ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 8, Issue, 10, pp. 20788-20792, October, 2017

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

ORAL MANIFESTATIONS IN CANCER PATIENTS TREATED WITH ANTINEOPLASTIC DRUGS

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DOI: http://dx.doi.org/10.24327/ijrsr.2017.0810.0960

ARTICLE INFO

Article History:

Received 18th July, 2017
Received in revised form 10th August, 2017
Accepted 06th September, 2017
Published online 28th October, 2017

Key Words:

Drug Therapy. Oral Manifestations. Xerostomia, Stomatitis.

ABSTRACT

Introduction: The chemotherapy aims to destroy malignant cells, though it also acts on normal cells. It may cause unpleasant local effects and they may spread to other organs. Among the effects are the oral cavity changes such as: xerostomy, mucosities, traumatic or fungal lesions as well as taste disorders that cause discomfort to the patient with the functional, esthetic and phonetic commitment that make social reactions worse. **Objective**: Verifying the oral manifestation arise from chemotherapy in patients suffering from head, neck, breast, prostate, colorectal and stomach cancer. **Methodology**: It is about a cross-sectional study made with 43 patients diagnosed with cancer and submitted to chemotherapy, treated at NossaSenhora da Conceição Hospital. The patients were separated into five groups according to the type of cancer. The data collection were accomplished through a questionnaire and oral cavity tests. The results were imported to Excel spreadsheets and then exported to SSP* version 15 to a descriptive analyses and simple frequency distribution. **Results**: The results showed that 25 (58,1%) were male and 18(41.9%) were female. The patients' range was 60 to 69 years old. The main symptoms found were xerostomy 22 (51,2) and dysgeusia 19 (44,2%). **Conclusion**: They show to have the knowledge about the effects of oral manifestation arising from chemotherapy, having xerostomy and dysgeusia are the most oral simptoms found.

INTRODUCTION

Malignant neoplasm is a chronic disease considered a serious public health problem in the world, both in developed and underdeveloped countries (TARTARI *et al*., 2010; UNTURA and REZENDE, 2012; FACINA, 2014). Result of an abnormal neoformation of cells of a certain organ or tissue, that instead of dying, continue to grow forming new abnormal cells and causing a tissue mass known as tumor (INCA, 2012).

Popularly called cancer, the malignant neoplasm has been presenting a significant increase in its incidence, reaching around 9 million people every year in the world (TARTARI *et al*, 2010).The estimate for Brazil, between the years 2016 and 2017, suggests the occurrence of 600 thousand new cases of cancer, with predilection in males, from these 28,250 thousand located in the state of Santa Catarina (INCA 2016). The main risk factors for this disease may be related to age, smoking, alcohol, sun exposure, viral infections, nutritional problems, among others (SANTOS *et al*. 2013). Among the main types of cancer diagnosed in Brazil are those of the breast, prostate, head and neck, colorectal and stomach (INCA 2016). Although public policies of prevention and early diagnosis are used to try to modify this picture, the antineoplastic treatment is a constant. The indicated treatments are surgery, radiotherapy and chemotherapy, that can work alone or associated. The form of treatment to be chosen will depend on factors such as the organ of origin and the degree of invasion of the tumor (GRIMALDI *et al*. 2005). Concerning the treatment of head and neck neoplasms there is a tendency to perform surgery associated with radiotherapy. On the other hand, chemotherapy is more used in other types of neoplasms, whether or not associated with surgery or radiotherapy (CARDOSO *et al*. 2005). Chemotherapy is intended to destroy tumor cells usingmedicines via blood stream, and may or may not be associated with surgery and radiotherapy, classified in four ways according to its purpose. Curative therapy, when it represents the definitive choice for the treatment of the disease.

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Adjuvant therapy, which is performed after surgical treatment in order to increase the chance of cure. Neoadjuvant therapy, performed prior to the curative treatment, which purpose is to reduce surgical aggression and improve the prognosis. Finally, palliative therapy aims palliation of the disease, treating and delaying the signs and symptoms of the disease (INCA, 2012). Among the treatments with chemotherapy, there is also hormone therapy that uses hormone-inhibiting substances to treat hormone-dependent neoplasms (MINISTÉRIO DA SAÚDE, 2013).

By acting systemically, chemotherapy aims not only tumor cells, but also normal cells, causing various undesirable side effects near the tumor region or at a distance. Hematologic changes, capillaries, headache, nausea and vomiting are some examples of systemic adverse effects resulting from the treatment (INCA, 2012; UNTURA and REZENDE, 2012). In the oral cavityit can lead to qualitative and quantitative changes in salivary flow as well as in taste receptors, often etiological factor of mucositis, canker sores, candidiasis, xerostomy and dysgeusia, compromising the function, esthetics and phonation, causing social problems of conviviality (KREUGERetl al, 2009; SANCHEZ-LARA *et al*. 2010; CHAVELI-LOPEZ, 2014; FACINA, 2014; WONG, 2014; ARAUJO *et al*. 2015;INCA, 2016).

