Factors related to the delay in initiating treatment for oral cancer at a referral center in the Central-West region of Brazil

Fatores relacionados ao atraso no início do tratamento do câncer de boca em um centro de referência da Região Centro-Oeste do Brasil

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Resumo

Introdução: A detecção precoce e o pronto tratamento têm importante papel na redução da morbidade e mortalidade por câncer. No Brasil, a Lei nº 12.732/2012 define o prazo máximo de 60 dias para o início do tratamento após o diagnóstico. **Objetivo:** Identificar fatores com o potencial de contribuir para o atraso do início do tratamento dos pacientes diagnosticados com câncer de boca em um Centro de Assistência de Alta Complexidade em Oncologia (CACON) na Região Centro-Oeste do Brasil. **Material e método:** Neste estudo observacional retrospectivo, analisaram-se os prontuários de 122 pacientes atendidos de 2010 a 2016 cujos tratamentos sofreram um atraso superior a 60 dias após a confirmação do diagnóstico. Os dados de cada prontuário foram identificados e transcritos em uma planilha. **Resultado:** Seis fatores que podem ter contribuído para o atraso no tratamento foram identificados e classificados em três dimensões: paciente, profissional de saúde e serviços de saúde. O fator mais frequente foi relacionado aos serviços de saúde, e envolveu falhas na disponibilidade de serviços (90,2%), especialmente quanto ao tempo de espera para a realização de diversos exames. Na dimensão profissional de saúde, destacaram-se as dúvidas acerca do diagnóstico e tratamento (65,6%). Os fatores menos frequentes foram relacionados à dimensão paciente, e envolveram aspectos comportamentais (23,8%) e socioeconômicos (15,6%). **Conclusão:** Observou-se uma alta frequência de fatores com o potencial de contribuir para o atraso do início do tratamento do câncer de boca, destacando-se os relacionados aos serviços de saúde, em especial ao tempo de espera para a realização de exames.

Descritores: Neoplasias bucais; tempo para o tratamento; política de saúde; qualidade da assistência à saúde.

Abstract

Introduction: Early detection and prompt treatment play an important role in reducing morbidity and mortality from cancer. In Brazil, Law No. 12,732/2012 defines a maximum period of 60 days for starting treatment after diagnosis. **Objective:** To identify factors that may contribute to delays in initiating treatment for patients diagnosed with oral cancer at a High Complexity Oncology Care Center (CACON) in the Central-West region of Brazil. **Material and method:** This retrospective observational study analyzed the medical records of 122 patients whose treatments, conducted between 2010 and 2016, were delayed by more than 60 days following confirmation of their diagnosis. Data from each medical record was collected and transcribed into a spreadsheet for analysis. **Result:** Six factors potentially contributing to treatment delays were identified and classified into three dimensions: patient-related, health professional-related, and health services-related. The most prevalent factor was related to health services, specifically failures in service availability (90.2%), particularly regarding waiting times for various tests. Within the professional health dimension, concerns related to diagnosis and treatment were the most prevalent factors (65.6%). The least frequent factors were linked to the patient-related dimension, encompassing behavioral

(23.8%) and socioeconomic (15.6%) aspects. **Conclusion:** A high frequency of factors potentially contributing to delays in initiating treatment for oral cancer was observed, with those related to health services being the most prevalent, especially the waiting times for various tests.

Descriptors: Mouth neoplasms; time-to-treatment; health policy; quality of health care.

INTRODUCTION

The high incidence of cancer is a significant public health problem and is a frequent cause of mortality. In most countries, cancer is either the leading or second leading cause of premature death (before the age of 70) and contributes to the global reduction in life expectancy[1,2].

Estimates for the incidence and mortality of oral cancer worldwide in 2040 are projected to be 535,157 cases and 261,254 deaths, respectively[3]. In Brazil, the annual estimate for the 2023-2025 triennium is 15,100 cases, with a risk of 6.99 cases per 100,000 inhabitants[1]. For 2040, estimates for Brazil indicate 16,239 cases and 7,160 deaths[3].

Early detection and timely initiation of treatment are crucial for reducing cancer-related morbidity and mortality. Late diagnosis of oral cancer is linked to an unfavourable prognosis and often requires costly, mutilating treatments or may cause death[4-6]. Most cases that arrive for treatment at referral hospitals are at an advanced stage (stage IV)[7]. Globally, various factors contribute to delays in treating this disease, with patient-related factors being the most commonly reported[8]. Therefore, minimizing delays in the therapeutic journey of patients should be a primary objective of public health policies.

