

Epidemiological Profile of Patients with Head and Neck Cancer at a Cancer Center in Southern Brazil

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Perfil Epidemiológico dos Pacientes com Câncer de Cabeça e Pescoço em um Centro Oncológico no Sul do Brasil

Perfil Epidemiológico de Pacientes con Cáncer de Cabeza y Cuello en un Centro de Oncología en el Sur de Brasil

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Abstract

Introduction: Head and neck cancer has increased significantly in the last decade. **Objective:** To determine the epidemiological profile in patients with head and neck cancer treated at an oncological referral center in Brazil Southern region from January 2013 to December 2018. **Method:** Descriptive and retrospective study carried out at CEPON (Oncology Research Center). **Results:** Preliminary data were obtained from 133 patients. Male gender was the most prevalent (65.4%), with mean age above 50 years, low education (40%), low income (77.3%), many of them were smokers (72%) and alcoholics (58.1%). The oral cavity region (26.3%) was the most prevalent site, the most performed surgery was total thyroidectomy (19.4%) and the most observed staging was T2 (30.8%) and N2 (41.1%). Post-radiotherapy and post-chemotherapy complications as radiodermatitis (82.7%) and nausea (81%), respectively, were found. Scarring fibrosis was more frequent after surgery (18.2%) and were evaluated in the late postoperative period. **Conclusion:** Characterizing the profile of patients with head and neck cancer allows to know the several affections resulting from the treatment to ensure better quality and focus of rehabilitation actions.

Key words: Head and Neck Neoplasms; Health Profile; Medical Oncology.

Resumo

Introdução: O câncer de cabeça e pescoço aumentou significativamente na última década. **Objetivo:** Determinar o perfil epidemiológico dos pacientes com câncer de cabeça e pescoço atendidos em um Centro Oncológico de referência no Sul do Brasil no período de janeiro de 2013 a dezembro de 2018. **Método:** Estudo de caráter descritivo e retrospectivo realizado no Centro de Pesquisas Oncológicas (Cepon). **Resultados:** Foram obtidos dados preliminares de 133 pacientes. O gênero masculino foi o mais prevalente (65,4%), com média de idade acima dos 50 anos, baixa escolaridade (40%), baixa renda (77,3%), sendo sua grande maioria tabagistas (72%) e etilistas (58,1%). A região de cavidade oral (26,3%) foi o sítio mais prevalente, a cirurgia mais realizada foi a tireoidectomia total (19,4%) e o estadiamento mais observado foi T2 (30,8%) N2 (41,1%). Foram encontradas complicações pós-radioterapia como a radiodermite (82,7%) e, pós-quimioterapia, náuseas (81%). As fibroses cicatriciais foram mais frequentes após a cirurgia (18,2%), sendo avaliadas no pós-operatório tardio. **Conclusão:** Caracterizar o perfil dos pacientes com câncer de cabeça e pescoço permite conhecer os diversos acometimentos advindos do tratamento e possibilita, dessa maneira, maior qualidade e direcionamento das ações de reabilitação.

Palavras-chave: Neoplasias de Cabeça e Pescoço; Perfil de Saúde; Oncologia.

Resumen

Introducción: El cáncer de cabeza y cuello ha aumentado significativamente en la última década. **Objetivo:** Determinar el perfil epidemiológico en pacientes con cáncer de cabeza y cuello tratados en un centro de referencia en el sur de Brasil desde enero de 2013 hasta diciembre de 2018. **Método:** Estudio descriptivo y retrospectivo realizado en el Centro de Investigación Oncológica (Cepon). **Resultados:** Se obtuvieron datos preliminares de 133 pacientes. El sexo masculino fue el más prevalente (65.4%), con una edad promedio de más de 50 años, baja escolaridad (40%), bajos ingresos (77.3%), la mayoría de ellos fumadores (72%) y alcohólicos (58.1%). La región de la cavidad oral (26.3%) fue el sitio más prevalente, la cirugía más realizada fue la tiroidectomía total (19.4%) y la estadificación más observada fue T2 (30.8%) y N2 (41.1%). Se encontraron complicaciones posteriores a la radioterapia, como radiodermatitis (82.7%) y después de la quimioterapia, náuseas (81%). La fibrosis cicatricial fue más frecuente después de la cirugía (18.2%) y se evaluó en el postoperatorio tardío. **Conclusión:** La caracterización del perfil de los pacientes con cáncer de cabeza y cuello nos permite conocer las diversas afecciones que surgen del tratamiento y, por lo tanto, permitir una mayor calidad y dirección de las acciones de rehabilitación.

