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# Managing mouth and skin care post chemotherapy/radiotherapy

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# Managing mouth and skin care post chemotherapy/radiotherapy

**Abstract**
After reading this article, the pharmacist should be able to: • Provide a customer with information about appropriate mouth care during and following chemotherapy and radiotherapy. • Recommend appropriate therapy for gastrointestinal symptoms experienced post-chemotherapy and radiotherapy. • Provide a customer with information about appropriate skin care following chemotherapy/radiotherapy.

**Keywords**
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# Managing a patient's post-chemotherapy/radiotherapy: Focusing on mouth care and skin care

*Learning Objectives*

After reading this article, the pharmacist should be able to:

- Provide a customer with information about appropriate mouth care during and following chemotherapy and radiotherapy.
- Recommend appropriate therapy for gastrointestinal symptoms experienced post-chemotherapy and radiotherapy.
- Provide a customer with information about appropriate skin care following chemotherapy/radiotherapy.

*Introduction*

Chemotherapy and radiotherapy are used in cancer treatment to promote cell death and apoptosis [1]. Aggressive chemotherapy and radiotherapy treatments can affect rapidly dividing normal cells (e.g. alimentary tract mucosa) [2, 3] potentially causing adverse effects such as mucositis, salivary gland dysfunction, taste dysfunction, ulceration, pain, bloating, vomiting and diarrhoea [2, 4, 5, 6]. These adverse events can lead to more serious complications such as dehydration, malnutrition and systemic infection which can negatively impact on the patient's quality of life and morbidity [2, 5]. Management of alimentary tract complications, both preventive and therapeutic, are therefore a high priority.

*Case Study*

**Mr RJ is a 55-year old, previously healthy man, who has been diagnosed with advanced stage 4 nasopharyngeal small cell carcinoma. His treatment regimen will consist of up to 8 cycles of cisplatin 40 mg/m$^2$ by intravenous infusion weekly with concurrent radiotherapy. He will be also be given oral anti-emetics dexamethasone (8 mg daily) for days 2–4, and additional metoclopramide (10–20 mg every four hours when required). After receiving his first cycle of cancer treatment, Mr RJ asks your advice on maintaining good oral hygiene as he has been told it is extremely important.**

**1. How can Mr RJ achieve good oral hygiene?**

Ideally, Mr RJ should have been advised to visit his dentist one month prior to his cancer treatment as completing all necessary interventions prior to treatment can reduce oral complications. Mr RJ should be advised to use a soft bristle, small-head (manual or electric) toothbrush. He should brush his teeth, using a gentle small circular motion, at least twice daily using toothpaste which is free of the irritant detergent sodium lauryl sulphate (SLS). These SLS-free toothpastes, as well as fluoride treatments and/or toothpaste for sensitive teeth, should be highly recommended for customers who complain of sore ulcerated mouths with sensitive teeth[4]. Alternatively, amosan® sachets dissolved in water and used as a mouth rinse can be used instead of tooth paste [7]. Appropriate use of dental floss or dental tape, at least once daily could also be recommended, but only under a dentist's advice when ulceration is present.

In addition to teethbrushing and dental flossing, Mr RJ's would benefit from regular (3–4 times per day) mouthwashes using either plain water or water with additives (e.g. sodium bicarbonate, sodium chloride, lemon juice, sodium citrotartrate)[8]. Alcohol-free over-the-counter mouth washes can also be recommended.

**2. What if a patient has dentures?**

Patients with dentures should clean them daily with a toothbrush or denture brush, and soak them overnight in warm water or a denture cleaner. Customers receiving chemotherapy and/or radiotherapy commonly experience significant weight loss which changes the fit of dentures. Dentures should be promptly adjusted by a dentist if they become loose.

**Two weeks later Mr RJ returns to the pharmacy complaining of a very dry and painful mouth which makes it difficult for him to swallow and a change in the taste of his food. For the past few days after receiving his last cancer treatment he has had very loose stools.**

### 3. How can Mr RJ treat his dry mouth?

Mr RJ's dry mouth (xerostomia) has probably been caused by the radiotherapy damaging his salivary glands. To avoid negative impacts on his health and nutritional status it is important it is treated appropriately [8]. Non-pharmacological measures such as taking frequent sips of water; sucking on sugarless lollies, ice cubes, ice-blocks, frozen lemon slices, frozen tonic water; eating sugar-free pineapple pieces or chewing sugarless gum can induce saliva flow.

