PROPHYLAXIS OF ORAL MUCOSITIS IN PATIENTS TREATED WITH HEMATOPOIETIC STEM CELL TRANSPLANTATION

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|||| BACKGROUND

Oral mucositis (OM) is a frequent side effect following hematopoietic stem cell transplantation (HSCT). It is generally accepted that OM results from the direct inhibitory effects of chemoradiotherapy on DNA replication and mucosal cell proliferation, resulting in a reduction in the renewal capabilities of the basal epithelium. These events are believed to result in mucosal atrophy, collagen breakdown, and eventual ulceration.[1, 2] The ulcerative lesions produced by mucotoxic chemoradiotherapy are painful, restrict oral intake and, importantly, act as sites of secondary infection and portals of entry for the endogenous oral flora.[3] As a consequence of all that, patients' quality of life is reduced. The overall frequency of mucositis varies and is influenced by the patient's diagnosis, age, level of oral health, and type, dose, and frequency of drug administration.[4] There is some evidence that good oral hygiene and frequent rinsing decreases risk and severity of oral mucositis.[5]

|||| OBJECTIVES

Objectives of this study are to determine frequency, intensity, duration and consequences of OM by testing effectiveness of standard OM monoprophylaxis in comparison with OM combination prophylaxis.

|||| PATIENTS AND METHODS

Records from 25 consecutive patients enrolled in an ongoing prospective study (Table 1), treated with autologous (auto) HSCT (22) or allogeneic (allo) HSCT (3) from April until October 2010 were analyzed. Conditioning protocols were: HD-melphalan (7), Flu/Bu/ATG (2), Bu-Cy (2), BEAM (10) and BEAC (4). All patients received antibacterial and antifungal prophylaxis and allo HSCT patients, in addition, received antiviral prophylaxis. Patients are divided into 3 groups (sr, src and srg) based on randomly received OM prophylaxis: standard rinse (SR) (aqua redestilata, chlorhexidine, bicarbonate pulver), SR+Caphosol® (SRC) and SR+Gelclair® (SRG), respectively. Data on frequency, duration and intensity of OM, pain in oral cavity and use of opioid analgetics were compared between these 3 groups. The grade of OM was evaluated according to the WHO scale (Fig 1).

|||| RESULTS

84% of patients (SR, SRC, SRG = 100%, 70%, 86%, respectively) developed OM (20% WHO grade 3). Median duration of OM was 8 days (mean 9.76, range 1-33, SD 6.94) and median OM grade was 2 (mean 1.76, range 1-3, SD 0.83). Median in-hospital time from start of conditioning was 19 (mean 20.28, range 15-37, SD 4.91). 52% of patients experienced pain in oral cavity (SR, SRC, SRG = 75%, 43%, 33%, respectively) and 28% were receiving opioid analgetics (SR, SRC, SRG = 50%, 20%, 14%, respectively). Table 2 shows results of data analysis for each group of patients.