Palabras clave: Neoplasias de Cabeza y Cuello; Perfil de Salud. Oncología Médica.

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INTRODUCTION

Head and neck cancer is a collective term used to define neoplasms that affect the upper aerodigestive tract, where the regions of the oral cavity, pharynx, larynx and thyroid are included. Approximately 40% of the head and neck cancers occur in the oral cavity (mouth floor, tongue, base of the tongue, hard palate and lips); 15% in the pharynx (oropharynx, hypopharynx and nasopharynx); 25% in the larynx and the rest in the salivary glands and thyroid^{1,2}.

The incidence of cancer in the oral cavity increased during the last decade, mainly in the base of the tongue and amygdala, essentially in individuals under 45 years old because of the high prevalence of the human papillomavirus (HPV) that is been considered a risk factor increasingly important for these types of cancers. This increase justifies also by the frequent practice of oral sex and elevated number of sexual partners^{3,4}.

In the head and neck cancer, the genetic and environmental risk factors contribute for its etiology as alcohol and tobacco use, that are the risk factors more related to the affection of the upper aerodigestive tract^{4,5}. In the case of the thyroid cancer, several are the causes alleged as risk factors, as exposure to radiation, hormone conditions, obesity, cancer family history and intake of iodate food⁶.

The treatment of these types of cancer can include surgical resection, chemotherapy, radiotherapy⁷, hormone therapy or the combinations of more than one form of treatment⁸, causing alterations in the functionality and quality of life⁹. Due to this motive, the attention to the patient with head and neck cancer must be as a multidisciplinary approach with team formed by physicians, dentist-surgeons, physiotherapists, nurses, phonoaudiologists, among other professionals¹⁰.

The modalities of treatment for these patients can bring damages to the quality of life⁸, generating changes as mucositis (inflammations of oral mucosa), xerostomia (dry mouth), fatigue and radiodermatitis (skin alterations) that cause damages to mastication, deglutition and even, the speech⁹.

These alterations cause, most of the times, weight loss and malnutrition because of the morbidities created by the treatment, provoking an enormous functional decline⁹. Among the alterations and functional declines caused by the treatments of head and neck cancer, there is still the lymphedema, the dropped shoulder syndrome, facial paralysis, trismus (reduction of the buccal opening) and paralysis of the vocal chords^{7,11}.

The head and neck cancer is induced by a combination of factors, including the Regions¹² there is a discrepancy

observed in the epidemiologic data of the disease published in the several regions of Brazil, which can be because of the lack of data records¹², demonstrating that there are few data of the disease in the literature and that said figures are underestimated¹³. Epidemiologic studies are essential for the information about health and for health professionals, allowing the beginning of actions of public health, ensuring planning and specific measures of prevention, mainly for the population studied, and the delay in the diagnosis is the main cause of ill prognosis¹³⁻¹⁵.

Therefore, it is a priority the search for information about the profile of the patients with head and neck cancer for better assistance, elaboration of prevention strategies, better knowledge about the main morbidities, help for early diagnosis and rehabilitation still in early stages, improving the prognosis of this population. Consequently, the present study had as objective to determine the profile of patients with head and neck cancer attended at an Oncologic Center of reference in Brazil's south region.

METHOD

Descriptive and retrospective study conducted at the Center of Oncologic Researches (CEPON) in the city of Florianópolis, Santa Catarina, Brazil, whose target population were oncologic patients of head and neck attended at this institution from January 2013 to December 2018.

It was conducted a Census with all the charts filed of the patients with diagnosis of head and neck neoplasm attended at the Physiotherapy Service older than 18 years in the period studied. Charts with incomplete data were not excluded.

It was utilized the electronic chart of CEPON of Santa Catarina to collect the data. The institution utilizes a hospital management software where all the information of the patient are stored as sociodemographic data as well as information about the disease, clinical, surgical and physiotherapy treatment.

An evaluation card created by the investigators was used to transcribe the data collected from the electronic charts: sociodemographic variables (age, city, gender, ethnicity, education, occupation, marital status, family income and social class), life style, clinical history/diagnosis, clinical background, type of cancer of head and neck, comorbidities, treatment performed (surgery, chemotherapy, radiotherapy) and complications generated by the treatment.

The tumors are classified according to the staging system recommended by the Union for International Cancer Control (UICC) called system TNM of Classification of Malignant Tumors¹².

The data of the present study were collected only upon approval by the Institutional Review Board, report number 3,215,586, in the facilities of CEPON of Santa Catarina from January to April 2019.

The data were analyzed with the program Statistical Package for the Social Sciences (SPSS®) version 20.0. The descriptive analysis of the continuous variables was done with means, medians, and standard deviation. The categorical variables were analyzed through absolute and relative frequencies.

