Prevalence of Oral Manifestations in Cancer Patients Enrolled in a Home Care Program in the City of Pelotas-RS

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Prevalência de Manifestações Bucais em Pacientes com Câncer Assistidos em um Programa de Atenção Domiciliar na Cidade de Pelotas-RS

Prevalencia de Manifestaciones Orales en Pacientes com Câncer Asistidos en un Programa de Atención Domiciliaria en la Ciudad de Pelotas-RS

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ABSTRACT

Introduction: The municipality of Pelotas-RS has the Interdisciplinary Home Internment Program (PIDI) implemented at the Teaching Hospital of the Federal University of Pelotas with the presence of dental surgeons on its team. PIDI cares oncology patients in palliative care. **Objective:** To evaluate the prevalence of oral manifestations in patients enrolled in this program, the epidemiological characteristics of that population and to verify the relationship of the manifestations with the type of cancer and antineoplastic treatment received. **Method:** Retrospective cross-sectional study with secondary data collected from the dental records of patients consulted from April 2018 to September 2019. The Chi-square test was applied, with a 5% significance level (p≤0.05) attributed to significant results. **Results:** Oral manifestations were found 47 times in the 61 patients evaluated, with some having more than one occurrence. Patients who had primary cancer in the digestive system were the most affected by oral manifestations. The most prevalent oral manifestations were xerostomia (26.2%), followed by candidiasis (18%), mucositis (13.1%), dysphagia and dysgeusia that presented the same percentage (9.8%), no patient developed radiation caries. Xerostomia showed statistical significance (p≤0.05) in relation to the type of cancer. When correlating oral manifestations with the type of treatment received, they were not statistically significant. **Conclusion:** This study demonstrated a high prevalence of oral manifestations in the population investigated, reaffirming the importance of the dental surgeon in the palliative care multidisciplinary team.

Key words: Dentistry; Dentists; Palliative Care; Medical Oncology; Home Nursing.

RESUMO

Introdução: O município de Pelotas-RS dispõe do Programa de Internação Domiciliar Interdisciplinar (PIDI) implantado no Hospital Escola da Universidade Federal de Pelotas com a presença de cirurgiões-dentistas em sua equipe. O PIDI atende a pacientes oncológicos em cuidados paliativos. **Objetivo:** Avaliar a prevalência de manifestações bucais em pacientes assistidos por esse programa, as características epidemiológicas da referida população e verificar a associação das manifestações com o tipo de câncer e tratamento antineoplásico recebido. **Método:** Estudo transversal retrospectivo, com dados secundários coletados dos prontuários odontológicos de pacientes atendidos no período de abril de 2018 a setembro de 2019. O teste qui-quadrado foi aplicado com um nível de 5% de significância (p≤0,05) atribuído aos resultados significativos. **Resultados:** As manifestações bucais foram encontradas 47 vezes nos 61 pacientes avaliados, sendo que alguns apresentaram mais de uma ocorrência. Pacientes que apresentavam câncer primário no sistema digestivo foram os mais acometidos por manifestações bucais. As mais prevalentes foram xerostomia (26,2%); candidíase (18%); mucosite (13,1%); disfagia e disgeusia, que apresentaram o mesmo percentual (9,8%); nenhum paciente desenvolveu cárie de radiação. A xerostomia mostrou significância estatística (p≤0,05) na associação com o tipo de câncer. Ao correlacionar as manifestações bucais com o tipo de tratamento recebido, estas não apresentaram significância estatística. **Conclusão:** Este estudo demonstrou alta prevalência de manifestações bucais na população estudada, reafirmando a importância do cirurgião-dentista na equipe multiprofissional de cuidados paliativos.

Palavras-chave: Odontologia; Odontólogos; Cuidados Paliativos; Oncologia; Assistência Domiciliar.

