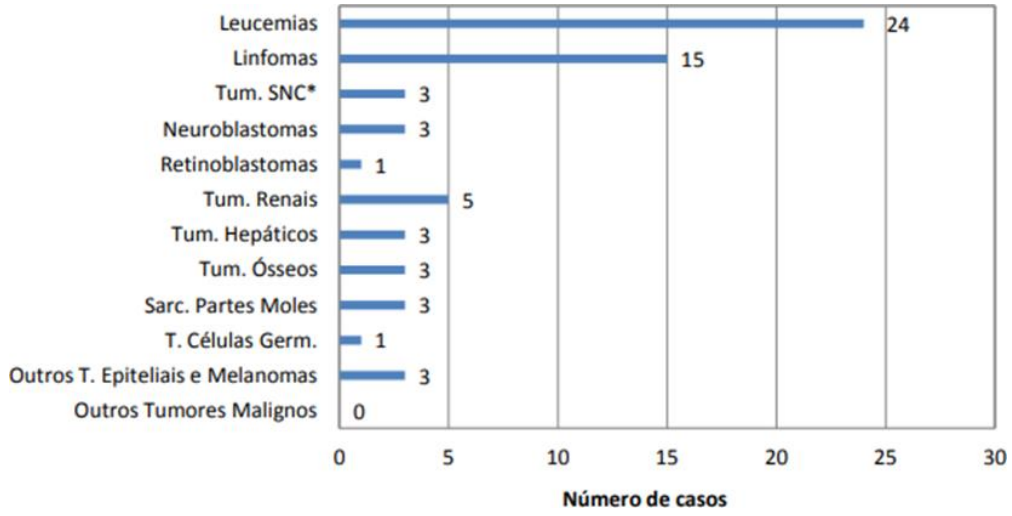

Figure 1: Tumors in children younger 15 years old put group diagnostic (Siegel R, 2019)

The incidence of tumors is related to age; some are more common in children up to 5 years old, such as lymphoblastic leukemia. acute and the neuroblastoma. Others increase the incidence as age increases, such as bone tumors. (United Kingdom, 2018)

The IARC (International Agency for Research on Cancer) presents the following incidence rates of pediatric cancer for the year 2020 (see figure 2).

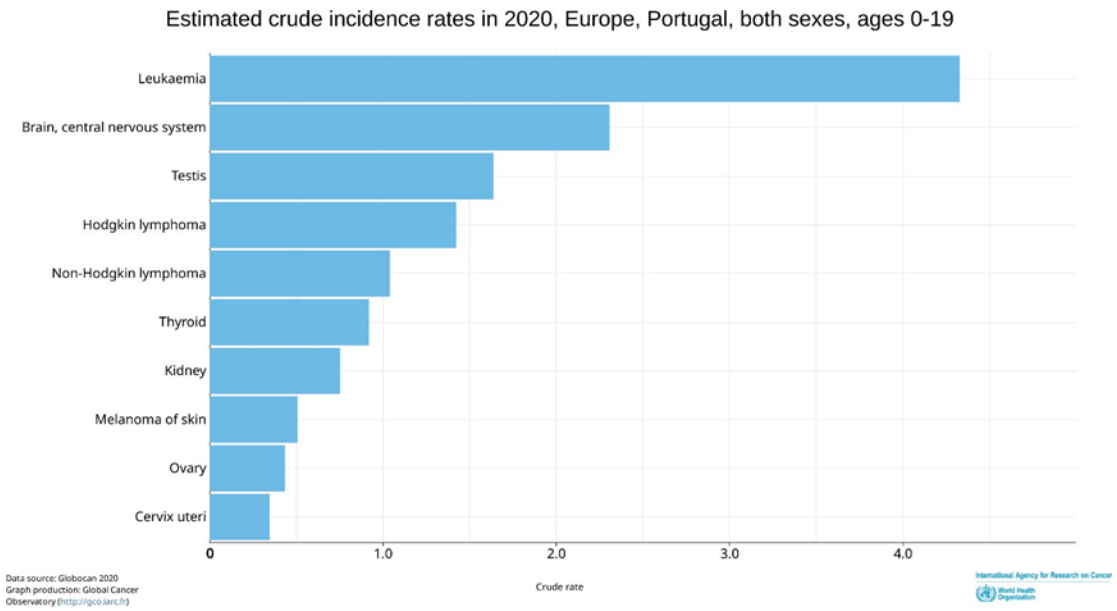

Figure 2: Estimated incidence rates in Portugal by age in both sexes in the year 2020 (Cancer, 2022).

