Oral mucositis is the most prevalent complication in children with acute lymphoblastic leukemia, a consequence of cytotoxic chemotherapy
and transplantation of hematopoietic stem cells in adults and children. This condition presents an estimated incidence of 40% after conventional chemotherapy and 70% after high-dose chemotherapy. The oral mucosa is highly susceptible to the effects of chemotherapy and radiotherapy due to the high mitotic activity, which is the major source of sepsis in pediatric patients with leukemia. Early intervention, including the adoption of oral hygiene measures, reduces the risk of associated oral and systemic complications.

To evaluate the methods of prevention, the diagnosis and treatment of oral mucositis lesions in children with acute lymphoblastic leukemia.

Bibliographic research carried out in the PubMed database, with the following keywords: oral mucositis; Prevention; Pediatric patients; Tooth brushing techniques; Oral health and chemotherapy; isolated and in combination articulated with the boolean marker ‘AND’. Inclusion Criteria:

- Language: English and French;
- Time limit: 2000 to 2016;
- Scientific article type: Case Reports; Clinical Study; Clinical Trial: Clinical Trial Phase I; Clinical Trial Phase II; Clinical Trial Phase III; Guideline; Meta-analysis; Randomized Controlled Trial; Review and Systematic Review;
- Articles with reference to the prevention of oral mucositis in the pediatric oncological population.

After the bibliographic research with the mentioned characteristics, a total of 29 articles were analyzed, as shown in Table 1.

![Image of Table 1](image-url)

**Table 1. Bibliographic research**

<table>
<thead>
<tr>
<th>Oral Mucositis</th>
<th>Prevention</th>
<th>Conditioning for transplantation (High Dose Chemotherapy)</th>
<th>Chemotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Beginning: 7 to 10 days after the start of conditioning;</td>
<td>• Beginning: 3 to 5 days after initiation of chemotheraphy;</td>
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<td>• Symptoms: up to approximately 2 weeks after the end of conditioning;</td>
<td>• Symptomatology: duration of about 3 weeks;</td>
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<td>• Clinically: erythematous, erosive and ulcerative lesions;</td>
<td>• Peak: between 7 and 14 days, then slowly regresses;</td>
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<td></td>
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<td>- Ulcerative lesions are the most symptomatic;</td>
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<td>- Erythematous lesions may progress to elevated white scaly spots and then to painful ulcers.</td>
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<td><strong>Chemo-induced oral mucositis</strong>: observed on the movable mucosa, it rarely affects the back of the tongue, palate or gums.</td>
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<tr>
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<td><strong>Oral mucositis by radiotherapy</strong>: observed in the mobile mucosa and adhered.</td>
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</tr>
</tbody>
</table>

**Diagnosis**

- Normal aspect of oral mucosa
- Erythema with painful sensation
- Non-confluent pseudomembranous plaques less than 1,5cm, erythema, ulceration and pain
- Tooth and solid foods
- Confluent pseudomembranous plaques with more than 1,5cm, ulcers and severe pain
- Only liquid feed is possible
- Ulceration and necrosis with intolerable pain
- Oral feeding impossible impossible, only parenteral nutrition, speech impairment

**Prevention**

- Teach children and parents / educators oral hygiene techniques, and explain the symptomatology of these lesions;
- Cryotherapy (application of ice cubes or mouthwashes with ice water during chemotheraphy);
- Palifermin (keratocyte growth factor): reduces the incidence and duration of severe oral mucositis in patients undergoing high-dose chemotherapy with or without radiotherapy, followed by transplantation of hematopoietic cells.

**Treatment**

- To maintain a good oral hygiene, using appropriate techniques and materials, such as soft consistency brushes;
- Analgesics;
- Non-narcotic mouthwashes (e.g., 0,9% saline or 4 to 6 times / day sodium bicarbonate);
- Parenteral nutrition, if necessary;
- Mucosal coating agents (e.g., Amphoject).

The success for the maintenance of a healthy oral cavity during oncologic therapy lies in the execution of an early diagnosis and the application of adequate preventive/therapeutic measures in each phase of mucositis / cancer treatment.

In monitoring the cancer patient, it is fundamental the intervention of a multidisciplinary team aiming to minimize the impact of cancer treatment on oral and general health, and the quality of life of the child.

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