RESUMEN

Introducción: El municipio de Pelotas-RS cuenta con el Programa Interdisciplinario de Internación Domiciliaria (PIDI) implementado en el Hospital Docente de la Universidad Federal de Pelotas con la presencia de cirujanos dentistas en su equipo. PIDI atiende a pacientes oncológicos en cuidados paliativos. **Objetivo:** Evaluar la prevalencia de manifestaciones bucales en pacientes atendidos por este programa, las características epidemiológicas de esa población y verificar la relación de las manifestaciones con el tipo de cáncer y tratamiento antineoplásico recibido. **Método:** Estudio transversal retrospectivo con datos secundarios recolectados de los registros dentales de los pacientes atendidos desde abril de 2018 a septiembre de 2019. Se aplicó la prueba de chi-cuadrado, con un nivel de significancia del 5% (p≤0,05) atribuido a resultados significativos. **Resultados:** Las manifestaciones orales se encontraron 47 veces en los 61 pacientes evaluados, algunos con más de una ocurrencia. Los pacientes que tenían cáncer primario en el sistema digestivo fueron los más afectados por las manifestaciones orales. Las más prevalentes fueron xerostomía (26,2%); candidiasis (18%); mucositis (13,1%); disfagia y disgeusia, que presentaron el mismo porcentaje (9,8%); ningún paciente desarrolló caries de radiación. La xerostomía mostró significancia estadística (p≤0,05) en relación con el tipo de cáncer. Al correlacionar las manifestaciones orales con el tipo de tratamiento recibido, no resultaron estadísticamente significativas. **Conclusión:** Este estudio demostró una alta prevalencia de manifestaciones bucales en la población estudiada, reafirmando la importancia del cirujano dentista en el equipo multidisciplinario de cuidados paliativos.

Palabras clave: Odontología; Odontólogos; Cuidados Paliativos; Oncología Médica; Atención Domiciliaria de Salud.

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INTRODUCTION

The estimate of new cases of cancer in Brazil for the triennium 2020-2022 is 625 thousand for each year, more than 80% of them registered in the South and Southeast Regions[1]. This perspective of increase of incidence reflects the growth of the aged population and changes of the prevalence and distribution of the main risk factors and various of them connected to the socioeconomic development[2].

Palliative care (PC) in dentistry can be defined as the management of patients with advanced or progressive disease whose buccal cavity can be compromised by the basal disease, systemic disease or its treatment and is the focus of the care to improve quality of life[3].

The municipality of Pelotas created the Interdisciplinary Home Internment Program (PIDI) in 2005 in the School Hospital of the Federal University of Pelotas (HE/UFpel). The Program counts with reference multi-professional teams formed by one physician and one nurse who perform two daily visits and one support team who conducts weekly visits with nutritionists, psychologists, occupational therapists, social workers, physiotherapists and dental-surgeons[4].

Buccal discomforts are among the most common symptoms of patients in PC and they increase as the basal disease progresses, showing the buccal cavity is generally the first site of discomfort and loss of function[5,6]. With the progression, terminally ill oncologic patients can experience some alterations as candidiasis, mucositis, xerostomia, dysphagia, dysgeusia and radiation caries[3,5,7].

Candidiasis can affect from 10% to 57% of the patients with cancer[3,5]. Mucositis is present in most of the patients undergoing head and neck radiotherapy, in 75% to 100% of the individuals who submit to hematopoietic stem-cells transplantation and in 40% of the patients who are submitted to specific chemotherapic protocols[8-12]. The prevalence of xerostomia in the general population varies from 5.5% and may reach 46%, with variations according to gender, age and other associated factors[13]. Some studies with terminally ill patients with cancer indicate that this prevalence can achieve until 78% or 81%[5,7]. Previously in antineoplastic treatments, the prevalence of dysphagia, defined as difficulty of swallowing food for deglutition can be of 21% and grows to 28% in the end of the treatments[14]. Dysgeusia, characterized as alteration of the taste perception can be found in 25% to 50% of the oncologic patients in PC[15]. And for those who receive radiotherapy treatment in head and neck, the incidence of post-radiation caries is 29% and increases to 37% of the cases after two years of the end of the treatment[16]. Buccal manifestations in patients with cancer have been the subject of several studies, however, it is important to investigate the prevalence of these manifestations in patients with cancer in palliative care treated in home care to contribute for better understanding of this theme and planning of home care services for this population.