It is important to note that the population type is different in Figures 1 and 2, the what he does with what your data presented be one little divergent between Yes. This. and, in figure 1, this represented one population from the region north of Portugal, having in consideration your data provided for the IPOPFG, EPE. Already in figure 2, is represented one population national, in which includes all to the regions of the country, including islands, immigrants, and PALOP countries.

3.3 Treatment oncology

Currently, the most commonly used treatments to control and minimize the spread of this disease include chemotherapy, radiotherapy, surgery,

and hematopoietic stem cell transplantation. These different therapies can be applied individually or in combination (Monteiro, 2022).

3.3.1 Chemotherapy

Chemotherapy is the main treatment modality responsible for the high rate. of survival in cancer pediatric. The rate global survival the incidence of all types of pediatric cancer has increased from 28% in 1970 to 80% today (Ward E, 2014).

THE chemotherapy involves the use of agents cytotoxic, of form the to prevent fast division and/or destroy to the cells evil, interrupting or slowing its growth (Isabella LA Ribeiro, 2019). Unlike surgery and radiotherapy, whose use is limited to specific areas of the tumor, chemotherapy has the ability to target cancer even when it has spread; however, these therapeutic agents also have disadvantages, as they lack selectivity, acting on both tumor cells and functional cells with rapid cell multiplication (Chaveli-López, 2014, Mosel DD, 2011).

Cytotoxic agents are usually administered at regular intervals. called cycles. THE number of cycles, like this as your duration, depends of type of chemotherapy, of type of illness and from the response of the patient's organism. Regarding the types of chemotherapy, these have distinct objectives, being divided into... in different types: QT adjuvant, QT neo-adjuvant and QT palliative (see Figure 3) (Gabriele Franco, 2021).

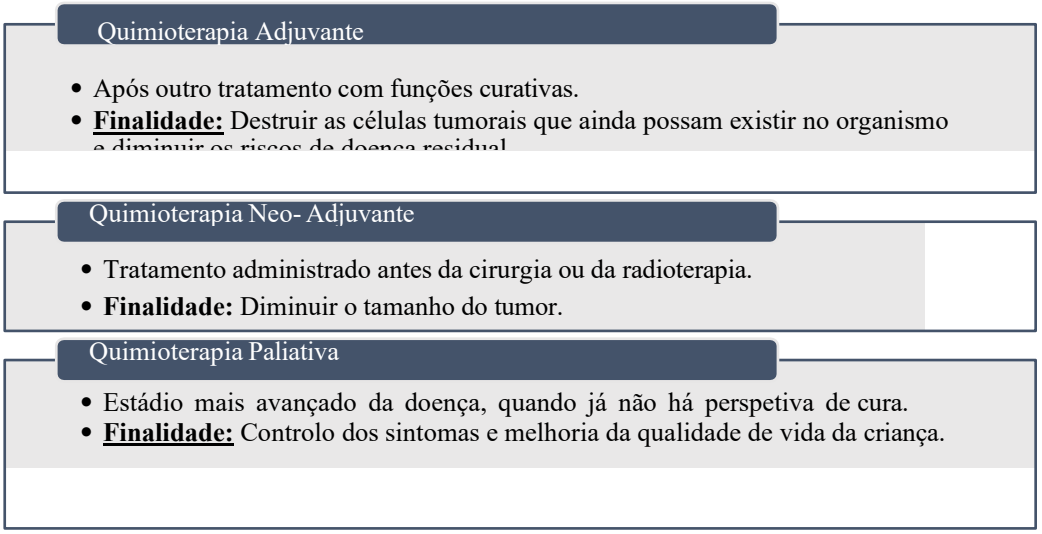

Figure 3: Different types of Agents Cytotoxic

Agents cytotoxic

In the 1960s, the first antineoplastic drugs began to emerge. what allowed to reach the success from the chemotherapy in children with cancer. (GATTA, 2013) However, when choosing treatment, the location and the histological type of the tumor, as well as the degree of impairment of the organ in question and the physical conditions of the child/young person (Chaveli-López, 2014).

