

Oral Care Management Tips for Healthcare Professionals: Mucositis, Candidiasis, Xerostomia

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Oral Care: Mucositis

Step 1. Top underlying treatable causes and diagnosis:

- Mucositis is a highly unpleasant side-effect of many chemotherapies, including 5FU used in colorectal cancer, as well as head and neck radiotherapy. It is characterized by inflammation and breakdown of the oral mucosa with the formation of erythema and painful ulcers. Several grading scales can be used based on symptom severity, or appearance, or both. One example is:

ORAL MUCOSITIS GRADING SCALE				
NCI Common Terminology Criteria for Adverse Events (Version 4.03)				
Grade 1 (Mild)	Grade 2 (Moderate)	Grade 3 (Severe)	Grade 4 (Life-threatening)	Grade 5
Asymptomatic or mild symptoms; Intervention not indicated	Moderate pain; not interfering with oral intake; modified diet indicated	Severe pain; interfering with oral intake	Life-threatening consequences; urgent intervention indicated	Death

Adapted from: <http://www.bccancer.bc.ca/nursing-site/Documents/12.%20Oral%20Mucositis.pdf>

- Contributing factors to consider:
 - Periodontal disease e.g. gum disease, trauma from ill-fitting dentures, or salivary gland dysfunction
 - Medications causing dry mouth e.g. anticholinergics
 - Smoking and Alcohol
 - Secondary Infection

Step 2a. Non-pharmacological management:

Provide patient information on self-care

- Share patient guide with patient/family "[Mouth and Dental Care for Cancer Patients](#)".
- Ensure patient knows how to optimize their routine oral hygiene and nutrition before, during and after their cancer therapies
- Help [enable access to dental care](#) if needed

Review Basic Advice

Hard, acidic, salty or spicy foods can irritate the tissues. Cool or lukewarm foods and soft, pureed foods may be better tolerated. Alcohol and tobacco should be avoided. Poorly fitting dentures or sharp teeth may exacerbate symptoms and should be corrected. Dentures may need to be refitted on more than one occasion if there is progressive weight loss. Partly edentulous **elderly** are at particularly high risk for poor chewing and swallowing function, so soft and pureed foods become more important for this group.

Recommend alcohol-free rinsing after meals (e.g. with club soda or 1 tablespoon of sodium bicarbonate in 2 cups of water) and high fluoride content toothpaste (5000ppm) used twice daily e.g. Prevident 5000 plus.

Step 2b. Pharmacological options:

Mouthwash for oral hygiene

Use an **alcohol-free chlorhexidine mouthwash** as tooth brushing is unlikely to be adequate for plaque removal. If the mouth is too painful for cleaning with a toothbrush, oral sponges can be used with alcohol free chlorhexidine mouthwash for cleaning.

- Directions: Swish 15 mL in your mouth undiluted for 30 seconds, then spit out. Use after breakfast and before bedtime, avoid eating or drinking for approximately 30 minutes after its use.

Preventing and relieving mild mucositis (grade 1)

Benzydamine hydrochloride mouthwash (15 ml used four to eight times daily) starting before, during, and for two or three weeks after head and neck radiotherapy or chemotherapies causing mucositis, to help reduce the frequency and severity of symptoms, however it contains alcohol and can sting or burn (this may be avoided by diluting with equal parts of lukewarm water prior to use). For certain chemotherapy regimens only, such as bolus 5-FU, patients will be directed by the treating team to use oral cooling (ice chips) 30 minutes prior to administration.

Symptom relief (grade 2-3)

In addition to the above management, “Magic mouthwash” preparations that are compounded solutions that may help with symptom relief. In Alberta, **Akabutu’s and Pink Lady** are commonly used. THESE FORMULATIONS ARE NOT BASED ON LITERATURE, but are from unpublished data, historical use, or physician/pharmacy experience.

Akabutu’s mouthwash has to be compounded by pharmacies and contains: Nystatin 100,000 unit/ml 42 ml, Lidocaine HCL Viscous 2% 50 ml, Sodium chloride 0.9% 200 ml, Hydrocortisone 10 mg x 5 tabs, glycerin 100% 4 ml. Swish/gargle 15-30 ml in mouth/throat x 1 minute (spit out excess), q4-6h prn. Avoid eating or drinking for approximately 30 minutes after its use.