In addition to oral changes caused by the action of antineoplastic drugs, pre-treatment oral conditions may be aggravated. Such condition justifies a prior evaluation of the oral cavity's anti-neoplastic treatment in order to decrease and / or eliminate the sources of infection as well as to guide patients about the possible undesirable effects of chemotherapy under the oral mucosa, inadequate oral hygiene and pre-existing dental diseases are the conditions most commonly found in patients who undergo chemotherapy, which may result in more serious oral infections and develop into a systemic condition with health impairment (SANTOS *et al*. 2013; VIEIRA *et al*. 2012).

Thus, the presence of a dentist in the multiprofessional team that accompanies cancer patients is especially important. The dentist has the function of preventing and diagnosing oral lesions resulting from the antineoplastic treatment, stabilizing them and avoiding their aggravation and systemic involvement (SANTOS *et al*, 2013). During the antineoplastic treatment, evaluations of the oral cavity allow to minimize the adverse effects of the treatment. Monitoring after antineoplastic therapy is indispensable, as many of the medications may cause long term changes in the oral mucosa. Such behaviors are mainly aimed at promoting the patient's quality of life (AL-ANSARI *et al*., 2015).

Some studies (VIERIA *et al*., 2012; CHAVELI-LOPEZ, 2014) found in the literature, although they report the presence of oral manifestations due to chemotherapy, do not correlate the oral manifestation with the type of neoplasm. Therefore, the objective of this research was to verify the oral manifestations resulting from chemotherapy in patients affected by different types of cancer.

MATERIAIS AND METHODS

This is a cross-sectional study with an initial sample of 50 patients diagnosed with cancer attended at NossaSenhora da Conceição Hospital (Tubarão, Santa Catarina, Brazil), composing five different groups (n = 10) according to the location of the neoplasm: Breast, prostate, colorectal, stomach, head and neck. This study was approved by the Ethics and Research Committee of the Southern University of Santa Catarina under the number CAAE: 49948915.4.0000.5369, legal advice number 1,346,746.

Were considered as inclusion criteria: age over 18 years; Patients whose primary diagnosis of cancer was in the region of breast, prostate, colorectal, stomach, head and neck; Antineoplastic treatment started for at least 3 months and a therapeutic procedure performed by the Unified Health System (SUS in Portuguese). Patients who underwent head and neck radiotherapy and who did not agree to participate in the study were excluded by signing the Informed Consent Form (TCLE in Portuguese). Thus, the sample changed to 43 patients.

Data collection

The patients were submitted to oral examination with the help of a wooden spatula and gauze for removal and cleaning of the examined surface, in ambient lightining being as data: Presence of lesions, oral hygiene condition, presence of prosthesis, carious lesions and residual roots recorded in a specific file. A socio-demographic questionnaire was applied with questions about the type of neoplasm and the treatment performed and knowledge of oral health, among them dry mouth sensation and alteration of taste as well as knowledge about alterations caused by the antineoplastic treatment in the oral cavity. The data collected were tabulated in an Excel® worksheet and analyzed descriptively by the Statistical Package for Social Science (SSPS) version 15.0.

RESULTS

From the 43 patients's in the study, 25 (58.1%) were male and 18 (41.9%) were female. The patients age range was 20 to 79 years, with 14 patients (32.6%) aged 60-69 years.

Figure 1 shows the different treatments performed according to the primary neoplasm. The average time of disease discovery was 13 months and the average treatment time of 11 months.
From the interviewees, 26 patients (60.5%) claimed to have knowledge about the effects of chemotherapy in the oral cavity, although only 4 (9.3%) performed dental care prior to the start of chemotherapy treatment and 2 (4.7%) During the chemotherapy treatment.

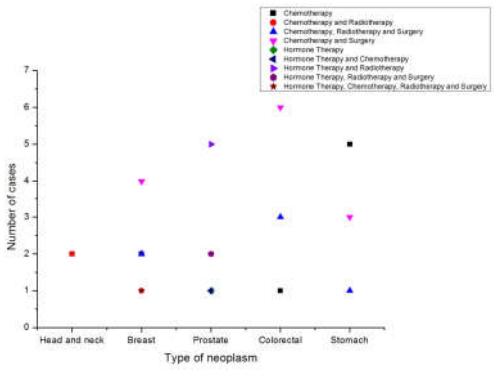

Fig 1 Distribution of the types of neoplasms and the treatments performed.

