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SFORL Guidelines

Management of somatic pain induced by head and neck cancer treatment: Pain following radiation therapy and chemotherapy. Guidelines of the French Otorhinolaryngology Head and Neck Surgery Society (SFORL)

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ABSTRACT

Objectives: The authors present the section of the guidelines of the French Otorhinolaryngology Head and Neck Surgery Society (SFORL) for the management of somatic pain induced by head and neck cancer treatment concerning management of pain following radiation therapy and chemotherapy.
Methods: A multidisciplinary work group was entrusted with a literature review. Guidelines were drawn up based on the articles retrieved and the group members' experience. They were read over by an editorial group independent of the work group. A coordination meeting drew up the final version. Guidelines were graded A, B or C or as expert opinion in decreasing order of level of evidence.
Results: Particular care should be given to detection and early adapted treatment of pain induced by radiation therapy and/or chemotherapy, to improve quality of life in head and neck cancer patients.

1. Introduction

Head and neck cancer is frequent in France, with 16,000 new cases diagnosed yearly [1] (level of evidence 1). Management is founded on treatment by surgery, radiation therapy or chemotherapy.

These treatments may be applied in isolation or association. They may induce painful symptomatology. The present article deals with the management of somatic pain induced by radiation therapy (RT) and/or chemotherapy.

2. Method

A multidisciplinary work group was set up and entrusted with a review of the literature. The group met several times and drew up a position paper for the guidelines. The resulting texts were read over by an editorial group independent of the work group. A coordination meeting drew up the final guidelines.

Guidelines were graded A, B or C by decreasing level of evidence, following the literature analysis and guidelines grading guide published by the ANAES national health accreditation and assessment agency (January 2000, Table 1). This classification is intended to explain the bases upon which the guidelines are established.

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Table 1
Levels of evidence and guideline grades.

Level of evidence from the literature	Guideline grade
Level 1	*Grade A*
High-power randomized comparative studies	Established proof
Meta-analysis of randomized comparative studies	
Decision analysis based on well-conducted studies	
Level 2	*Grade B*
Low-power randomized comparative studies	Scientific presumption
Well-conducted non-randomized comparative studies	
Cohort studies	
Level 3	*Grade C*
Case-control studies	Low level of evidence
Comparative studies with historical series	
Level 4	
Comparative studies with serious bias	
Retrospective studies	
Case series	
Descriptive epidemiological studies (transverse, longitudinal)	
Any other publication (case report, expert opinion, etc.)	Professional agreement
No publication	

Table adapted from Sackett Score, following the ANAES guide to literature analysis and grading of guidelines of January 2000.

3. Guidelines

3.1. Prevention and treatment of pain following radiation therapy

3.1.1. General prevention

Immediate post-RT pain is closely related to inflammation of the mucosa (mucositis) and skin (dermatitis) in the radiation field. Late pain is related to radiation-induced fibrosis of support tissue: costoclavicular or temporomandibular joint disorder, trismus, neuropathic pain, or more rarely brachial plexitis with loss of motor function.

RT, of whatever type, can induce pain, with intensity correlating with total dose and potentiation by chemotherapy [2] (level of evidence 1) or anti-EGFR antibodies and inversely correlating with total RT duration.

Prevention thus depends on treatment optimization in terms of irradiated volume, total dose and dose per session and associated potentiation.

As well as the obvious quality of life impact [3] (level of evidence 1), pain may necessitate interruption or termination of RT, impairing the chances of cure. The probability of tumour control has been shown to decrease by 1.4% per day of RT interruption [4] (level of evidence 3).

In recent years, RT techniques have progressed with the advent of conformal and intensity-modulated radiation, enabling better adaptation of dose to tumour and reduced exposure of healthy organs (conserved salivary function and reduced xerostomia [5] (level of evidence 2)).

These high-tech RT techniques improve quality of life [3,6] (level of evidence 3).

Guideline 1
To limit early and late toxicity, RT should at least be conformal and, if indicated, intensity-modulated, to deliver a homogeneous dose to target volumes and spare healthy tissue as far as possible (Grade B).

3.2. Prevention and treatment of acute post-RT complications

Management of acute pain (with onset during RT or generally within 9 weeks) consists in the usual WHO stepwise treatment of background and episodic (including paroxysmal) pain.

3.2.1. Prevention and treatment of radiation-induced mucositis

Onset of mucositis is classically at the end of the first week of RT and healing is usually achieved within 2 to 3 weeks of end of therapy [7,8] (level of evidence 4). Certain comorbidities, such as denutrition, should be screened as risk factors for mucositis [9] (level of evidence 4). Nutritional assessment should systematically precede RT. Once established, radiation-induced mucositis induces background pain exacerbated by paroxysmal episodes, mainly triggered by feeding or mere swallowing. Odynophagia, if not properly corrected, may lead to nutritional deficiencies which in turn may impair healing. Enteral feeding should be initiated early when there is risk of severe dysphagia, especially in case of potentiation [9,10] (level of evidence 3).

Smoking increases the intensity and duration of pain, due to increased local inflammation.

Prevention of pain is thus based on precise patient information (or "education") regarding hygiene and diet and also postural instructions, and preventing smoking and alcohol abuse (guidelines of the French Health Authority and National Cancer Institute: HAS/INCa).

Guideline 2
To reduce RT-induced pain, patients should be prescribed a nutritional assessment with hygiene and diet and postural instructions and cessation of smoking and alcohol abuse (Grade B).

Oral and dental care and hygiene should be systematic [8] (level of evidence 2). It is recommended to:

- assess and eradicate dental infection sites ahead of RT and transmit irradiated volumes to the dentist;
- use a soft toothbrush, replacing it regularly [9] (level of evidence 3);
- apply fluoride (Fluocaril Bi Fluore 2000®: the only fluoride gel with market authorization in France) to the thermoformed gutters throughout RT and then lifelong;
- perform regular mouth-rinse with non-alcoholic saline solution [9] (level of evidence 2).

Bacterial, fungal or viral superinfection should be screened for, as it prolongs and exacerbates lesions, while treatment helps relieve pain.

Guideline 3
To prevent and treat radiation-induced mucositis, it is recommended to (Grade B):

- assess and eradicate dental infection sites ahead of RT and transmit irradiated volumes to the dentist;
- use a soft toothbrush, replacing it regularly;
- apply fluoride to the dental splints;
- perform regular mouth-rinse with non-alcoholic saline solution;
- ensure early diagnosis and treatment of any bacterial, fungal or viral superinfection.