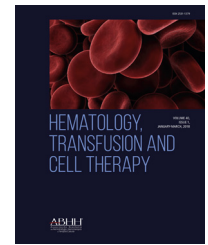




HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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Original article

The frequency of oral conditions detected in hematology inpatients

Alessandra Oliveira Ferrari Gomes^{a,*}, Arley Silva Junior^b, Cesar Werneck Noce^a,
Marisa Ferreira^a, Angelo Maiolino^a, Sandra Regina Torres^a

^a Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, RJ, Brazil

^b Universidade Federal Fluminense (UFF), Niteroi, RJ, Brazil

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ABSTRACT

Background: Oral manifestations may be the first signs of hematologic diseases, and may occur due to the disease itself or to treatment.

Objective: To evaluate the frequency and types of oral conditions presented by patients on a hematology ward.

Methods: Data were collected by oral examinations during weekly visits to a hematology ward. Six trained dentists performed the oral assessment based on the principles of oral semiology. All patients who accepted to be examined were included in the study. Patients who were unavailable or unable to have oral examinations were excluded. Data were recorded on protocol forms and in the electronic records of the institution. A descriptive analysis was performed.

Results: Seventy-nine patients were included in the analysis; 50.6% were female and the mean age was 41.49 years. The most common reasons for hospitalization were chemotherapy and complications (81%), relapse (13.9%) and pre-transplant preparation (5%). The most frequent underlying diseases were multiple myeloma (17.7%), acute myeloid leukemia (15.4%) and acute lymphocytic leukemia (11.5%). Oral conditions were found in 36 (45.6%) patients, some of whom presented more than one condition. The most common oral conditions were dry lips (12.6%), mucositis (10.1%), petechiae (8.9%) and candidiasis (7.6%). Of the detected oral conditions, 56.9% were related to the underlying disease or chemotherapy and 20.2% were not related to the disease.

Conclusion: This study shows the types and frequency of oral conditions observed in hematological inpatients. Awareness of these conditions is important for prevention and planning the care of patients with hematological diseases.

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* Corresponding author at: Universidade Federal do Rio de Janeiro (UFRJ), Rua Professor Rodolpho Paulo Rocco, Ilha do Governador, Rio de Janeiro, RJ, Brazil.

E-mail address: alessofg@gmail.com (A.O. Gomes).

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Introduction

Oral lesions may be the first signs of hematologic diseases. Dentists may be the first healthcare professionals to detect oral signs related to a systemic condition and thus contribute to the early diagnosis of the disease.¹ Oral health is important for systemic balance and oral conditions aggravate the progression of some diseases²; some patients with hematologic diseases evolve with complications due to oral infections, which result in longer hospital stay and increased costs.² The oral manifestations of patients with hematologic diseases can occur due to the disease itself or as a consequence of treatment.³

Anemia, clotting disorders or neoplasms are some of the signs of hematologic diseases.^{1,4} Oral petechiae or ecchymosis, and spontaneous gingival bleeding without a local cause, may be an oral manifestation of a hematologic problem.⁵ Moreover, paleness of the oral mucosa and ulcers are associated with anemia and gingival overgrowth and persistent infections may be signs of leukemia.⁴

The treatment of hematologic diseases includes chemotherapy, radiotherapy, and hematopoietic stem cell transplantation (HSCT).⁴ Malignant cells are the target of antineoplastic drugs, but the oral epithelium and other cells with high mitotic rates are usually affected by the treatment. Chemotherapy and the conditioning regimen for HSCT have many adverse effects on the oral tissues depending on the type and dosage of medications. Oral mucositis, a common side effect of chemotherapy, causes severe pain, which is only relieved by opioids.^{6,7} Mucositis may appear as a generalized erythema and evolve into painful pseudomembranous ulcers.⁸ Neutropenia and thrombocytopenia are also common adverse effects of treatment, leaving patients more susceptible to oral bleeding, infections, and ulcerations.⁹ Oral mucosa pigmentation can also occur as an adverse effect of treatment.⁹

Complications of HSCT can affect most of the organs with oral tissues being affected in the early and late periods after HSCT.¹⁰ Oral chronic graft-versus-host disease is a late complication of HSCT that affects nearly 80% of the patients.¹¹ Salivary flow rates are often reduced due to chemotherapy or to chronic graft-versus-host disease and may cause many oral complications, such as varying degrees of discomfort, dysphagia, dysphasia, dysgeusia, halitosis, and infections such as dental decay, periodontitis and candidiasis.¹²

The most common oral complications in the treatment of hematologic diseases are mucositis, bleeding, hyposalivation, fungal or viral infections and aggravation of odontogenic infections.^{5,13,14} The aim of this study was to evaluate the frequency and types of oral conditions found in patients on a hematology ward during routine dental visits.

Methods

This is a retrospective study with data collected from the patients of the Hematology ward of the Clementino Fraga Filho University Hospital (HUCFF) of the Universidade Federal do Rio de Janeiro (UFRJ). Data used in this study were collected

from routine weekly oral examinations carried out from July 2007 to September 2009 in the patients on the hematology ward. All patients willing to be examined were included in the study, even if they did not present any complaints. The patients that were unable to have oral examinations for any reason that impaired the examination such as intubation or sedation, were excluded from the study. The need for signed informed consent was waived by the institution review board as data were collected from patient records.

Clinical and demographic data were collected from electronic medical records and oral data were collected from the routine exams. Data collected from oral exams were recorded on a standard form, designed specifically for the visits to the wards, and included the patient identification, demographic information, underlying disease, reason for hospitalization and medications including chemotherapy.

A team of four stomatologists and two general dentists were involved in the oral examination of the patients. Training was provided for the two general dentists by exhibiting images of normal mucosa and its variations with clinical discussion on the differential diagnoses of oral lesions.

The intraoral examinations were performed at the bedside with the aid of a frontal light emitting diode light, while respecting biosafety guidelines, and principles of oral semiology.¹⁵ The steps to evaluate the oral mucosa were standardized in the following order: vermilion lip border, labial mucosa, buccal mucosa, gingiva, tongue (dorsum, lateral and ventral surfaces), hard and soft palate, and oropharynx, on both sides of the mouth.

The diagnoses of the oral findings were based on clinical examinations and laboratory exams, when required. If oral changes were detected, the medical team was notified and the patient was treated by a stomatologist of the Oral Health Program team of the same hospital.

Oral conditions detected during examinations were grouped into conditions related to the underlying disease or to its treatment and those that were not related. The following conditions were considered changes related to the underlying disease or to its treatment: mucositis, bleeding disorders, dry lips or mucosa, fungal or viral infections, and aggravation of odontogenic infections.

A descriptive analysis of the data was performed. The collected data were stored and analyzed using the Statistical Package for the Social Sciences (SPSS) 13.0 program for Windows (IBM SPSS®, Chicago, the United States).

Results

Data on 138 oral exams performed in 79 patients on the hematology ward were included in the analysis. The mean age of the patients was 41.5 years old (range: 14–78 years old) and 50.6% were male. The clinical data of the study population are shown in [Table 1](#).

The chemotherapy regimens were established according to the institution protocol. The other frequently prescribed medications were antibiotics (60.7%), analgesics (45.6%) and diuretics (22.8%).

Oral findings of the patients related to the underlying disease or to its treatment are listed in [Table 2](#) and those not

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