During the interview, 22 patients (51.2%) reported having dry mouth sensation, 19 (44.2%) reported having palate alteration,

and 18 (41.9%) reported having canker sores at various sites in the oral cavity, such as tongue, jugal mucosa, vestibule fundus and soft palate. The most common reported form of treatment by the patients for canker sores was Nystatin®.

The alterations found in the oral cavity of the patients at the time of clinical evaluation are described in figure 2.

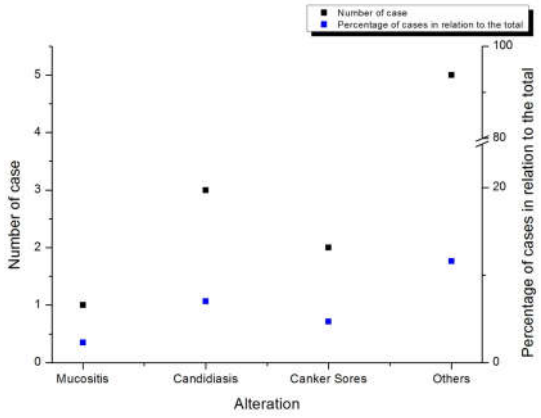

Figure 2 Alterations found in patients' oral cavity

Regarding the patients who underwent chemotherapy combined with surgery, 9 patients (64.3%) reported dry mouth sensation and 10 (71.4%) patients reported palate alteration. Figure 3 shows the complaint of dry mouth sensation described by the patients according to the type of neoplasm.

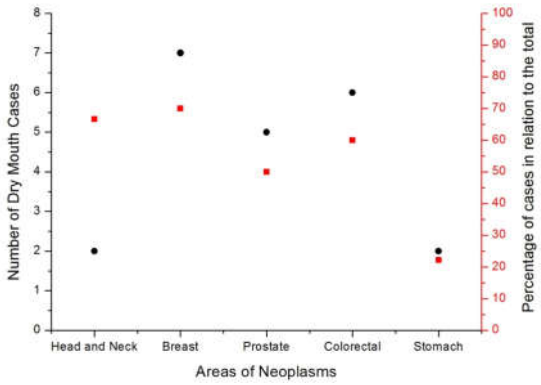

Figure 3 Dry mouth sensation complaint according to the type of neoplasm

DISCUSSION

Among the side effects of chemotherapy are oral manifestations (KREUGER *et al*., 2009; AL- ANSARI *et al*., 2015; HESPANHOL *et al*., 2010). Although the results of this research did not indicate a significant statistical difference due to the small number of the sample, xerostomy and dysgeusia were present, manifestations also highlighted by the literature (VIEIRA *et al*., 2012; CHAVELI- LOPEZ, 2014).This research demonstrated that regardless the type of neoplasm, dry mouth sensation may be present, contributing to the data indicated in the literature (CHAVELI- LOPEZ, 2014).Changes in the palate were more frequent in patients with breast and colorectal cancer. The literature does not indicate whether or notxerostomy is associated with decreased salivary flow and in which level of chemotherapy, dysgeusia is more frequent. It is suggested, therefore, studies with a greater number of patients regardless the type of neoplasm and that use antineoplastic drugs as a form of treatment, so they can verify these associations or not.

Although the data show that more than half of the patients have knowledge about oral cavity effects, the number of patients seeking dental care before and during anti-neoplastic therapy was low. The examination of the oral cavity ratified the presence of carious lesions, residual roots, poorly adapted prostheses, tongue shedding demonstrating the importance of having a pre and trans follow up treatment wich was not performed. It is worth pointing that patients who presented lesion in the oral cavity were instructed to seek dental care.

The researched literature reinforces the increase of malignant neoplasms, especially prostate and breast, and colorectal and stomach cancer in the Southern Region of the Country (INCA, 2016), as well as the search for antineoplastic therapies for the cure and increase survival and quality of life of the individual. Such therapies can often lead to changes in the oral cavity, reinforcing the need for studies that confirm these changes, as well as the presence of a multidisciplinary team that includes the DS working preventively with these patients.

The sample of this research was selected by convenience, being initially composed of 10 patients in each group. However, the scheduled maintenance of the laminar flow hood used for manipulation of the chemotherapeutic agents determined a momentary paralysis of the treatment, resulting in a decrease in the number of patients in the group of stomach tumors.

