

# **Ozone therapy for the treatment of HSCT- induced oral mucositis: a preliminary controlled study.**

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**Introduction.** Ozone therapy can be defined as a versatile bio-oxidative therapy with immunostimulant, analgesic and antimicrobial properties. The aim of this study was to assess ozone effectiveness in the treatment of Hematopoietic stem cell transplantation (HSCT) – induced oral mucositis.

**Methods.** Patients from 20 to 65 years of age that underwent stem cell transplantation and presenting OM grade 3 or more during the hospitalization were eligible for this study.

Oral mucositis grade was scored according the Common Toxicity Criteria Scale of the WHO. Lesions were classified as Grade 0 = none; Grade 1=soreness and erythema; Grade 2=erythema and ulcers without difficulties in swallowing solid food; Grade 3= ulcers requiring only a liquid diet and Grade 4= introduction of parental nutrition.

Pain was evaluated at the same timing of OM scoring through the Visual Analogue Scale (VAS) where 0 indicates no pain and 10 indicates severe pain.

Patients were treated with ozone therapy (Ozone DTA- Sweden & Martina) for 5 consecutive days, from the onset of OM. Patients were monitored and evaluated 5 and 7 days after the first application of ozone therapy. The same clinician performed OM scoring and pain evaluation on day 1 (before the beginning ozone therapy-**T0**), on day 5 (after finishing ozone therapy-**T1**) and on day 7 (**T2**) as a follow up.

**Results. (table 1)** 8 patients were included in the study; all patients already demonstrated pain improvement from day 5 (**T 1**) after the first application of ozone therapy; the OM grading significantly reduced both at T1 and T2 and erythema significantly improved in size and discomfort.

**Conclusions.** Ozone therapy can be effective in reducing pain and OM grading of HSCT- induced oral mucositis. Further researches will be needed in order to confirm the efficacy of ozone therapy in prevention and control of HSCT induced oral mucositis.

TIMINIG	T0 Day 1		T1 Day 5		T2 Day 7	
	GRADE*	VAS**	GRADE*	VAS**	GRADE*	VAS**
PT 1	4	9	1	1	0	0
PT 2	4	9	1	1	1	1
PT 3	3	8	1	1	0	0
PT 4	4	9	1	1	1	1
PT 5	3	8	0	0	0	0
PT 6	4	9	1	1	1	1
PT 7	4	8	1	1	0	0
PT 8	4	9	1	1	1	1