The objective of the present study was to evaluate the prevalence of the main buccal manifestations in patients with cancer in PC admitted through PIDI of HE/UFPel; describe the characteristics of the population according to gender and age and verify the possible association among buccal alterations, the type of cancer and between the presentation of buccal alterations and the antineoplastic treatment received.

METHOD

Cross-sectional epidemiologic study with secondary data was conducted to evaluate the prevalence of oral manifestations in patients with cancer treated through the PIDI of the School Hospital of UFPel. Some eligibility criteria need to be complied with as acute clinical profile, acute chronic, bed-ridden, chronic complex to be admitted in home care, and those who must receive PC at least weekly for pain and suffering control resulting from the oncologic disease and its treatments. The periods of admission can be transitory, short, long or definitive[17].

The study sample consisted of 61 patients that the dentistry team treated while data were being collected from April 2018 to September 2019.

The sociodemographic and clinical history data were extracted from unblinded PIDI charts, after previous training of the author. The charts contained data on clinical, psychological, dentistry, spiritual and social aspects that the multi-professional team completed. A specific chart used in the service registered buccal health status with dentistry anamnesis and clinical exam as presence of pain in the buccal cavity, presence and aspect of oral lesions, increase of the volume in the head and neck region, dysphagia, dysgeusia, xerostomia and antineoplastic treatment related buccal manifestations and necessity of odontology treatment. The patients of the program needing treatment are consulted at home or referred to clinical consultations in the odontology service of the Teaching Hospital HE/UFPel, as needed.

According to data of the literature, the variables analyzed in this study were selected for being the most prevalent buccal adverse symptoms in oncologic patients in PC[3,5,7], as oral candidiasis, mucositis, xerostomia, dysphagia, dysgeusia and radiation caries.

Cancer location in patients admitted at the program were fairly diversified: breast, prostate, mouth, larynx,

glottis, amygdala, stomach, duodenum, esophagus, rectum, liver, bile ducts, pancreas, lungs, uterus, vulva, endometrium, melanoma, bladder, testicle, kidneys, mediastinum among others. In order to analyze the data and reduce the scope, the types of cancer were divided in great groups: head and neck, breast, prostate, digestive system, respiratory system, female reproductive system and others.

The data obtained were exported to Excel spreadsheet (Microsoft, version 15.0), Albuquerque, New Mexico, USA and evaluated with the Statistical Package for the Social Sciences (SPSS), Chicago, IL, USA, version 17.0.

Chi-square test was applied with significance level of 5% ($p \leq 0.05$) attributed to significant results to verify the association among buccal manifestations and type of cancer diagnosed in the patients. It was used too to observe the association of buccal adverse events with the type of antineoplastic treatment received. The epidemiologic characteristics of the population were described.

The Institutional Review Board of the Medical College of the Federal University of Pelotas approved the study, report number 3.372.405.

RESULTS

The sample consisted of 61 patients, 27 (44.3%) females and 34 (55.7%) males. The age ranged between 27 and 89 years, median of 64 years, mean of 63.9 years and standard deviation of 14.4 years.

Eight patients (13%) received radiotherapeutic treatment in the head and neck region and for 37 (60.7%), the therapeutic conduct was chemotherapy by infusion. In total, seven (11.5%) patients received both chemotherapy and radiotherapy in head and neck.

Buccal manifestations were found 47 times in 35 patients (57.3%), the diagnosis of two of these variables was confirmed for 11 patients (18%). Table 1 shows the prevalence of each buccal manifestation.

The most prevalent site in the sample investigated was the digestive system, with 22 individuals (36.1%) followed by head and neck and respiratory systems in seven individuals (11.5%) (Table 2).

