

Efficacy of cryotherapy associated with laser therapy for decreasing severity of melphalan-induced oral mucositis during hematological stem-cell transplantation: a prospective clinical study

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Melphalan followed by hematopoietic stem-cell transplantation (HSCT) is the standard treatment for multiple myeloma and other hematopoietic neoplasms. However, high doses of melphalan cause severe oral mucositis (OM). The objective was to verify the efficacy of cryotherapy plus laser therapy on reduction of OM severity. HSCT patients undergoing melphalan chemotherapy (n = 71) were randomly divided into two groups according to OM treatment: oral cryotherapy performed with ice chips for 1 h 35 min followed by low-level laser therapy (InGaAlP, 660 nm, 40mW, 6 J/cm²) (n = 54) and laser therapy alone with the same protocol (n = 17). A control group (n = 33) was composed of HSCT patients treated with melphalan who received no specific treatment for OM. OM scores and clinical information were collected from D0 to D+ 11. The cryotherapy/laser therapy group showed the lowest OM scores (maximum Grade I) and the lowest mean number of days (8 days) with OM in comparison with the other groups (p<0.001). OM Grades III and IV were present with high frequency only in the control group. The association of cryotherapy with laser therapy was effective in reducing OM severity in HSCT patients who underwent melphalan conditioning.