Cytotoxic agents constitute a heterogeneous pharmacotherapeutic group, with diverse chemical structures and mechanisms of action. These drugs are mostly used as anticancer therapy, aiming to reduce tumor mass through direct effects and by acting on the patient's own inflammatory and immune cells, destroying neoplastic cells. (INFARMED., 2016). These drugs they can to be administered by oral route, by intramuscular route, by intravenous route, or by intrathecal route.

3.4 Manifestation oral resulting of treatment with chemotherapy

After numerous studies, it is possible to affirm that cancer treatment, that is, chemotherapy, leads to the appearance of various side effects, such as alterations in the oral cavity. In pediatric cancer patients, the prevalence of oral manifestations can reach 90%, due to the fact that children/young people have oral mucosa in constant renewal. cell phone, microbiota oral complex, trauma local and system compromised immune system (Juan Cortes Ramírez, 2014).

It is known what about of 65% of patient's cancers pediatric They manifest as MO, this being the most common complication in the administration of cytotoxic agents. in doses high put bolus or infusion continuous, being associated with one risk more high of to develop MO of what in administration prolonged and repeated use of smaller doses (Chaveli-López, 2014).

You agents cytotoxic that are more related with changes the MO they are:

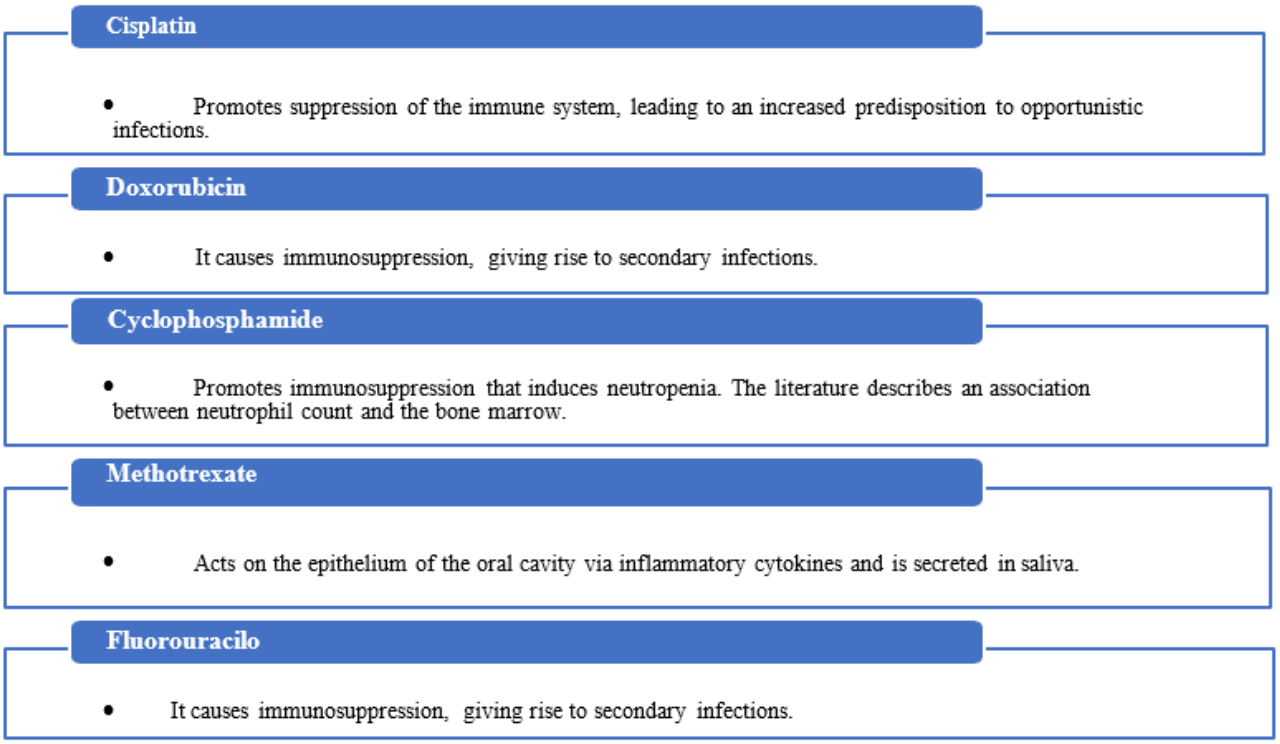

Figure 4: Cytotoxic agents that influence the development of bone marrow (Marlene Silva, 2014; Sali Al-Ansari, 2015).