Pink Lady is also compounded and contains: Equal parts Lidocaine viscous 2% oral solution and Aluminum hydroxide-magnesium hydroxide (Maalox, Almagel or equivalent) Swish/gargle 15 ml in mouth/throat x 1 minute (spit out excess), q4h prn, best used 20 mins prior to meals (Caution: **systemic side-effects of lidocaine, including fatal arrhythmia**)

Severe Mucositis (grade 3-4)

In addition to the above management suggestions:

- Consider systemic opioids ([see pain tips](#)) or a topical opioid mouthwash obtained from a compounding pharmacy, e.g. 0.2% morphine mouthwash (i.e. morphine diluted in water to 2 mg/ml), hold 10 ml in mouth next to painful areas for 2 mins **then spit out**, q4h prn). (Caution: patient **not to swallow the mouthwash because of the systemic side effects**. 10 ml of the rinse contains 20 mg morphine)

- Consider use of 2% lidocaine viscous solution orally, 15 ml swish x1 minute and spit, or for pharyngeal mucositis gargle and spit/swallow, q3h prn (Caution: **systemic side-effects of lidocaine, including fatal arrhythmia**)

Step 3. When to refer to specialists:

- Oncology:
 - For grade 3 or 4 mucositis alert the oncologist; urgent hospital admission may be needed for hydration, antibacterial, antiviral, antifungal and other therapies.
- Palliative care:
 - For additional pain management suggestions or when mucositis is associated with other distress and suffering e.g. physical, social, psychological symptoms or functional impairment.

NOTE: Guidelines do not replace individualized care and clinical expertise.

Oral Care: Candidiasis

Step 1. Top underlying treatable causes and diagnosis:

- Patients receiving steroids, chemotherapy and/or radiotherapy are at increased risk of developing oral candida infections.
- Clinical appearance whitish plaques on the tongue or oropharyngeal mucosa, lesions that easily bleed and can be scraped away with a tongue depressor. Sometimes dry mouth with bacterial overgrowth on the tongue is mistaken for candidiasis. When needed, candida diagnosis can be confirmed by swab or scraping stain/culture.

Step 2a. Non-pharmacological management:

- **Denture hygiene:** Denture hygiene should be reinforced. During active infection an antifungal agent can be applied to the impression surface of dentures, provided there are no contraindications. Dentures can also be soaked in chlorhexidine mouthwash but note that chlorhexidine and nystatin should not be used together due to inhibition of the antifungal properties.

Step 2b. Pharmacological options:

- **Mild infection:** Topical treatments can be considered such as Nystatin suspension (500,000 units) 5 mL po qid x 7-14 days. Swish and swallowed or swish and spit depending on location of infection and patient tolerability. Try to swish for AT LEAST 1-2 minutes. The longer the contact the better. Patients with dentures should remove dentures prior to topical treatments.

- **Moderate and severe infection:**
 - 1st line: Fluconazole 100-200mg po daily x 7-14 days.
Caution *multiple drug interactions with fluconazole (Inhibits CYP34A, CYP2C9 and CYP2c19)*. If Fluconazole-refractory disease: Itraconazole 200mg po daily x 7-14 days.

Step 3. When to refer to specialists:

- Alert the oncologist, if febrile, not responding to treatment or dehydrated. Urgent hospital admission to rule out systemic fungal infection, or for hydration and other therapies may be needed.

NOTE: Guidelines do not replace individualized care and clinical expertise.

Oral Care: Xerostomia

Step 1. Top underlying treatable causes and diagnosis:

- Abnormal dryness in the mouth characterized by a marked decrease and/or thickening of saliva, may be acute or chronic. This is very common side effect of oncology therapies: chemotherapy, radiation, surgical excision of salivary glands and of medication, including:
 - Opioids
 - Anticholinergics and antispasmodics
 - Antihistamines
 - Antipsychotics
 - Antidepressants
 - Diuretics
 - Anti-parkinsonians
 - Bronchodilators
- Other causes:
 - Immune disorders e.g. sjorgens
 - Dehydration
 - Oxygen therapy
 - Alcohol and smoking
 - Anxiety

Step 2a. Non-pharmacological management:

Provide patient information on self-care

- Share patient guide with patient/family [“Mouth and Dental Care for Cancer Patients”](#). Ensure patient knows how to optimize their routine oral hygiene before, during and after their cancer therapies.
- Help [enable access to dental care](#) if needed.