Law No. 12,732, enacted on November 22, 2012[9], aims to reduce the time between diagnosis and treatment initiation for cancer in Brazil. It stipulates that patients are entitled to receive all necessary treatments within the Unified Health System (SUS). Furthermore, the law guarantees that patients have the right to begin their first treatment within 60 days of diagnosis, as confirmed by an anatomical pathology report, and that this timeframe may be shortened based on the therapeutic needs of the case, as documented in a unified medical record[9-11].

The achievement of this oral cancer objective during the 2013-2019 period was analyzed in a previous study based on data from DATASUS[12]. The results indicated that starting in 2018, there was an increase in the number of cases initiating treatment within 60 days of diagnosis. Although regional differences were observed, this trend remained stable in most regions and across the country as a whole[12]. Understanding the factors that may influence the pre-treatment interval is essential for supporting interventions aimed at improving patient outcomes and survival rates.

Previous studies have explored the possible reasons for treatment delays at various points in the therapeutic journey of patients with oral cancer[5,13-20]. These studies had methodological variations concerning the types of cancer included (mouth, head and neck, mouth/oropharynx). Most of them investigated the reasons for diagnostic delays based on patients' perceptions, as well as their sociodemographic and clinical characteristics, using patient questionnaires and/or data collected from medical records.

A study utilizing the United States National Cancer Database identified several predictors of delayed treatment initiation following diagnosis, including advanced age, comorbidities, lack of health insurance coverage, advanced staging of lesions, and treatment provided at educational institutions[5]. No studies specifically examining the diagnosis-treatment interval for oral cancer were identified in Brazil. The available hospital-based studies conducted in various cities across the Northeast, South, and Southeast regions involved administering questionnaires to patients. These questionnaires addressed factors related to delays in diagnosing oral[13,15] and mouth/oropharynx cancer[14,17,19], as well as delays in initiating treatment for mouth/oropharynx cancer, using the onset of the first symptoms as the starting point[20].

Considering the text of the 2012 Law[9] and the need to assess the impact of the public health strategy outlined therein for the treatment of oral cancer, studies focusing on a maximum interval of 60 days between diagnosis and treatment initiation could yield valuable insights. Additionally, it is important to understand the situation across different Brazilian regions, where inequalities in treatment delays were reported in a previous study[12]. Furthermore, while patient reports are important, analyses based on medical records could contribute to a more comprehensive understanding of key aspects of the patient's journey. Medical records provide a detailed account of the trajectory of clinical care, including the interventions performed and any complications observed in the hospital setting.

This study aimed to identify factors potentially contributing to delays in initiating treatment for patients diagnosed with oral cancer at a referral center in the Central-West region of Brazil.

MATERIAL AND METHOD

The data source for this hospital-based retrospective cross-sectional study was the medical records of patients with oral cancer treated at a referral center for cancer diagnosis and treatment in Goiânia, GO, Brazil (Araújo Jorge Hospital of the Goiás Association for Fighting Cancer, HAJ-ACCG). HAJ is the only High Complexity Oncology Care Center (CACON) in the Central-West region of the country and serves SUS users from other Brazilian regions, primarily the North and Northeast[21].

The study population consisted of patients of all ages residing in Goiânia who were treated over seven years (2010-2016) and experienced delays in the initiation of treatment. A delay was defined as treatment starting 60 days or more after the confirmation of diagnosis, according to Law No. 12,732/2012[9]. Only cases where the date of treatment initiation and/or death occurred after diagnosis were included in the study sample. Cases coded as C00 to C06 in the 10th Revision of the International Classification of Diseases (ICD) were classified as oral cancer (oral cavity and lip).

Patients who met these inclusion criteria were identified using the database of the Hospital Cancer Registry and the HAJ Population-Based Cancer Registry. Incomplete patient data that hindered the calculation of the pre-treatment interval were excluded, as were patients whose medical records could not be located at the hospital.

The Goiás Center for Mouth Diseases, School of Dentistry, Federal University of Goiás (CGDB/FO/UFG), and the Center for Dental Specialties (CEO) at the Dentistry Center of the Goiás State Department of Health (SES-GO) constitute the Health Care Network (RAS) in the surveyed city. Their records were examined to supplement information regarding the date of diagnosis confirmation.