Table 1. Prevalence of buccal manifestations

Buccal manifestations	n	%
Candidiasis	11	18
Mucositis	8	13.1
Xerostomia	16	26.2
Dysphagia	6	9.8
Dysgeusia	6	9.8
Radiation caries	0	0

Table 2. Distribution of the prevalence of patients per groups of cancer

Location of the cancer	n	%
Head and neck	7	11.5
Breast	5	8.2
Prostate	5	8.2
Digestive System	22	36.1
Endocrine System	3	4.9
Female reproductive system	6	9.8
Respiratory System	7	11.5
Others	5	8.2
No information	1	1.6
TOTAL	**61**	**100.0**

Cancer was detected for most of the affected patients with buccal manifestation in the following groups: digestive system, head and neck and prostate, the last two with the same number of manifestations. The distribution of the manifestations in the groups is shown in Table 3.

Only xerostomia was significant with level of significance of 5% (Table 3) ($p - 0.030$) while relating buccal manifestations to the cancer site.

Each buccal manifestation was tested statistically through the chi-square test with the objective of analyzing the association of radiotherapeutic and chemotherapic treatment in the head and neck. No significant association between antineoplastic treatment and buccal manifestations (at 5% level) was found in this study.

DISCUSSION

Patients in PC with the digestive system as the most prevalent site were evaluated in the current study. According to estimate of the National Cancer Institute José Alencar Gomes da Silva (INCA)[1] for 2020, excepting non-melanoma skin cancer, prostate and breast cancers will be the most frequent followed by colon and rectum, both in the digestive system. These cancers have likelihood of cure of 75% of the cases, the relative 5-year survival rate is 90.8% and 99.5% respectively, which can explain better the biggest prevalence of cancer of the digestive system in the population investigated as the sample consisted of patients in PC with advanced disease[18].

Adverse effects appear as the oncologic disease advances and are related to antineoplastic treatments and systemic conditions. Xerostomia is the most typical manifestation in patients in PC and can be associated with dehydration, metabolic imbalance, general condition of the patient, antineoplastic treatments, mainly radiotherapy of head

Table 3. Buccal manifestation distributed according to the location of the cancer and result of the statistical association

	Buccal Manifestation														
	Xerostomia			Dysphagia			Dysgeusia			Candidiasis			Mucositis		
Location of the cancer	n	%	p-value	n	%	p-value	n	%	p-value	n	%	p-value	n	%	p-value
Head and neck	3	18.8		1	16.7		1	16.7		1	9.1		0	0.0	
Breast	2	12.5		0	0.0		0	0.0		0	0.0		0	0.0	
Prostate	2	12.5		1	16.7		1	16.7		1	9.1		1	12.5	
Digestive System	5	31.3		2	33.3		2	33.3		5	45.5		6	75.0	
Endocrine System	0	0.0	**0.030***	1	16.7	0.108	0	0.0	0.140	2	18.2	0.274	0	0.0	0.238
Female reproductive system	2	12.5		0	0.0		1	16.7		0	0.0		0	0.0	
Respiratory System	1	6.3		1	16.7		1	16.7		1	9.1		1	12.5	
Others	0	0.0		0	0.0		0	0.0		1	9.1		0	0.0	
No information	1	6.3		0	0.0		0	0.0		0	0.0		0	0.0	
TOTAL	**16**	**100.0**		**6**	**100.0**		**6**	**100.0**		**11**	**100.0**		**8**	**100.0**	

Caption: *Level of significance of 5%.

and neck and drugs as most of the them are subject to polypharmacy and use drugs whose side effect is xerostomia[3,5], making buccal manifestation more prevalent in the present study (26.2%), corroborating the data of the literature[13,19], in addition of the statistical association with the cancer site.

Radiation caries has prevalence of approximately 24% in patients who submit to radiotherapy of head and neck and 21% for those who submit to this treatment associated with chemotherapy[16]. In a study conducted in Sweden, 126 patients with head and neck cancer were followed up for ten years. Prior to the radiotherapeutic treatment, 23 teeth of these individuals needed restorative treatment and after the radiation, this number increased to 281 teeth in 67 patients[20]. No patient presented radiation caries in the present study, which might have occurred because of the limited time to observe the lesion and the sample size since only eight patients have submitted to radiotherapy in the head and neck region.