Some specific cytotoxic agents result in a higher incidence and severity. from the mucositis. Node However, the QT combined and in doses more Elevated levels are also more likely to induce mucositis. Although there are no studies to prove this evidence, the medical community has generally accepted that antimetabolites and agents alkylating agents originam one high incidence and severity of mucositis.

3.4.1 Mucositis oral

Mucositis is a pathological process characterized by lesions of the mucosa, ranging from mild inflammation to deep ulcerations, affecting one or more parts of the digestive tract, as a consequence of chemotherapy. The clinical picture varies from erythema to ulceration. Typically, it is very painful and debilitating, and can occur in the oral cavity, lips, face/ventral surface of the tongue, floor of the mouth, and soft palate (Sali Al-Ansari, 2015; Esther Una Cidon, 2018).

At the origin of MO There are several symptoms, that is, pain, Bleeding, dysphagia, malnutrition, and infection can compromise some basic oral functions, such as chewing or swallowing. In more severe cases, reversing the clinical picture of oral malformation may require unplanned interruptions or dose reductions in cancer treatment, negatively influencing the prognosis and, consequently, the patient's quality of life (Chaveli-López, 2014).

Clinically, MO is a common side effect of chemotherapy and is more common in children/young people than in adults. This higher prevalence in infancy he can be related with indexes mitotic more elevated from the basal layer of epithelial cells. However, in more severe cases, where the

child is unable to feed orally, parenteral nutrition may be necessary to prevent dehydration or malnutrition (Deise Berger Velten, 2016).

Pediatric cancer patients often exhibit fragility in certain organs and systems. and for Sometimes there is a very rapid progression in the cancer. and this form one can to affirm what some of your symptoms they are true

Oncological emergencies, such as those caused by uncontrollable pain at home.

THE pain and the discomfort they are of the effects more common in MO and, in cases In more serious cases, they can result in dehydration and malnutrition in pediatric cancer patients.

To the pains what these children/young people feel they can affect the he speaks, to the Oral function and quality of life are compromised for patients, often resulting in hospitalization and potentially jeopardizing the continuity of treatment. oncology adequate, already what the dosage from the QT he can to be reduced or modified in relation to the protocol to prevent disease progression (Bianca Paiva, 2018).

In 2003, regulatory circular no. 09 provided for the implementation of pain as the 5th vital sign in all healthcare services, determining its continuous and regular assessment (DGS, 2003).

In chemotherapy treatments, the first symptoms of this toxicity in a person usually appear 3-4 days after the start, with the most severe manifestations occurring 7-14 days later. Healing usually occurs 5-10 days after the onset of the first symptoms (Kaoru Tsuboi, 2021; Sali Al-Ansari, 2015).

There is a wide variety of scales for assessing the severity of oral malformations. However, the most commonly used in clinical research studies is the scale of Organization World of Health (WHO). This scale and simple, easy off to use It combines objective measures (clinical appearance of the oral mucosa) and subjective measures (the patient's ability to swallow food). In this way, lesions are classified from grade 0 (normal) to grade 4 (severe).

On this scale, injuries are classified as (Esther Una Cidon, 2018; Kaoru Tsuboi, 2021):

- Degree 0 (absence of MO);
- Degree 1 (presence of erythema and sensitivity);
- Degree 2 (presence of ulcers and you patients they are capable of chewing solid foods);
- Degree 3 (presence of ulcers and you patients require diet liquid);
- Grade 4 (presence of ulcers and patients are unable (to feed themselves orally).

