



REVIEW ARTICLE

Oral manifestations resulting from chemotherapy in children with acute lymphoblastic leukemia[☆]

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KEYWORDS

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Criança;
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Leucemia;
Manifestações bucais

Abstract

Introduction: Acute lymphocytic leukemia is a type of cancer most common in children and it is characterized by excessive and disordered immature leukocytes in the bone marrow.

Aim: Identify most frequent oral manifestations in children with acute lymphocytic leukemia under chemotherapy treatment.

Methodology: The research was conducted on the electronic database PubMed/Medline, Science Direct, Scielo and Scopus. It has been sought papers with full presentation, wrote in Portuguese, English and Spanish, published between January 1992 and April 2013.

Results: From studies primarily selected, only eight met the criteria of inclusion. All studies performed intraoral examinations to diagnose oral lesions. According to results, the most frequent lesions were mucositis, candidiasis, periodontitis and gingivitis. The oral health condition from acute lymphocytic leukemia carriers varied according oral hygiene of the patient.

Conclusion: The results of studies identified such a great part of patients with ALL presented some lesion in oral cavity during or after chemotherapy treatment. The dentist surgeon needs to recognize oral manifestations and intervene in the oral health of patients with ALL, contributing and helping with treatment.

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Manifestações orais decorrentes da quimioterapia em crianças portadoras de leucemia linfocítica aguda

Resumo

Introdução: A leucemia linfocítica aguda é um dos tipos de câncer mais comuns em crianças e é caracterizada pela produção excessiva e desordenada de leucócitos imaturos na medula óssea.

Objetivo: Identificar as manifestações orais mais frequentes em crianças portadoras de leucemia linfocítica aguda sob o tratamento quimioterápico.

Metodologia: A pesquisa foi realizada nas bases de dados eletrônicas PubMed/Medline, Science

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Direct, Scielo e Scopus. Procurou-se por artigos apresentados na íntegra, escritos em português, inglês e espanhol, publicados entre janeiro de 1992 e abril de 2013.

Resultados: Dos estudos selecionados primariamente, apenas oito atenderam aos critérios de inclusão. A população avaliada foi um grupo de crianças portadoras de leucemia linfocítica aguda. Todos os estudos realizaram exames intraorais para o diagnóstico das lesões bucais. De acordo com os resultados, as lesões mais frequentes foram mucosite, candidíase, periodontite e gengivite. A condição de saúde bucal dos portadores de leucemia linfocítica aguda variou de acordo com a higiene bucal do paciente.

Conclusão: Pacientes com LLA podem apresentar alguma lesão na cavidade oral durante ou após o início da quimioterapia. O cirurgião dentista necessita reconhecer as manifestações orais e intervir na saúde bucal do paciente com LLA, contribuindo e auxiliando no seu tratamento.

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Introduction

Leukemia is a disease characterized by progressive and excessive production of leukocytes in the bone marrow, whose immature forms start circulating in blood.^{1,2} The disseminated proliferation of blasts leads to a substitution of normal bone marrow elements, resulting in the accumulation of immature cells in the blood. The etiology of leukemia is still uncertain, but many studies point to causal factors such as viral infection and radiation and chemical exposure. There are three different subtypes of lymphocytes, and thus there are different types of leukemia, which are classified according to the cell involved, as well as the duration and characteristics of the disease.¹⁻⁴

Acute lymphoblastic leukemia (ALL) represents approximately 80% of leukemias, and occurs mostly in children.¹ ALL results in uncontrolled and excessive production of lymphoid blasts, hindering the normal production of red and white cells, as well as platelets. The chances of survival have increased with advances in anticancer treatment modalities.^{2,3}

The first signs of leukemia can regularly occur in the oral cavity, especially in the acute phase of cancer, as common lesions at this stage of the disease that can be observed and recognized primarily by the dentist.^{4,5} The most common manifestations of leukemia in the oral cavity are gingival bleeding, hyperplasia, opportunistic infections, and bone alterations.

During the antineoplastic treatment, the lesions become even more severe, since chemotherapy acts on poorly differentiated or high-metabolism cells, affecting not only blast cells, but also normal body cells.^{3,4}

The dentist needs to be aware of lesions caused by leukemia and the anticancer treatment in order to improve the patient's oral health. Thus, this study aimed to perform a systematic review of the literature on oral complications secondary to chemotherapy performed in children with ALL.

Methods

A systematic search of articles in English, Portuguese, and Spanish published between January of 1992 and April of 2013 was performed in the PubMed/MEDLINE, Science Direct, Scopus, and SciELO databases. Studies whose the target population was children aged 2 to 18 years with ALL and that evaluated the complications of anticancer treatment in the oral cavity were selected.

The search used the following terms: oral manifestations, Leukemia, Acute Lymphoblastic Leukemia, ALL, chemotherapy, and children, as well as the corresponding words in Portuguese and Spanish. The Boolean operators AND, OR, NOT were used in the databases, when possible. The search strategies are shown in Table 1.

Table 1 Search strategies and number of articles found in the databases.

Strategies	A	B	C	D
(Oral Lesions OR Oral Manifestation OR Mouth Lesion OR Mouth Manifestation OR Oral Pathology) AND Leukemia AND Chemotherapy AND Children	0	88	32	801
(Oral Lesions OR Oral Manifestation OR Mouth Lesion OR Mouth Manifestation OR Oral Pathology) AND Acute lymphocytic leukemia AND Chemotherapy AND Children	0	37	0	128
(Oral Lesions OR Oral Manifestation OR Mouth Lesion OR Mouth Manifestation OR Oral Pathology) AND Acute lymphocytic leukemia AND (Chemotherapy OR antineoplastic agents) AND Children	0	34	1	134

A, Scielo; B, Science Direct; C, Scopus; D, PubMed/Medline.

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