Figure 1. WHO Oral Mucositis Scale

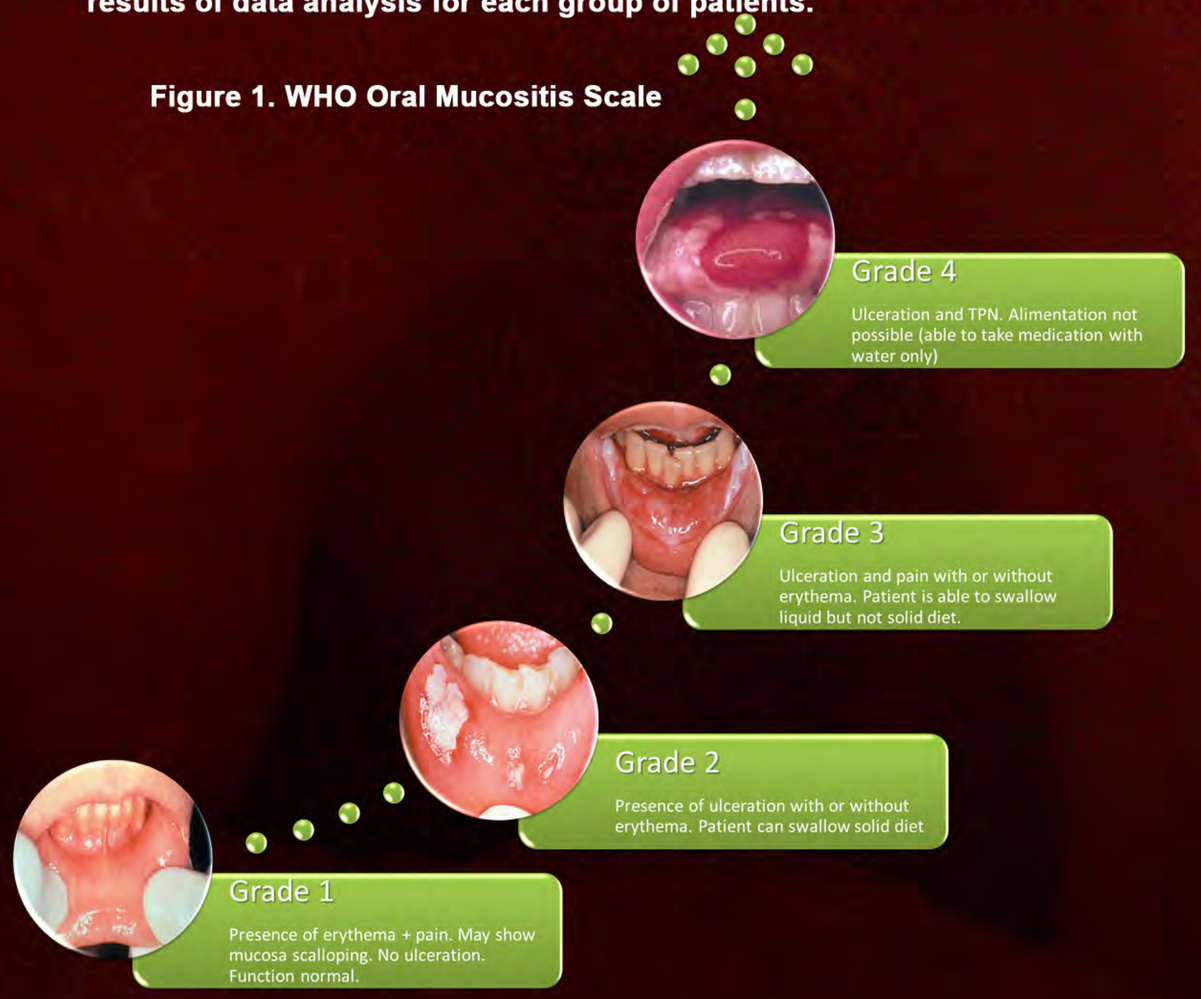

Table 1. Patients' characteristics

		All N=25	Male N=12	Female N=13
Median age		52,0 (24-65)	53,5 (37-65)	51,0 (24-65)
Diagnosis	AML	2	2	-
	CLL	1	-	1
	HL	5	2	3
	MM	7	3	4
	NHL	10	5	5
HSCT	allo	3	-	3
	auto	22	12	10

AML – acute lymphoblastic leukemia; CLL – chronic lymphocytic leukemia; HL – Hodgkin's lymphoma; MM – multiple myeloma; NHL – non-Hodgkin's lymphoma

Table 2. Data analysis stratified by type of oral mucositis prophylaxis

Group of patients	N (%)	Age*	OM	OM duration in days*	OM intensity*	OM grade ≥3	OM grade ≥3 duration*	Pain in oral cavity	Use of opioid analgetics
sr	8 (32%)	49.5, 48.25 (24-61, SD 13.00)	8 (100%)	9, 9.88 (6-17, SD 3.80)	2, 2.00 (1-3, SD 0.76)	2 (25%)	6.5, 6.50 (4-9, SD 3.54)	6 (75%)	4 (50%)
src	10 (40%)	51.5, 49.60 (28-65, SD 10.35)	7 (70%)	11, 12.57 (1-33, SD 10.39)	1, 1.57 (1-3, SD 0.79)	1 (14%)	27, 27.00 (-)	3 (43%)	2 (20%)
srg	7 (28%)	53.0, 51.71 (33-65, SD 9.81)	6 (86%)	5, 6.33 (2-14, SD 4.23)	1, 1.67 (1-3, SD 1.03)	2 (33%)	4.5, 4.50 (2-7, SD 3.54)	2 (33%)	1 (14%)
Total	25 (100%)	52.0, 49.76 (24-65, SD 10.74)	21 (84%)	8, 9.76 (1-33, SD 6.94)	2, 1.76 (1-3, SD 0.83)	5 (24%)	7, 9.80 (2-27, SD 9.98)	11 (52%)	7 (28%)

* median, mean (range, SD), sr - standard rinse, src – standard rinse+Caphosol(R), srg – standard rinse+Gelclair(R)

|||| CONCLUSION

Prophylaxis of OM plays an important part in nursing practice and demands coordinated measures between physicians, nurses and patients. Standard management prophylaxis and avoiding secondary complications of oral mucositis includes routine assessment of the oral cavity, frequent oral care and rinsing, nutritional support and monitoring of food intake, hydration, pain control, infection surveillance and treatment. Patients' education and compliance decreases risk and severity of oral mucositis.

Our analysis shows that OM is more frequent and appears in more severe form in patients treated with monoprophylaxis than in those treated with combined prophylaxis. Patients treated with combined prophylaxis had less frequent oral cavity pain, and those who had it, experienced it in lower intensity. However, this is just a preliminary report of a study that is in progress. Further research on a greater number of patients is warranted.

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