Pathophysiology from the mucositis oral

The pathophysiology of MO remains widely debated; however, it is known to be one of several adverse effects of chemotherapy. This cancer treatment produces effects harmful direct and indirect in the structures from the Oral cavity. Typically, MO in this therapeutic modality is due to a decrease in count of the neutrophils, caused put agents cytotoxic, the what does with what no it is possible to develop one response inflammatory suitable, by part from the mucosa oral. Like this the MO he can to be considered as one door entry point for bacteria from the oral environment to spread systemically. (Philip Riley, 2015; Kapil Gandhi, 2017; Lecidamia Damascena, 2020)

Thus, regression of oral mucosa is sometimes associated with an increase in neutrophil count. This is because the cells of the oral mucosa and the cells of the leukocytes he has one rate of renewal cell phone identical. Second the literature, the decrease of number of platelets this related with the gravity from the MO, since bleeding in the oral cavity hinders the healing process of these lesions. Depending on the type of chemotherapeutic agent used, MO lesions may or may not develop. (Lecidamia Damascena, 2020)

The proposed model to explain the pathogenesis of mucositis is divided into five phases (Spezzia, 2015):

- **Phase 1 – Initiation**

  The cells are exposed to an event, in this case chemotherapy, which generates oxygen free radicals (ROS), causing direct damage to deoxyribonucleic acid (DNA) that leads to the loss of the ability of basal epithelial cells to proliferate.

- **Phase 2 - Regulation and generation of message**

  Chemotherapy and the resulting DNA damage cause the activation of transcription factors. as the factor nuclear. Consequently, there is one increase production of cytokines pro-inflammatory and of factor of necrosis tumor Alpha, resulting in narrowing of epithelium through from the injury and death cellular, leading to the destruction of the oral mucosa.

- **Phase 3 - Amplification of signal**

  Some of the molecules from the previous phase can lead to the exacerbation and prolongation of tissue damage through positive or negative feedback.

  The submucosa, basal epithelium, and extracellular matrix are the target areas, and therefore the lesion may not be clinically visible until the ulceration phase.

- **Phase 4 - Ulceration**

  Patients exhibit more symptoms at this stage because epithelial integrity is damaged. Fungi, bacteria, and anaerobic organisms can colonize the damaged mucosa, a process that can be exacerbated by the simultaneous presence of neutropenia, leading to... the inflammation and the pain. THE ulceration this associated the one Increased pain occurs due to the loss of epithelial cells and consequent exposure of nerve fibers.

- **Phase 5 - Healing**

  With the interruption or finalization from the QT, all this sequence of the event ends, resulting in cell regeneration and the restoration of the oral flora. Cell regeneration is due to cell migration, proliferation, and differentiation, stimulated by signaling from the extracellular matrix of the submucosa.

Management from the mucositis: prevention and treatment

On those days what They run, I love continues to be one big challenge in area of oncology. They exist several measures preventive and therapeutic what they can to reduce the duration and severity of this complication. However, there is no consensus on which therapy is best.

Although, and possible find in literature studies what prove it what Cancer patients who received dental treatment before starting treatment. and indications of hygiene oral, present one decreases a significant 29%

increase in the prevalence of MO, for example, when compared with patients who did not benefit from these services (Sebastion, 2016).

It is extremely important that cancer patients be followed by a multidisciplinary team from diagnosis and throughout and after cancer treatment in order to avoid complications. For example, in cases more serious, and necessary to do one reduction or Interruption of cancer treatment ultimately compromises the child's prognosis and impairs their quality of life. It is important to note that this multidisciplinary team, composed of various members, should include a dentist or stomatologist, as they play a fundamental role in the prevention, early diagnosis, and treatment of cancers. complications oral improving the quality of life of sick and the success of cancer treatment (Berger Velten D, 2016; B. Rapone, 2016).

A very important step also involves educating parents/caregivers and the child/young person themselves. to the importance of one oral hygiene effective in the control of demonstrations oral of treatment oncology and teaching of strategies to lessen the severity that these complications can reach.

In the literature, several protocols for promoting oral health are described. However, this literature review will only address the European Oral Care in Cancer Group (EOCC) protocol, which is the most widely used in the northern region. This review also aims to address the reality of the São João University Hospital Centre (CHUSJ) and, in a way, understand the strategies used to combat this oral health issue.