RESULTS

Preliminary data of charts were obtained from 133 patients attended between 2013 to 2018. In relation to gender, 65.4% (n=87) were males, mean age of 57.9 ± 12.5 years, mostly Caucasian (94, n=125). Of the total, the majority, 40% (n=50), did not complete elementary school and performed manual work, family income classified as low (77.3%, 58 individuals). Great part of the individuals was tobacco-addicted (72%, n=85) and alcohol users (58.1%, n=61), with mean time of exposure of 34 and 33 years respectively. Many patients presented systemic arterial hypertension, *diabetes mellitus* or both comorbidities. Other sociodemographic characteristics can be observed in Table 1.

The data presented in Table 2 described the clinical and surgical characteristics of the sample containing the staging of the tumors.

As for the type of primary tumor, it was observed greater representativeness in the oral cavity (26.3%, n=35), thyroid (25.5%, n=34) and oropharynx (24.0%, n = 32), with cervical region as the site of high prevalence of metastasis (42.3%, n=11) (Table 3).

Radiotherapy was the most adopted method in 76.7% (n=102) of the sample in its majority associated to surgical treatment (83.5%, n=111). The predominant surgical treatment was total thyroidectomy (19.4%, n=21) and some patients needed complementation with radioiodine therapy (12%, n=16). Only 18 patients needed a new surgery during the treatment, the most common was glossectomy (16.7%, n=3) (Table 4).

Several of the physical complications presented are related to the clinical and surgical treatments. After radiotherapy, it was observed complexities related to the treatment with greater incidence of radiodermatitis (82.7%, n=81), followed by odynophagia (69.4%, n=68) and mucositis (68.4%, n=67). After chemotherapy, the main complaints and complications presented by the patients were nausea (81%, n=34) and vomiting (52.4%, n=22) (Table 3). After surgery, during the post-operative follow-up, it was observed with great frequency fibrosis in the local of the surgical incision (18.2%, n=10) (Table 5).

Table 1. Sociodemographic characteristics of patients with head and neck cancer (n=133)

Variable	N	%
Age*	57.98 ± 12.54	
Gender	N	%
Male	87	65.4
Female	46	34.6
Total	133	100.0
Skin Color	N	%
Caucasian	125	94.0
Non-Caucasian	8	6.0
Total	133	100.0
Education	N	%
Illiterate	5	4.0
Incomplete Elementary School	50	40.0
Complete Elementary School	10	8.0
Incomplete High School	8	6.4
Complete High School	30	24.0
Incomplete University	4	3.2
Complete University	18	14.4
Total	125	100.0
Not Informed	8	6.0
Comorbidities	N	%
None	30	27.3
Systemic arterial hypertension	34	30.9
Hypothyroidism	8	7.3
Psoriasis	3	2.7
<i>Diabetes mellitus</i>	13	11.8
Dyslipidemia	5	4.5
Other	17	15.4
Total	110	100.0
Not informed	23	17.2
Marital Status	N	%
Single	27	21.1
Married	72	56.3
Widower	10	7.8
Stable Union	6	4.7
Divorced	13	10.2
Total	128	100.0
Not Informed	5	3.8
Family Income	N	%
1 to 3 minimum wages	58	77.3
3 to 5 minimum wages	13	17.3
More than 5 minimum wages	4	5.3
Total	75	100.0
Not informed	58	43.6

Captions: N=number of participants; %= relative frequency; * Data expressed in mean ± standard deviation.

Table 2. Clinical characteristics of cancer staging (n=133)

Staging T	N	%
T0	2	1.9
T1	26	24.3
T2	33	30.8
T3	22	20.6
T4	18	16.8
TX	6	5.6
Total	107	100.0
Not informed	26	19.5
Staging N	N	%
N0	32	29.9
N1	16	15.0
N2	44	41.1
N3	8	7.5
NX	7	6.5
Total	107	100.0
Not informed	26	19.5
Staging M	N	%
0	56	60.9
1	3	3.3
MX	33	35.9
Total	92	100.0
Not informed	41	30.8

Captions: N=number of participants; % = relative frequency.

Table 3. Clinical characteristics of the patients with head and neck cancer (n=133)

Type of cancer	N	%
Oral cavity	35	26.32
Thyroid	34	25.56
Oropharynx	32	24.06
Larynx	13	9.77
Nasopharynx	7	5.26
Hypopharynx	5	3.76
Other	7	5.25
Total	133	100.0
Metastasis	N	%
Yes	25	18.8
No	108	81.2
Total	133	100.0
Local of metastasis	N	%
Cervical	11	42.3
Pulmonary	3	11.5
Salivary Glands	2	7.7
Other	10	38.5
Total	26	100.0
Not informed	107	80.5

Captions: N=number of participants; % = relative frequency.