Review Basic Advice

- Alcohol and tobacco should be avoided.
- Advise against sipping on fruit juice, soft drinks or flavoured water due to the acidic nature of the drinks, which can worsen dental erosion.
- Discourage sugary drinks because of the increased risk of dental caries. Stimulation by sugar free chewing gum or sucking on sugar free-lozenges may be recommended where there is some salivary function, although the evidence base for this is limited.
- Rinse mouth with water or sugar free mouthwash after eating/drinking. Try saliva replacement either with frequent sipping or sprays of water, or with artificial salivary replacement.
- Review medication and reduce or change any exacerbating medications where possible.

Step 2b. Pharmacological options:

- Artificial saliva 1-2 sprays prn
- The use of sialogogues e.g. pilocarpine may be considered (Caution: **elderly**).

Step 3. When to refer to specialists:

- Dentist:
 - Follow-up at 3-6 months post cancer treatment by a dentist with expertise in dental oncology.
- Surgical:
 - Procedures may be considered, such as salivary gland transfer for post head and neck radiotherapy xerostomia.
- Palliative care:
 - Consult when xerostomia is associated with other distress and suffering e.g. physical, social, psychological symptoms or functional impairment.

End of Life Considerations:

Keeping the mouth moist and clean is an important part of serious illness and end of life care. It may help to reduce thirst, maintain speech quality and reduce distress for both the patient and family. The degree of cueing, preparation and assistance for teeth brushing, denture care and general oral hygiene will depend on the patient's level of awareness and functional ability.

Patients with reduced consciousness level can benefit from refreshing the mouth frequently using gauze swabs, cloth or sponges with water or club soda.

Moisten dry lips with a water-based moisturizing gel (such as oral balance) and use artificial saliva. Avoid petroleum- or alcohol- based mouth care products as they cause dryness. Consider a humidifier in dry environments.

A [video](#) from Canadian Virtual Hospice shows how to perform mouth care.

NOTE: Guidelines do not replace individualized care and clinical expertise

References:

These tips are based on the [AHS “Oral and Dental Care management in head and neck cancer” guideline](#) (Jan 2017)
Additional clinical practice guidelines for the management of mucositis secondary to cancer therapy:

MASCC/ISOO

<https://www.mascc.org/assets/Guidelines->

[Tools/mascc%20isoo%20mucositis%20guidelines%20summary%207nov2014.pdf](https://www.mascc.org/assets/Guidelines-Tools/mascc%20isoo%20mucositis%20guidelines%20summary%207nov2014.pdf)

BC Cancer

<http://www.bccancer.bc.ca/nursing-site/Documents/18.%20Xerostomia.pdf>

<http://www.bccancer.bc.ca/nursing-site/Documents/12.%20Oral%20Mucositis.pdf>

Links List

1. Patient guide booklet [“Mouth and Dental Care for Cancer Patients”](#).

<https://www.albertahealthservices.ca/assets/info/hp/cancer/if-hp-cancer-guide-mouth-dental-care.pdf>

2. How to get dental care in the Calgary Zone <https://www.albertahealthservices.ca/assets/programs/ps-1042857-dental-treat.pdf>

3. How to do mouth care video

http://virtualhospice.ca/en_US/Main+Site+Navigation/Home/Support/Support/The+Gallery/Caregiving+Demonstrations/Personal+hygiene+ +Helping+with+mouth+care.aspx#video_content_details

4. AHS “Oral and Dental Care management in head and neck cancer” guideline

<https://www.albertahealthservices.ca/assets/info/hp/cancer/if-hp-cancer-guide-hn001-dental-oral.pdf>

5. MASCC/ISOO clinical practice guidelines for the management of mucositis secondary to cancer therapy:

<https://www.mascc.org/assets/Guidelines->

[Tools/mascc%20isoo%20mucositis%20guidelines%20summary%207nov2014.pdf](https://www.mascc.org/assets/Guidelines-Tools/mascc%20isoo%20mucositis%20guidelines%20summary%207nov2014.pdf)

6. Pain tips: <https://www.albertahealthservices.ca/assets/info/hp/cancer/if-hp-cancer-guide-sup012-cancer-pain-summary.pdf>



Vision: Improving quality of life for Albertans with advanced cancer.