• Protocol of European Oral Care in Cancer Group (EOCC)

EOCC it is a group multidisciplinary of experts in care oral who work with the objective of to improve the practice clinic in health oral in Cancer patients in Europe. In order to identify the risk factors for each child/young person, the oral health assessment process should begin before cancer treatment starts (B. Quinn, 2022).

To the strategies of treatment intended the to improve you care with the Oral health depends on four fundamental principles: accurate assessment of the oral cavity, individualized care plan, preventive measures, and appropriate treatment (B. Quinn, 2022).

Recommendations to the assessment initial from the health oral from the child:

- ✓ Assessment initial from the situation dental from the child, what he must to occur before cancer treatment;
- ✓ Before starting cancer treatment, all dental problems must be identified;
- ✓ In a phase closest to the start of cancer treatment, A further assessment of the oral cavity should be carried out;
- ✓ In the consultations of assessment, one must appeal the one scale from the pain, as for the changes experienced in the oral cavity;
- ✓ One time what they exist numerous scales to the assessment from the If pain occurs, its use is recommended for the entire team involved in the child's oral health care.

Recommendations to optimize the health oral in child in regime of cancer treatment:

- ✓ Assessment from the oral cavity

Patients hospitalized and with risk of to develop MO must to be assessed daily, as are outpatients with the same risk. which should be assessed at each clinical visit to the hospital.

- ✓ Paper of the parents/caregivers in hygiene oral of the children

All parents/caregivers should be instructed on the importance of maintaining good oral health in children/young people. Furthermore, it is important to inform them about the possible adverse complications of cancer treatment, so that parents can remain vigilant and possibly identify them.

- ✓ Diet

There are certain foods that should be avoided during cancer treatment, as they can cause damage to the already fragile oral mucosa, such as: rough, sharp, hard, spicy, salty, or acidic foods.

- ✓ Hygiene oral

Use a soft-bristled toothbrush two to four times a day, preferably after meals and before bedtime, depending on the condition of the oral cavity. If the child/young person does not tolerate the toothbrush, it can be temporarily replaced with oral sponges. However, oral sponges are not effective for plaque control or for preventing tooth decay and should not be considered an alternative to brushing.

It is important to note that the brush should be replaced after any process. infectious and and advisable the use of folders toothpastes Non-abrasive, containing mild fluoride with approximately 1000 to 1500 ppm of fluoride.

- ✓ Dental floss

Recommended only for children or parents experienced in its use, to avoid damage to soft tissues.

- ✓ Mouthwashes

Recommended mouthwashes with chloride of sodium 0.9% node minimum four times a day.

Mouthwash with Caphosol ™ or benzydamine hydrochloride. Mouthwashes with the mouthwash prepared in environment hospital treatment (Nystatin + sodium bicarbonate 1.4% and lidocaine 2%).

- ✓ Hydration oral

Lubricants, in the form of balm, gel or cream, should be used to moisturize. you lips. You patients must to maintain one hydration adequate and drink water frequently to keep your mouth moist.

In developing a treatment plan and preventing oral complications, the individual, the disease, cancer treatment, and other risk factors must always be considered. The choice of prevention regimens he must to be guided for the risk potential of to develop MO, like this, one must classify the patient as: without risk, low risk, risk moderate and high risk of oral and/or muscle injury.

Preventive interventions in patients at low risk of developing mucositis (no prior oral cavity problems and mild cancer treatment):

- ✓ Educate and stimulate the young and parents/caregivers the Report any changes in the oral cavity;
- ✓ Hygiene oral effective and regular, including mouthwashes additional to brushing;
- ✓ Recommendation of folders toothpastes fluoridated;

- ✓ Mouthwashes with chloride of sodium 0.9%;
- ✓ Follow-up dietary early;
- ✓ Assessment and intervention in cavity oral when necessary and registration.

Preventive interventions in patients with a moderate risk of developing mucositis (with a clinical history of oral cavity complications and moderately aggressive cancer treatment):

- ✓ Apply all to the interventions mentioned in cases of low risk;
- ✓ Increase the frequency of the mouthwashes with chloride of sodium 0.9%;
- ✓ Cryotherapy during the administration of some of the cytostatic agents with greater diffusion in the oral cavity;
- ✓ Mouthwashes with Caphosol TM or hydrochloride of benzydamine;

The patient is instructed to place ice in the oral cavity a few minutes before treatment begins, thus causing vasoconstriction and apparently reducing... the distribution of the agents' chemicals us fabrics from the mucosa oral. However, in pediatrics, this intervention no he has big accession for the refusal Patients should not apply ice to their oral cavity, and due to the risk of tooth decay, ice cream should not be offered.