Alternatively, topical fluoride gel (e.g. 0.4% stannous fluoride gel) could be applied to his teeth each time he brushes and at night. Artificial saliva (e.g. (Aquae®, Biotene Oralbalance®, Oralube®) can make it easier to eat, swallow, talk and sleep. Applying lanolin-based preparations or lip balms can help to avoid dry and chapped lips [8, 9].

### 4. What would you recommend to treat Mr RJ's mouth pain?

The Palliative Care Therapeutic Guidelines [8] and the American Cancer Society, Updated Mucositis Practice Guidelines [3], recommend one of following symptomatic treatments be used prior to undertaking his oral hygiene regimen (e.g. tooth brushing), and before meals.

- Benzydamine 0.15% (Difflam®),10–15 ml rinse and spit, 4 hourly
- Lignocaine viscous 2% (Xylocaine viscous®), 10–15 ml rinse and spit, 4 hourly. Can be swallowed to help alleviate throat pain[7]
- Aspirin or paracetamol gargles, 4 hourly or as required
- Choline salicylate gel (Bonjela®, Ora-sed® gel, Seda-gel®) applied topically every 4–6 hours

It is noteworthy, that benzydamine is the only mouthwash recommended by the Multinational Association of Supportive Care in Cancer (MASCC) which does not recommend the use of chlorhexidine. Other mouthwashes including vitamin $B_{12}$ and sucralfate have been used in palliative care but there is no clinical evidence to support their use [7]

The protective paste Orabase® used alone or in combination with triamcinolone (Kenalog®) can be applied to ulcerated areas to reduce pain [7]. Anecdotally, Gelclair® has also been found to help reduce pain in mouth ulcers by providing a protective barrier [7].

**5. What would you recommend for persistent mouth pain?**

If pain persists, Mr RJ may consider the regular use of a mild oral analgesic such as paracetamol, (avoiding NSAIDS which may promote bleeding). He may even require stronger opioid analgesics prescribed by his doctor or oncologist. In very severe cases of oral mucositis pain, patient-controlled analgesia (PCA) with morphine may be necessary [3, 10]. Pain may also be a result of infection, requiring treatment with antibiotics and/or antifungal agents under the direction of his doctor or oncologist.

**6. What can be done about Mr RJ's problem with swallowing?**

Following the use of the steps described previously, if Mr RJ continues to have trouble swallowing he should be advised to eat small, relatively soft and bland meals and to avoid spicy, acidic or citrus foods/drinks and alcohol. If his cancer treatment has significantly reduced his appetite and hence his nutritional intake, you may recommend proprietary balanced nutritional supplements. These liquid diets and nutritional drinks can be offered as meal replacement or supplements to maintain calorific, vitamin and mineral intake. Patients who receive concomitant chemotherapy and head and/or neck radiotherapy often require enteral nutrition support to maintain their nutritional status [6]. Mr RJ should be encouraged to seek a dietician's advice sooner rather than later. If hyperacidity and gastric reflux become a problem, he could commence either an oral proton pump inhibitor (e.g. oral omeprazole 20 mg daily) or oral ranitidine 300 mg daily [8].

**7. Is a change in taste common?**

Changes in taste are common side effects of chemotherapy and radiation therapy [6]. For some, taste returns to normal within a few months of

treatment, whereas for others the changes may be permanent. According to the US National Cancer Institute [6] zinc sulphate supplements can help with the recovery of taste for some patients. Mr RJ may wish to consider this option following the completion of his cancer treatment.

Although not warranted in Mr RJ's case, oral mucositis in patients receiving chemo-radiation can be managed with palifermin (Kepivance® a recombinant human keratinocyte growth factor) for haematological malignancies; or amifostine (Ethyol® an antioxidant) for non-small cell lung cancer and low-level laser therapy for haematopoietic cell transplantation patients [11].