Data was obtained from patient records at HAJ. The variables investigated were the factors potentially contributing to the initiation of treatment more than 60 days after the confirmation of diagnosis. After a researcher thoroughly reviewed each medical record, the relevant data were identified and transcribed into a specially created spreadsheet. One or more factors contributing to the delay were identified for each patient. These factors were then classified into three dimensions—patient-related, health professional-related, and health services-related as proposed by Soares et al.[22], and categorized according to criteria established by the researchers.

A descriptive statistical analysis of the data was conducted using frequencies (n and %) for the dimensions, factors, and categories, employing IBM SPSS v. 23 software.

The study was approved by the Research Ethics Committees of the following institutions: UFG—Substantiated opinions No. 2,667,648 (May 22, 2018), No. 2,976,670 (October 23, 2018), and No. 4,395,645 (December 11, 2020); ACCG—Substantiated opinions No. 2,699,948 (June 7, 2018), No. 3,038,471 (November 26, 2018), and No. 4,749,778 (June 1, 2021); and SES-GO (Leide das Neves Ferreira Center of Excellence in Teaching, Research and Projects)—Substantiated opinions No. 3,004,200 (July 11, 2018) and No. 4,414,594 (November 23, 2020). All institutions involved agreed to participate in the study. There was no need to obtain consent from patients as the study utilized secondary data, thereby preserving the identity of the participants.

RESULT

A total of 346 patients with oral cancer treated at HAJ/ACCG between 2010 and 2016 were identified, of which 312 (90.2%) had oral cavity cancer and 34 (9.8%) had lip cancer. A delay in treatment initiation of more than 60 days after diagnosis was observed in 122 (35.3%) of the cases. Most patients were male, pardo/brown ethnicity, over 40 years of age, and did not live with a partner (Table 1).

Table 1. Sociodemographic characterization of patients with oral cancer for whom a delay of more than 60 days was observed in treatment initiation. Goiânia, GO, Brazil, 2010-2016. N = 122

Variables		N	%
Sex	Male	92	75.4
	Female	30	24.6
Race/skin color	White	50	41.0
	Pardo/Brown	70	57.4
	Black	2	1.6
Age range (years)	< 40	6	4.9
	40 to 59	65	53.3
	>= 60	51	41.8
Marital status	Married/living with a partner	58	47.5
	Single	26	21.3
	Divorced/separated	19	15.6
	Widow/widower	18	14.8
	Not informed	1	0.8

Analysis of the medical records identified six factors potentially influencing treatment delays, which were classified into three dimensions: patient-related, health professional-related, and health services-related (Tables 2 through 4). In the patient dimension (Table 2), four factors were considered: behavioral, socioeconomic, psychosocial, and health condition. In the health professional and health service dimensions (Tables 3 and 4, respectively), the identified factors included questions regarding diagnosis and treatment, and service provision, respectively.

The most frequent factor identified was the provision of services within the health services dimension (90.2%), whereas the least frequent factors were behavioral (23.8%) and socioeconomic (15.6%) factors from the patient dimension.

In the patient dimension (Table 2), the most frequently cited behavioral factor was the patient's failure to attend scheduled appointments or surgeries (12.3%). The most identified socioeconomic factor was the need for social support for transportation, oxygen, special diet, or social benefits (13.9%). The most frequent psychosocial factor was the need for psychological support (15.6%). Regarding health condition factors, the severity of the patient's health condition concerning complications or the need for emergency consultations stood out (18.0%), along with demands for dental care, specifically the need to undergo dental treatment before oral cancer treatment (15.6%).

In the health professional dimension (Table 3), the identified factor was related to diagnosis and treatment (65.6%). The most frequent categories within this factor were discussions of the case with a multidisciplinary team regarding the recommended treatment (26.2%) and referrals made without a biopsy or confirmed diagnosis (24.6%).

In the health services dimension, the factor identified was the provision of services (Table 4). This factor included categories such as unmet needs for various types of tests, particularly preoperative tests (55.7%), and waiting times for performing them (52.5%). Additional categories pertained to awaiting authorizations for procedures, dental treatment, consultations, and hospital bed availability.

