

Commentary: Oral mucositis (OM) – a common problem of oncologists and dentists

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Oral mucositis (OM) is a clinically significant problem affecting more than 90% of patients with cancers of the head and neck area, undergoing radiotherapy where the oral cavity is located within the clinical target volume (CTV). The clinical effect of OM is the result of the existence of the following factors:

- generating symptoms (pain, taste disorders, difficulties in swallowing), leading to disorders of the water and electrolyte metabolism and, finally, malnutrition,
- significant deterioration in quality of life, and
- limitation of radiotherapy tolerance which might lessen treatment effects [1–3].

The pathomechanism of the development of radiotherapy-induced OM is well studied and described. This is a multi-stage process, comprising:

- damage (as a result of the ionising irradiation) and the death of cells within the basal layer and generation of free radicals,
- development of an inflammatory reaction which stimulates the cells' death,

- the production of proinflammatory cytokines stimulating the development of ulceration, leading to secondary infection,
- final stage (healing), with the proliferation and differentiation of epithelial cells [4, 5].

This process was described in detail in the paper: *Oral mucositis (OM) – a common problem of oncologists and dentists*.

There are also many factors affecting the risk of OM development during radiotherapy [1, 3, 6–12] – three groups of factors can be distinguished here:

- 1. Treatment induced**, comprising: the size of the radiotherapy dose and the fractionating pattern, as well as the use of chemotherapy; these factors not only affect the intensification of OM, but also the moment of its development (positive correlation between the dose and intensity of OM; in the case of the administration of accelerated fractionation (AF) of a dose, the symptoms of OM develop earlier and they are more intensive, whilst the application of combined treatment – chemo-radiotherapy, especially with weekly administration of cisplatin – leads to an effect

Table 1. The comparison of the scales RTOG/EORTC and CTCAE, to complete the publication in which the WHO scale was discussed by the authors of the paper Oral Mucositis (OM) – a Common Problem for Oncologists and Dentists

Intensity	RTOG/EORTC [13]	CTCAE [14]
G1	low intensity of erythema and pain (does not require treatment)	no symptoms or mild symptoms
G2	focal serous mucositis, moderate pain (require the use of analgesic agents)	moderate pain, retained ability of oral food intake, necessity to modify diet
G3	diffuse inflammation with fibrin production, significant pain (require the administration of narcotic analgesics)	severe pain, impaired food intake
G4	ulceration, bleeding, necrosis	life threatening condition, requiring urgent intervention
G5		death

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which is cumulative with regards both to the intensity and duration of OM);

- 2. Cancer-induced**, which comprise, first of all, the location and size of the primary tumour, determining the clinical target volume and the size of the irradiated mucosal membrane of the oral cavity and salivary glands;
- 3. Characteristic of the patient**, which do not only determine the risk of development, but also the intensity and duration of OM. These comprise: patient age, a history of tobacco and alcohol consumption, the presence of metal dentures, co-existing periodontal conditions, low body mass index (BMI), limited degree of physical fitness, decreased leucocyte count, advanced cancer stage, a history of oral cavity diseases, comorbidities and gene polymorphism (*XRCC1*, *NBN*), determining the cytokine phenotype facilitating the development of OM.

There are various scales used in clinical practice for the evaluation of the intensity of lesions within the oral mucosa (RTOG/EORTC, WHO, CTCAE) [1, 13, 14] (tab I).

OM is a problem which decreases the efficacy of radiotherapy (as it involves the necessity of intervals in therapy), deteriorates the patients' quality of life (OM symptoms and clinical outcomes), therefore the selection of effective treatment methods is necessary. Correct prophylaxis and treatment (i.e. symptomatic interventions and targeted methods) reduce OM intensity and thus will allow for the improvement of the efficacy of the local treatment and of patient survival. The significance of this grave clinical problem, as the development OM definitely is, justifies thoroughly working out the guidelines concerning its prophylaxis and treatment.

In 2019 an attempt was made to update the guidelines of MASCC/ISOO on the basis of the existing publications [16]. The results of this update and the recommendations of the Polish Group of Specialists in Prophylaxis and Treatment of Complications within the Oral Cavity published in 2015, and comprising the prophylaxis and treatment to be applied in patients undergoing radiotherapy, were discussed in detail in the paper: *Oral Mucositis (OM) – a Common Problem of Oncologists and Dentists*.

The MASCC/ISOO guidelines (update from 2019) confirm the significance of basic rules of oral hygiene in OM prophylaxis and the benefits resulting from adequate patient education [16].

The clinical significance of OM as well as the data coming from current publications point to the importance of oral hygiene in OM prophylaxis and treatment, and delineate the role of dentists in multi-disciplinary therapeutic proceedings in patients with head and neck cancers. The role of the dentist in OM prophylaxis and treatment cannot be overestimated. The algorithm of dental care of oncological patients, worked out in 2009 [17], confirms the necessity of interdisciplinary collaboration between oncologists and dentists.

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