**8. Should Mr RJ be concerned about his diarrhoea?**

Abdominal pain, bloating and diarrhoea are common transient side effects of chemotherapy. Long-term complications associated with radiation therapy may include malabsorption and dysmotility [10]. Mr RJ's diarrhoea almost certainly is a result of his cancer treatment and needs to be controlled to avoid any additional complications. Cisplatin, in particular, can cause nephrotoxicity which is why he needs to understand the importance of his antiemetic therapy and the need to be well hydrated. He should be encouraged to drink as often as possible, especially when he is experiencing diarrhoea symptoms. If diarrhoea persists he may need to take oral rehydration therapy (e.g *Hydralyte®, Gastrolyte®, Repalyte®*) and loperamide (4 mg initially, followed by 2 mg after each loose bowel motion, [12] and 4 mg every 4 hours during the night [13]. If diarrhoea is severe and loperamide (or l*ofenoxal*) has no effect then subcutaneous octreotide (100–150 mcg and increasing as necessary) may be useful [13].

Other strategies currently being investigated for the prevention and/or treatment of cancer therapy-induced diarrhoea include: the use of non-absorbable antibiotics (e.g. neomycin and bacitracin); kampo medicine (Hangeshashin-to); chrysin; bowel alkinisation and defecation control; activated charcoal; glutamine, thalidomide, fish oils and cox 2 inhibitors [13].

**Mr RJ returns after his third round of cancer treatment and has lost almost all of his hair which he says doesn't really bother him very much. He does however, complain that his skin is very dry, itchy and flaky, and that his finger nails have discoloured.**

**9. Can cancer treatment affect the skin or nails?**

Alopecia is the most common cutaneous side-effect of chemotherapy, while transient erythema, pruritus, dry skin and hyperpigmentation are often seen within 2 to 4 weeks of treatment with combination chemotherapy and radiotherapy [4, 14]. In addition to skin reactions, such combination treatments can cause changes to the nails - giving them a dark, yellow or cracked appearance [6] with Beau's lines (transverse white) across the nail plate [14].

**10. What can you recommend to alleviate his itchy skin symptoms?**

Because Mr RJ's scratching could potentially introduce an infection, his dry itchy skin should be treated. He should use mild soaps, soap substitutes or bath oil; moisturising creams or lotions (aqueous based) or perhaps even soothing lotions containing menthol, phenol or camphor. He should always use sunscreen, lip balm and appropriate clothing when exposed to ultraviolet light, and avoid perfumed soaps, deodorants, ointment, tape, bandages. Heat packs or ice packs which could also exacerbate his skin irritation [4]. Short, tepid showers or baths, as well as cotton clothing and bedding should also be recommended to reduce his itching sensations.

If shaving is painful, he could shave less frequently, use a gentle electric razor or even stop shaving until his skin becomes less sensitive. To help protect his hands and nails he should keep his fingernails short and wear gloves whilst working in the garden or doing household chores.

If none of these strategies alleviate his itchy skin symptoms, Mr RJ could use one or more of the following:

- topical corticosteroids[15] ;
- antihistamines (e.g. promethazine 10–25 mg orally, 2–3 times daily or trimeprazine 10 mg orally 3–4 times daily [8]); and/or

- antidepressants (doxepin 10–50 mg orally at night or paroxetine 20–30 mg orally in the morning) [8].

In summary, Mr RJ's cooperation with regard to good overall health care is integral to the success of his cancer treatment. It is your professional responsibility to educate him appropriately about the importance of good oral hygiene and nutritional intake, as well as the management of his symptoms in order to achieve optimal health outcomes.

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*Multiple Choice Questions*

**Choose ONE correct option for each of the following questions**

**1. Chemotherapy and radiotherapy are used in cancer treatment to promote:**

a) alopecia

b) apoptosis

c) berylliosis

d) psittacosis

e) silicosis

**2. Xerostomia is also known as:**

a) sore mouth

b) swollen tongue

c) sensitive tooth

d) dry mouth

e) soft stool

**3. The treatment of choice for very severe oral mucositis pain is:**

a) Aspirin

b) Benzydamine 0.15%

c) Lignocaine viscous 2%

d) Paracetamol with Codeine

e) Patient controlled analgesia (PCA) with morphine

**4. Patients receiving cisplatin therapy should be well hydrated to avoid:**

a) cardiotoxicity

b) nephrotoxicity

c) neurotoxicity

d) ototoxicity

e) thyrotoxicity

5. **Which ONE of the following agents would be considered as first line treatment for chemotherapy/radiotherapy induced diarrhoea?**

a) Activated charcoal

b) Chrysin

c) Glutamine

d) Loperamide

e) Octreotide

Answers: 1 (b) apoptosis ; 2. (d) dry mouth; 3. (e) Patient controlled analgesia (PCA) with morphine; 4. (b) nephrotoxicity; 5. (d) Loperamide