Table 2. Factors related to a delay of more than 60 days in starting oral cancer treatment (patient-related dimension) according to data from medical records. Goiânia, GO, Brazil, 2010-2016. N = 122

Dimension	Factors N (%)*	Categories	N	%*
Patient	Behavioral N=29 (23.8%)	Questions from the patient or their family members regarding the proposed treatment	8	6.6
		Refusal to undergo a procedure before treatment (e.g., nasogastric tube insertion)	1	0.8
		Failure to attend a scheduled appointment or surgery (or attendance by the support person only)	15	12.3
		Delay in returning for a scheduled appointment, in scheduling a follow-up appointment, or in presenting test results	6	4.9
	Socioeconomic N=19 (15.6%)	Need for shelter (the patient reveals that he/she is from another city only after treatment has commenced)	2	1.6
		Need for social support related to transportation, oxygen, special diet, social benefits (e.g. retirement, BPC), medication, or authorization from the SUS for tests, social support and/or nutritional support	17	13.9
		Financial difficulty in accessing dental examinations or treatments	1	0.8
		Lack of support person (absence of a family member to accompany the patient or the patient's resistance to accepting support)	6	4.9
	Psychosocial N=45 (36.9%)	Refusal of the proposed treatment	9	7.4
		Resistance to the proposed treatment	3	2.5
		Need for psychological support	19	15.6
	Health condition N=49 (40.2%)	Need for surgical access for respiratory and nutritional support (gastrostomy and tracheostomy)	12	9.8
		Disease severity (unresectable lesion)	5	4.1
		Dental care demands (need for prior dental treatment)	19	15.6
		Severity of the patient's health condition (weakened, malnourished)	13	10.7
		Severity of the patient's health condition (death before initiating treatment)	1	0.8
		Severity of the patient's health condition (complications or the need for emergency consultations)	22	18.0
		Severity of the patient's health condition (high surgical risk)	6	4.9
		Severity of the patient's health condition (need for treatment of another disease or injury before oral cancer treatment)	5	4.1

*The percentages in the columns do not total 100% because there were cases where more than one factor was observed.
BPC: Continuous Benefit Payment.

Table 3. Factors related to a delay of more than 60 days in starting treatment for patients with oral cancer (healthcare professional–related dimension) according to data from medical records. Goiânia, GO, Brazil, 2010-2016. N = 122

Dimension	Factors N (%)*	Categories	N	%*
Health professional	Questions about diagnosis and treatment N=77 (63.1%)	Request for slide review	25	20.5
		Referral without a biopsy or confirmed diagnosis	30	24.6
		Discussion of the case with a multidisciplinary team regarding the recommended treatment	32	26.2
		Need for new tests or repeat tests to complete the diagnosis	12	9.8
		Change in the initially proposed treatment	4	3.3

*The percentages in the columns do not total 100% because there were cases where more than one factor was observed.

Table 4. Factors related to a delay of more than 60 days in starting treatment for patients with oral cancer (health services–related dimension) according to data from medical records.
Goiânia, GO, Brazil, 2010-2016. N = 122

Dimension	Factors N (%)*	Categories	N	%*
Health services	Provision of services N=110 (90.2%)	Need to perform tests (pre-operative)	68	55.7
		Need to perform tests (biopsy)	33	27.0
		Need to perform tests (tomography)	60	49.2
		Need to perform tests (panoramic and/or periapical radiography)	10	8.2
		Need to perform tests (other)	43	35.2
		Need to perform tests (related to the surgical risk)	12	9.8
		Waiting for tests to be performed	64	52.5
		Awaiting authorization for HCOP and HAA	33	27.0
		Awaiting dental treatment	16	13.1
		Awaiting appointment scheduling, follow-up or initiation of treatment	28	23.0
		Awaiting consultation regulated by SUS	8	6.6
		Awaiting a hospital bed	1	0.8
		Awaiting the biopsy results	18	14.8

*The percentages in the columns do not total 100% because there were cases where more than one factor was observed.
HCOP: Highly Complex Outpatient Procedures. HAA: Hospital Admission Authorization.

DISCUSSION

The present study identified six factors influencing delays in treatment initiation after the diagnosis of oral cancer, based on data from the medical records of patients treated at a CACON in the Central-West region. The most frequent factor was the waiting time for performing tests, which represents a significant obstacle to initiating treatment within the context of health service provision.

Previous studies have investigated the reasons for delayed diagnosis and treatment of oral, oropharyngeal, and head and neck cancers based on patient reports, but have not specifically analyzed the period between diagnosis confirmation and treatment initiation[13-15,17,19,20]. Therefore, the results of the present study offer a valuable contribution by highlighting the aspects that impede the start of treatment, which may inform the evaluation of public policies addressing cancer issues in the country, particularly those outlined in Law No. 12,732/2012[9].

