PROGNOSTIC POTENTIAL OF ORAL MUCOSITIS IN TRANSPLANTED ADULT PATIENTS TREATED WITH PREVENTIVE LOW-LEVEL LASER THERAPY

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Oral Medicine

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BACKGROUND:

Allogeneic hematopoietic stem cell transplantation (HSCT) is the only curative treatment for many hematological disorders, both benign and malignant, and this modality of treatment has been growing significantly in last years [1].

Oral Mucositis (OM) is a common toxicity in patients treated with allogeneic hematopoietic stem cell transplant (aHSCT), usually causing pain, dysphagia, disgeusia, leading to increased use of opioids, and longer periods of hospitalization [2-4].

A better management of oral mucositis (OM) is desired and preventive low-level laser therapy (LLLT) has emerged as an alternative to improve patients' quality of life [2-4].

OBJECTIVE:

The objective of this study is to describe the oral clinical features of 78 HSCT patients preventively treated with LLLT and to demonstrate the prognostic potential of OM for these patients.

METHODS:

From 2013 to 2016 clinical data of 78 patients submitted to aHSCT were retrospectively retrieved and investigated for the development of OM. All patients received professional dental care and LLLT before the transplantation. Fisher's exact test was applied to investigate the association of OM with clinical parameters, while survival curves created with Kaplan-Meyer method were compared using the Log-rank test.

RESULTS

OM was observed in 36 patients (46%), with 7 days as median time to develop the toxicity. Severe OM was found in 21% of the patients and this toxicity did not influence the time of hospitalization and the mortality rate ($p > 0.05$). Myeloablative conditioning regimen was the only parameter that significantly increased OM incidence ($p < 0.0001$), but using the univariate analysis, the presence of OM did not determine a lower survival for these individuals ($p > 0.05$).

Clinical features	N
Age years (median, (range)	**42 (18-73)**
Male Sex, n (%)	**45 (58)**
Diagnosis, n (%)	
- AML	**45 (58)**
Graft type, n (%)	
- BMT	**19 (24)**
- PBSCT	**47 (60)**
- CBT	**13 (16)**
Donor type , n (%)	
- Identical related	**28 (36)**
- Unrelated	**32 (41)**
- Haploidentical	**18 (23)**
Conditioning region, n (%)	
- Myeloablative	**36 (46)**
- Reduced intensity	**42 (56)**
Total body radiation, n (%)	**45 (58)**
Mucositis severity, n (%)	
- Grades 1-2	**20 (27)**
- Grade 3-4	**16 (21)**

Table 1. Clinical features of 78 transplanted patients prophylactically treated with LLLT according to oral mucositis development. (AML: Acute myeloid leukaemia; BMT: Bone marrow transplantation; PBSCT: Peripheral blood stem cell transplantation; CBT: Cord blood stem cell transplantation; Graft-versus-host-disease)

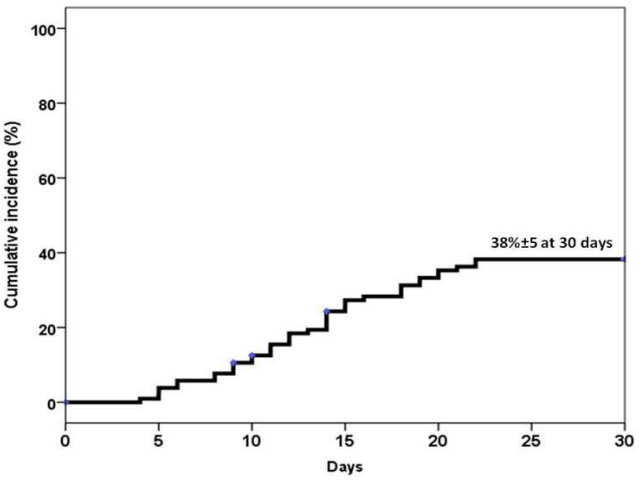

Figure 1. Cumulative incidence of oral mucositis at 30 days in 78 patients submitted to allogeneic HSCT prophylactically treated with LLLT.

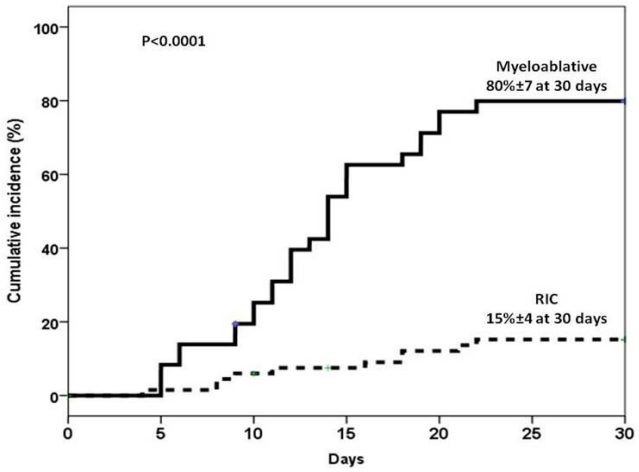

Figure 2. Cumulative incidence of oral mucositis at 30 days in 78 patients submitted to allogeneic HSCT prophylactically treated with LLLT, according to the conditioning regimen (myeloablative or reduced-intensity regimens).

CONCLUSIONS

OM in transplanted patients preventively treated with LLLT is not a statistically significant prognostic determinant, may be helpful to decrease the risk of severe mucositis even after myeloablative regimens and usually present as less severe ulcerations.

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