Table 4. Characteristics of the surgical and clinical treatment (n=133)

Submitted to Radiotherapy	N	%
Yes	102	76.7
No	31	23.3
Total	133	100.0
Place of incidence	N	%
Tumor bed and cervical drainage	9	15.8
Cervical region	7	12.3
Cervicofacial and cervical drainage	7	12.3
Cervicofacial	4	7.0
Excision bed and cervical drainage	4	7.0
Primary lesion and elective drainage	3	5.3
Other	23	40.3
Total	57	100.0
Not informed	76	57.1
Submitted to chemotherapy	N	%
Yes	71	56.8
No	54	43.2
Total	125	100.0
Not informed	8	6.0
Submitted to radioiodine therapy	N	%
Yes	16	12.0
No	117	88.0
Total	133	100.0
Submitted to surgery	N	%
Yes	111	83.5
No	22	16.5
Total	133	100.0

Captions: N=number of participants; % = relative frequency.

DISCUSSION

After the results of the study, it was verified that head and neck cancer is still very incident in the population, characterizing the disease as a health public problem.

In the study of Casati et al.¹³, this type of cancer had already demonstrated as prevalent in low socioeconomic countries and associated to high mortality¹³, with progressive growth, in despite of the underestimation of the data assigned because of flaws in data registration^{13,14}.

The present study concurred with the data of the Brazilian literature in relation to clinical and epidemiological aspects^{13,14,16}. As for the predominance of head and neck neoplasm, male were more affected as described by some authors that verified also greater incidence in males, corroborating the results of this study¹³⁻¹⁷.

Table 5. Main complications presented after clinical and surgical treatment (n=133)

Complications of radiotherapy	N	%
Radiodermatitis	81	82.7
Xerostomia	55	56.1
Odynophagia	68	69.4
Dysphagia	56	57.1
Dysgeusia	24	24.5
Mucositis	67	68.4
Candidiasis pseudomembranous	13	13.3
Nausea	11	11.2
Trismus	8	8.2
Vomiting	6	6.1
Complications of chemotherapy	N	%
Nausea	34	81.0
Vomiting	22	52.4
Malaise	6	14.3
Asthenia	9	21.4
Alopecia	4	9.5
Epigastric	3	7.1
Headache	4	9.5
Change of taste	3	7.1
Neuropathy	3	7.3
Complications of the surgical treatment	Frequency	%
Fibrosis	10	18.2
Trismus	4	7.3
Lesion of the accessory nerve	2	3.6
Seroma	2	3.6
Left vocal fold paralysis + fibrosis	2	3.6
Paresis of the left mandibular nerve	2	3.6
Edema	2	3.6
Dysphonia	2	3.6
Other	29	52.9
Total	55	100.0
Not informed	78	58.6

Captions: N=number of participants; %=relative frequency.

In relation to the age of the patients, the mean was 57.9 years as also verified by Sousa et al.¹⁴, whose mean age of the patients was 60.6 years, with more predominance also of males. In the study conducted by Rocha et al.¹⁶, the mean age was similar, 59,78 (± 12.49) years. The age of

the patients reported in the present study concur with the studies performed about head and neck cancer, showing that the number occurs in great quantity after the fifth decade of life^{14,17-21}. For the most relevant comorbidities in the present study, it was observed an elevated number of hypertensive and diabetic patients as also seen in the study of Pereira et al.²⁰, where the greatest comorbidity of the patients was arterial hypertension.

As verified and reported in the results presented, great part of the patients were smokers and alcohol users. The high use of tobacco and alcohol are indicated as one of the main causes of head and neck cancer²², being males more exposed to alcohol than females¹⁹. Some authors report that the continuation of tobacco use after the beginning of the treatment increases the risk of relapse, as also of a second primary tumor. Of the patients treated with this disease, around 20% to 50% continue with the smoking habits even after the end of the treatment²³.

Silveira et al.¹⁸ reported that, of the 380 patients analyzed in their studies, the majority abandoned the smoking habit within the five years before the study was performed, great part of them were former smokers. In the study of Galbiatti et al.²⁴, it was verified that, in addition to alcohol and tobacco, other factors also influenced the development of this disease, some of them, the HPV infection, infectious agents, exposure to carcinogenic agents, ultraviolet light and professional activity. According to the authors, to interrupt the habit of smoking and alcohol use, avoid exposure to environmental carcinogenic agents, submit to HPV tests and control the stress are some measures to prevent or delay the development of cancer²⁴.