Other frequently identified factors related to health services included delays in authorizing chemotherapy or radiotherapy procedures, waiting for hospitalization authorization, and the need for prior dental treatment. These results indicate that the health system is still ineffective in meeting users' needs promptly. Therefore, the SUS must be organized to provide services, streamline the scheduling of consultations and hospitalizations, and ensure adherence to the principles of comprehensiveness, universality, and equity. Literature reviews have also highlighted shortcomings in the healthcare system as factors that can negatively impact both the time to diagnosis and the time to treatment, such as the scarcity of referral services capable of treating oral cavity tumours, poorly distributed services, and communication failures[22-24].

In the present study, factors related to health professionals were identified in more than two-thirds of the cases. The significance of these factors was emphasized in a previous study conducted in a city in the Southeast region of Brazil, which found that the longest interval between the date of first symptoms and the date of treatment initiation for patients with oral and oropharyngeal cancer occurred between the initial medical consultation and the specialist consultation[20]. The potential causes of this delay were attributed to the first consultation with a general practitioner, who incorrectly diagnosed the condition as a disease other than cancer and prescribed antibiotics[20].

The lack of skill among health professionals in performing diagnoses and making referrals may be linked to low levels of knowledge and work overload, leading to inadequate examinations of the oral cavity[22,25]. These aspects highlight existing weaknesses in medical education and underscore the need for training programs for professionals working in primary health care. Such training should include guidance on referral processes and the diagnosis of oral cancer.

Among patient factors, those related to health conditions were particularly significant, especially the need for prior dental treatment. This suggests shortcomings in primary health care concerning the provision and organization of services, as well as a failure to prioritize users diagnosed with oral cancer. Delays in diagnosing oral cancer, which lead to a deterioration of the patient's health due to difficulties in accessing services, ultimately result in postponements of treatment initiation[22].

Refusal to accept the proposed treatment and patient absenteeism from scheduled appointments can also contribute to treatment delays. The underlying reasons for these factors should be investigated in future research, particularly focusing on the influence of social determinants, such as individuals' socioeconomic status. Furthermore, health services should be organized to ensure a sufficient supply of consultations to meet patient demand and enhance geographical accessibility.

The socioeconomic issues identified in this study underscore the need to implement public policies that provide social and financial support to patients with oral cancer. This support should ensure access to transportation, oxygen, special diets, medications, and tests through the SUS. Additionally, there is a need to establish a streamlined process that prioritizes and facilitates the provision of social benefits, such as the Continuous Benefit Payment (BPC) or retirement for patients affected by the disease.

One limitation of the present study is its descriptive approach, which does not enable the establishment of relationships between the identified factors and the causes of delay in treatment initiation for patients with a confirmed diagnosis. Another limitation is the incompleteness of the information available in the medical records evaluated at the HAJ/ACCG, which prevented the inclusion of all identified cases. According to Resolution No. 1,638/2002 of the Federal Board of Medicine (CFM), the responsibility for completing medical records lies with the healthcare professional, who is expected to do so accurately and promptly[26].

The factors related to delays in initiating oral cancer treatment identified in the present study highlight the need to establish effective mechanisms for monitoring compliance with Law No. 12,732/2012[9]. Furthermore, despite the existence of an established Oncology Care Network in the country, difficulties in accessing services persist as obstacles for users requiring timely care. These challenges lead to delays in obtaining consultations and tests essential for the initiation of cancer treatment. Such issues reflect the underfunding of the SUS and inadequate social control, which hinder the provision of sufficient and timely services to meet the existing demand.

This situation contributes to the progression of the disease, negatively affecting the quality of life and life expectancy of patients with oral cancer. It may also lead to increased treatment costs[27,28] and impede health promotion and disease prevention efforts that could help reduce the incidence of cases within the population[29].

CONCLUSION

The investigation of the patient's medical records indicated a high frequency of factors potentially contributing to a delay of more than 60 days in the initiation of oral cancer treatment, particularly those related to health services, such as the demand for tests and the waiting time for their execution. These findings suggest a need to enhance the quality of services provided to patients with oral cancer within the Health Care Network (RAS) to reduce the obstacles contributing to treatment delays and to comply with the provisions of SUS legislation.

AUTHORS' CONTRIBUTIONS

FUNDING

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CONFLICTS OF INTERESTS

The authors declare no conflicts of interest.

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