Preventive interventions in patients at high risk of developing mucositis (highly aggressive cancer treatment, high risk factors):

- ✓ All to the interventions mentioned in cases of low and moderate risk;
- ✓ Therapy with laser of low intensity;
- ✓ Prophylaxis antifungal and/or antiviral;
- ✓ Follow-up nutritional.

Treatment of complications oral of agreement with the EOCC

Complication	Treatment
Moderate mucositis	• THE frequency of use of solution oral he can be increased. • Check for oral infections, clean and treat them properly. Topical or systemic antifungal treatment should be administered if necessary. • Gels containing dexamethasone can be used for canker sores. • Swallowing problems, malnutrition, and weight loss should be monitored. and you patients must to receive support/advice. • Fluid intake should be assessed and the route of administration of pain relief should be continuously monitored. Some patients will require appropriate pain medication, including topical and systemic analgesics such as paracetamol, codeine, morphine mouthwash, benzydamine mouthwash, and lidocaine.
Severe mucositis	• Increase pain medication as needed by the patient. • Increase the nutritional support. • Increase you mouthwashes and you care oral.

Figure 5: Treatment of complications oral of agreement with the EOCC (B.Quinn, 2022).

- Follow-up of patients cancers pediatric node CHUSJ

The pediatric service at CHUSJ attends to children and young people under the age of 18 years minus one day, who have cancer or are suspected of having it. from the same, being what, put deliberation from the DGS you patients Pediatric patients diagnosed with solid CNS tumors are treated at this hospital.

At CHUSJ, the follow-up of pediatric oncology patients is carried out by the stomatology team.

The pediatric service is composed of two areas: the outpatient clinic, where children/young people receive antineoplastic treatments and are referred for complementary examinations, and the pediatric oncology service, where patients requiring more intensive care are hospitalized.

Before starting cancer treatment, it is sometimes necessary to undergo certain procedures. treatments dental and, in cases of prognosis more ambiguous, recourse is made the extraction of tooth, having in account the profile hematological from the child. Node In cases of extensive cavities up to 5 years of age, tooth extraction is performed in the operating room.

The use of oral health promotion protocols is fundamental for providing advice. you parents/caregivers relatively the all you care what they can to have an impact on prevention and control of demonstrations oral. However, CHUSJ adopts preventive and/or treatment measures developed by itself, based on information described in some protocols, and applied consistently to all children. At CHUSJ, in order to prevent the appearance of oral complications resulting from cancer treatment, preparations are made one solution of 250ml to mouthwash, what and composed put nystatin, sodium bicarbonate 1.4% and lidocaine 2%.

Oral hygiene recommendations focus on effective tooth brushing, two the three times put day, supplemented with mouthwashes of Chlorhexidine as a prophylactic measure and in the use of Caphosol ™. (lubricant), calcium phosphate, in patients with more severe oral complications.

When in outpatient care, the children/young people followed at CHUSJ have weekly appointments, and sodium fluoride is administered, Duraphat ™ gel, in all the dentition and and, after this application, what the Children/young people can and should eat within the next two hours.

Node CHUSJ and recommended the all to the children/young people:

- Use of folder dental fluoridated between 1350-1500 ppm of fluorine;
- Use of wire dental as supplement the folder dental. Node However, this is only recommended for children over 8 years

of age and only if the children/parents/caregivers demonstrate experience in its use;

- Mouthwashes with chlorhexidine as a complement to or substitute for oral hygiene;
- Rinsing with the hospital's solution, as a prophylaxis or treatment of oral manifestations.

When children/young people cannot tolerate either the toothbrush or toothpaste, conventional oral hygiene is replaced with sponges soaked in chlorhexidine. As an alternative to chlorhexidine, the use of saline solutions, calcium phosphate, or Caphosol™ is indicated, as they are less abrasive.