The present study presents more predominance of primary tumor sites in the oral cavity as also described in great part of the literature^{2,13,18,23,25}. Other studies show predominance in the larynx followed by oral cavity, what differs from the findings of this study^{14,16}, where 30.8% of the patients represent the category T2 (tumors between 2 and 4cm)²⁶, 41.1% identified a large number of patients with metastasis in the lymph node chain and 18.8% presented metastasis, showing an advanced grade of the disease when diagnosed and 18.8% presented metastasis, showing advanced grade of the disease when diagnosed as observed also in the literature^{13,18}.

In the study of Melo et al.¹⁹, staging TNM presented more prevalence in T4 (tumors that invade adjacent structures)²⁶ and 38.3% presented lymph node metastasis. This type of metastasis is common among patients with head and neck cancer, occurring with great incidence. When the disease is diagnosed in the initial phase, being smaller than 2 cm of length and without lymph node compromise, surgical treatment certainly will be sufficient to cure the patient, but the late diagnosis ensures the

increase of the local length, with or without lymph node invasion, altering the staging, needing complementary treatment through radiotherapy, chemotherapy or both²⁷.

In what concerns the clinical and surgical treatment, in this study, great part of the patients submitted to radiotherapy together with surgical treatment as described in the literature that brings the association of both treatments in most of the cases²⁵. Casati et al.¹³ corroborate this study, quoting that the treatment of head and neck cancer is complex and in more advanced lesions is mainly surgical and normally associated to radiotherapy, chemotherapy or both. Alvarenga et al.²⁵ quote in their findings that the indications for radiotherapy or surgery target the tumors classified as T1 and T2 and the majority of tumors T3 and T4 needs multimodal treatment, where usually the surgery is performed followed by adjuvant radiotherapy.

As for the treatment, the use of surgery, radiotherapy, chemotherapy or treatment associated will depend of the resectability and location of the tumor; the main option of the treatment for primary disease is surgery. The treatment of chemotherapy and radiotherapy applied in high doses is a viable approach and ensures extended survival to the patients, which can lead to side effects, interfering in the quality of life and affecting functions as mastication, deglutition and even speech^{9,24}. Therefore as verified in this study, the surgical procedure was the most performed treatment, being normally associated to radiotherapy, chemotherapy or both.

Several are the complications presented by the clinical and surgical treatments observed in the present study where radiotherapy generated important alterations in great part of the patients. In the studies of Campos and Leite²⁸ and Rodrigues²⁹, common oral complications were verified, beginning generally during or after radiotherapy, being some of them mucositis, caries, dysgeusia, secondary infections, osteoradionecrosis and trismus. Some of the complications presented by the authors concur with the results, however, in the present study appeared with small incidence, not being the most relevant. Said complications vary according to the area irradiated, total dose, quantity of radiation administered and clinical conditions of the patient³⁰.

In the study of Sawada et al.³¹, the results encountered by the authors are similar to the observed in this article and bring reports from patients who showed an elevated number of complaints generated post radiotherapy treatment, among them, skin itching, dry mouth, difficulty or pain in deglutition and change of taste.

The most prevalent complications generated by the surgical procedures encountered in the present study were fibrosis. The literature shows that the complications will depend on the technique utilized and the extension of the lesions, it may occur fibrosis, paresthesia in shoulders and neck and deformities that will affect the function and

facial aesthetics, with the possibility of reconstructions with grafts^{32,33}.

There are deficits that can be encountered in epidemiological studies and in special in this population. In this study, the information produced from the hospital registry of individuals in the country's south region, occasionally present fragilities because of data incomplete, missing information as life habits, risk factors for the development of the disease, associated comorbidities, previous cancer diagnosis without treatment and lack of family cancer history in the charts. With this, the information about the patients were scarce and there was an elevated number of data not informed.

CONCLUSION

The clinical and epidemiological profile of the patients with head and neck cancer concurs with the data described in the literature, being a disease formed predominantly by male patients, from the fifth decade of life onward, low education and family income, most of the them tobacco and alcohol users with more than 30 years of exposure and with the oral cavity as the most prevalent primary location of the tumor.

It is extremely relevant to know and study the epidemiological profile of the patients with head and neck cancer for better analysis in relation to detection and behavior of the disease, knowledge of possible complications of the clinical and/or surgical treatment and encourage therefore, better quality and guidance of actions to stimulate improvements of the treatments performed.

CONTRIBUTIONS

All the authors contributed substantially for the conception and planning of the study, gathering, analysis and/or interpretation of data as well in wording and/or critical review and final approval of the version published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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