The buccal manifestations dysphagia, dysgeusia, candidiasis and mucositis did not hold association with the site of the primary cancer. Dysphagia was present in 9.8% of the sample of this study, some authors[14] demonstrated higher incidence of nearly 21% at the cancer diagnosis and 28% after the antineoplastic treatment. Before the treatment, dysphagia was associated with larynx and hypopharynx tumors while dysphagia after surgery and/or radiotherapy were related to mouth and oropharynx neoplasms.

Dysgeusia is multifactorial[21-24], one of these factors are the side effects of the oncologic treatment; however, in this study it was not possible to demonstrate statistical relations of this buccal alteration with radiotherapy of head and neck and chemotherapy.

In despite of this, the literature showed its prevalence in 56.3% of the patients treated with chemotherapy, 66.5% treated with radiotherapy and may reach 76% when associated with these two antineoplastic modalities[25]. On the other hand, in this study, 9.8% of the terminally ill patients had this manifestation. For the patients in PIDI's PC, some had already submitted to chemotherapy treatment before the admission to the program, which may have justified the non-association between dysgeusia and antineoplastic treatment. Another study noticed the match of dysgeusia with chemotherapy, but all the patients were in chemotherapy treatment in the moment of the evaluation[26].

A percent of 18% of oral candidiasis was found in this study, which corroborates the estimate of 10% to 40% encountered in other studies[27,28], and it can reach 57%[3]. In a study[29] where 54 patients were evaluated in a Denmark hospice, 48% had clinical symptoms of oropharynx candidiasis treated inappropriately when admitted at the hospice, which was confirmed with the presence of the hypha form in the microscopic exam. This strengthens the fact that when a skilled professional does not treat this infection appropriately the microorganisms can have acquired or intrinsic resistance.

Mucositis is a painful inflammation, frequently ulcerated in the digestive tract, can be present in 100% of the patients receiving radiotherapy of head and neck and is related to the chemotherapeutic protocols adopted[8-12,30]. Quite often, these data are connected to patients with cancer, not specifying those in PC. This study revealed prevalence of 13.1% of mucositis; in studies[7,31] where

patients in PC were investigated, in home care, hospice or PC unit, the values were between 10.4% and 22.3%. In the study where large manifestations were found[31] the primary location of the most prevalent cancer was the digestive system, like what was found in this article. No significant relations between mucositis and head and neck group in the present investigation were discovered, since it was not present in the patients with head and neck cancer evaluated, the highest prevalence was in patients with cancer of the digestive system.

The absence of mucositis in some patients may be explained because they were included in the program after having concluded their antineoplastic treatments, suggesting repair of the buccal lesions. Some chemotherapeutic protocols for colon and rectum cancers, for instance, 5-fluoracil or capecitabine can present until 50% of the cases of this buccal manifestation during the treatment[32].

The heterogeneity of the perspective of the primary location of the neoplasm and the type of treatment can demand an enlargement of the sample to obtain the association of buccal manifestations and the type of antineoplastic received. The present study has internal validity and demonstrated high prevalence of buccal manifestations in the population investigated, reaffirming the importance of the dental surgeon in the PC multi-disciplinary team.

CONCLUSION

The complexity to provide care to a PC patient requires a wide knowledge of the signs and symptoms they suffer in the end of life and practice in a multi-professional perspective.

Based in this study, it was possible to conclude that most of the patients with cancer in PC the dentistry team evaluated were males (55.7%), with mean age of 63.9 years with primary diagnosis in the digestive system. Xerostomia was the buccal manifestation most prevalent, mucositis was higher in the group of patients with oncologic lesions in the digestive system as result of chemotherapy protocols. The buccal manifestations dysphagia, dysgeusia, candidiasis and mucositis did not hold association with the type of treatment and primary location of the tumor. Xerostomia was the manifestation which presented statistically significant association with the site of the cancer.

This study attempted to contribute for the knowledge of the main buccal manifestations in patients in PC treated at home to improve care and quality of life.

CONTRIBUTIONS

All the authors contributed for the study conception and/or design, collection, analysis and interpretation of the data, wording, critical review and approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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