The insertion of patients with head and neck neoplasms was due to the fact that these neoplasms also have a certain prevalence within the diagnostic neoplasms in the country and its proximity to dentistry, with a higher number of sequels in the oral cavity. Because it is more effective in head and neck neoplasms, radiotherapy is the treatment of choice (CARDOSO *et al*.2005; JHAM and FREIRE, 2006). As sequels caused by radiotherapy in the oral cavity are more severe than those caused by chemotherapy, patients who received radiotherapy concurrently with chemotherapy were excluded from the sample. The two patients who reported radiotherapy and chemotherapy treatment remained, because the time between radiotherapy and chemotherapy was over 10 years. Although no requirement for dental treatment prior to initiation of treatment has been found in the literature, conditioning the anti-neoplastic treatment principle to prior dental assessment may be a good alternative (AL- ANSARI *et al*., 2015). The results of this research showed that the time of discovery of the disease at the beginning of the treatment was very fast, in agreement with the literature, which guarantees the patient the right to start the treatment in a period equal to or less than 60 days after the diagnosis was confirmed (SOUZA *et al*., 2015). Considering the rapidity at the beginning of the antineoplastic treatment, conditioning thebegining of the antineoplastic treatment to an evaluation of the oral cavity could delay the treatment, aggravating the patient's health condition. The effective and constant presence and performance of a Dentist in the team will reduce these manifestations by acting in a preventive and curative way.

It is worth mentioning that is been proposedat the federal senate for deliberation in plenary, the House Bill 34/2013, which discusses the presence of Dentist in the hospital units, whether in the Intensive Care Units or inpatients (BRASIL,

2013). It is emphasized that although most patients undergoing anti-neoplastic therapy do so at the outpatient level, some are hospitalized to receive the medication because the infusion must be performed for more than 24 continuous hours (SIQUEIRA *et al*., 2013) and the value of the home infusion pump is not covered by the Unified Health System (SUS). The presence of a Dentist in a hospital scope will allow better and continuous evaluation of the oral cavity in the patients who are hospitalized, as well as the possibility to perform in an outpatient scope with the team, in those who perform outpatient treatment.

In this sample, only 1 patient with head and neck neoplasm reported the presence of mucositis, which is not consistent with the literature, which mentions this lesion as one of the main oral manifestations resulting from chemotherapy (ARAUJO *et al*., 2015). However, during the interview, 15 (34.8%) patients underwent vitamin supplementation. (GIACOMINI *et al*., 2010; HESPANHOL *et al*, 2010) show that vitamin supplementation assists in the maintenance of serum levels of vitamin B12, folic acid and iron, important nutrients for maintaining weight and preventing the onset of canker sores. Observe that no tests were performed to verify the vitamin and nutrient rates in these patients, but the low incidence of canker sores induces this association.

Although oral candidiasis is frequent in patients receiving antineoplastic treatment (AL-ANSARI *et al*. 2015), this study indicated the presence of only 3 patients. It's possible to consider three points for these results: Normal immunity or by the use of antifungal for the treatment of canker sores, which may have acted preventively (CARDOSO, *et al*., 2012). Although there is no mandatory protocol for dental care in cancer patients (AL-ANSARI *et al*. 2015), the physician's orientation in referring the patient to an evaluation of the oral cavity, as well as the patient's willingness to seek a Dentist before and during anti-neoplastic therapy should be taken in consideration.

Although this study does not show statistically significant data, it promotes a reflection on the relationship between chemotherapy and the oral cavity, especially on the question of the sensation of dry mouth and palate that cause problems of function, esthetics and phonation, as well as it suggests possible low incidence of other lesions, thus providing new researches.

CONCLUSION

Most chemotherapy patients presented knowledge about the effects of chemotherapy in the oral cavity, but few sought dental care prior to and during antineoplastic therapy.

The most frequent oral manifestations were xerostomy and dysgeusia. The oral manifestations diagnosed during the examination of the oral cavity evidenced the importance of pre and trans dental care of oncology patients treated with chemotherapy and the presence of a DS in the team. These data also reinforce the importance of the presence of a DS in the multidisciplinary team.

We suggest that further longitudinal studies evaluating the oral cavity situation of patients undergoing chemotherapy should be performed to further elucidate the relationship of this treatment with certain types of cancer and some specific oral manifestations.

Acknowledgment

To the nurse responsible for the Oncology sector of the Hospital NossaSenhora daConceição, Ariane Scotti de Almeida.

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How to cite this article:

Henrique Pereira Menegaz *et al*.2017, Oral Manifestations In Cancer Patients Treated With Antineoplastic Drugs. *Int J Recent Sci Res.* 8(10), pp. 20788-20792. DOI: http://dx.doi.org/10.24327/ijrsr.2017.0810.0960

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