Oral sponges should not be considered a permanent substitute for oral hygiene. Their ineffectiveness in removing oral biofilm has been proven, and therefore they are not considered suitable for good oral hygiene. (B. Quinn, 2022)

Therefore, it is understood that any oncological protocol should include an oral evaluation before starting treatment. Furthermore, the first contact between the child/parents/caregivers and the dentist or stomatologist is crucial for effective communication between the parties involved. informing which to the recommendations of hygiene oral suitable, as well as to identify and/or treat complications present before cancer treatment, in order to prevent foci of infection in the oral cavity (Priyanshi Ritwik, 2018; England., 2018).

Incidence/ prevalence of oral mucositis in cancer patients pediatric

THE incidence and prevalence from the MO no and consensual, one time what There are several parameters that affect statistics and there are characteristics that are important to take into account, namely (Kapil Gandhi, 2017):

• Different types of drugs and to the doses used node treatment;

• Differences ethnic and genetic between you patients studied;

• The incidence also varies with the age, being more frequent in children/young people, one time what today in day recourse is made the Increasingly aggressive treatments will lead to more severe neutropenia and consequently the development of mononucleosis.

• In the case of pediatric oncology patients, it may be related. with the absence of quality in information This includes information conveyed by medical teams, as well as the difficulty parents/caregivers face in understanding and applying the information provided to them.

From this form, matters refer what the incidence and the gravity from the MO he can be reduced through from the elimination of sources of infection or irritation before of Initiating cancer treatment and implementing preventive measures before, during, and after treatment is crucial. Therefore, these children should be included in programs... preventive inherent the Medicine Dental or Stomatology, the end to ensure oral care and specialized advice, which will contribute to improving the child's quality of life.

3.5 Which the importance from the health oral in patients' pediatric oncology

In pediatric oncology patients, oral health is simultaneously linked to their overall well-being, being an essential factor in maintaining and/or restoring their physical condition and their psychological, emotional, and social balance.

When dealing with a medically compromised child/young person, as is the case with these patients, its importance is even greater, as they are more susceptible to complications arising from the therapy.

Therefore, the importance of oral health is related to identifying, treating, and eliminating hotspots infectious or places annoyed in the oral cavity, communicate with team of oncology in relationship to the state of health oral, to the flat and to the patient treatment time, in addition to educating the child and family about oral hygiene care (Dentística., 2016; Luciane Costa, 2014).

However, in addition to the importance of oral health for improving the quality of life of these patients, it is important to address the issue of nutrition.

From a nutritional standpoint, it is known that children experience some difficulties. in food, one time what the pain and the discomfort provoked by MO make difficult the swallowing of these sick, the what he can to take the malnutrition Weight loss can occur, and in more severe cases, parenteral nutrition may be necessary. This type of nutrition presents some complications, including risks of infection, metabolic disorders, hepatotoxicity, and reduced oral intake. All these factors will affect the child's quality of life (Dentistry., 2016).

You patients cancers pediatric must avoid consumption of food that are irritating to the mucosa in order to prevent bone marrow damage. In some cases, a liquid diet is recommended.

As mentioned earlier, cancer patients should be monitored by a multidisciplinary team, which in this case should include a nutritionist.

4 Conclusion

THE Cancer and one pathology with huge impact in health oral resulting your treatment, namely from the QT. THE bigger predisposition of children Research into oral complications reveals the importance of promoting regular oral hygiene care, as well as providing appropriate advice and follow-up for children/young people and their caregivers.

Despite constant advancements, chemotherapy still causes some adverse effects, including on the oral mucosa. Oral mucosal dysplasia (OM) is one of the most debilitating side effects for children/young people with cancer. OM is associated with pain, nutritional impairment, impact on quality of life, changes in cancer treatment, risk of infection, and high economic costs.

The presence of a multidisciplinary team, including a dentist/stomatologist, nutritionist, what accompany the child in In a hospital setting, oral health is essential, as the worsening of oral complications can compromise the course of cancer treatment. These complications they can be prepared, with a follow-up before, during and after cancer treatment.

Mucosal abnormalities (MO) continue to represent a major challenge for the field of oncology; however, further studies are needed to achieve more effective planning for the prevention and treatment of MO, and more attractive solutions for children and young people, in order to increase adherence to therapy.

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