Lend a helping hand
to cancer patients
with oral mucositis

Four case studies highlight benefits of oral rinse

BY ALISA COOPER, DC, CCN, AND EILEEN MORRISSEY, RDH

A cancer survivor said, “Mouth sores might not be your biggest problem when you have cancer, but the mouth is a lifeline for fighting it and the sores interfere with the process of trying to nourish yourself and stay alive.”

The oral mucosa is exquisitely sensitive and highly susceptible to the effects of chemotherapy and radiation. As such, oral mucositis is a common side effect of cancer treatment. Affecting all areas of the oral cavity, mouth sores can range from mild, moderate, to severe. Lesions can present as painful, red, shiny patches with indurated, white, pus-filled centers or manifest as increased mucus, thicker saliva, and/or swollen gingival tissue that is susceptible to bleeding.

Oral mucositis can also affect the tongue as well as the throat and it can coincide with xerostomia and halitosis. Most significantly, it can result in formidable pain upon chewing and swallowing, which can prevent adequate hydration and nutrition. Over time, this can weaken the patient’s immune system, increase their fatigue, and dampen their mental outlook.

The quality of a patient’s life, and often their very life itself, can be compromised by oral mucositis. If mouth sores become ulcerated or infected, hospitalization may be required for parenteral nutrition and analgesics. Besides the potential threat of systemic bacterial infection, the sores can interrupt the planned treatment schedule and result in patients missing or...
Cancer-related mouth sores can be extremely painful making it difficult to eat, talk, swallow and breathe. They can be so severe they may prevent a patient from continuing their cancer treatment. Introducing CloSYS oral care products, while not a prevention, CloSYS is recommended by leading cancer centers and chemotherapy drug makers to help ease the side effects of painful mouth sores.
needing reduced doses that could undermine their chances for survival.

The prevalence of oral mucositis is high, with nearly 40% of chemotherapy patients developing it to some degree. It characteristically begins five to 10 days following the start of treatment and generally lasts from one to six weeks after it ends, although it can persist for as long as 46 to 104 days afterward. The widely held belief that mucositis is generally short-lived may actually cause patients to be complacent when vigilance with oral care is required to manage the condition. Registered dental hygienists can educate and direct patients accordingly, leading to better compliance and a more favorable outcome.

There have been numerous studies investigating various medications and interventions that aim to reduce the incidence and severity of mucositis. While some common agents are effective at reducing the symptoms of oral mucositis, none have been shown to prevent it. Presently, the treatment of oral mucositis most often involves the use of oral rinses.

Chlorhexidine, or CHX, for example, is a commonly used antibacterial rinse. While it cannot prevent or reverse mucositis, it can treat gingivitis and plaque, two signs of poor oral health that augment mucositis. Long-term use of CHX, however, can lead to discolored teeth (that is usually reversible) and mucous membranes. Cetylpyridinium chloride, or CPC, is a broad spectrum antiseptic and mucous membranes. 5 CMC, however, can lead to discolored teeth (that is usually reversible) and mucous membranes. Cetylpyridinium chloride, or CPC, is a broad spectrum antiseptic and mucous membranes. 5

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The use of antivirals and antifungals in oral mucositis helps manage the condition by targeting concomitant infections. For example, antiviral medications such as acyclovir effectively prevent the reactivation of herpes simplex virus, and antifungals such as fluconazole, nystatin rinses, and clotrimazole troches treat or prevent candidiasis. Eliminating such infections can prevent exacerbations of mucositis, allowing patients to proceed with their scheduled treatments.

One medication used to foster healing of the mucosa is Palifermin. Often prescribed for patients receiving a stem cell transplant, Palifermin has proven effective at reducing the length and severity of oral mucositis. Unfortunately, common side effects include skin rashes, achy joints, hypertrophy, discoloration of mucous membranes, and altered taste sensation.

Recent research has demonstrated that the use of oral glutamine may reduce the duration and severity of oral mucositis during radiotherapy with little to no side effects. Glutamine, the most abundant free amino acid in the body, has already proven effective against chemotherapy and radiation-induced intestinal injury by way of its anti-inflammatory properties.

A by-product of glutamine metabolism is glutathione, the body’s most potent free radical scavenger. Patients with cancer demonstrate a depletion of skeletal muscle glutamine and subsequent glutathione over time. This depletion might influence, in part, the amount of normal tissue damage caused by the oxidative effects of chemotherapy or radiation. Certainly, further research is needed to determine the safety and efficacy of this natural product in eradicating oral mucositis.

It is widely recognized that oral mucositis and its complications are generally managed via a thorough, consistent oral care regimen. From brushing frequently with a non-abrasive toothpaste and soft-bristle toothbrush to flossing gently and using oral rinses, proper oral hygiene can reduce mucositis pain as well as the bacterial load that can lead to secondary infections.

A mouth rinse gaining popularity is CloSYS unflavored mouth rinse. CloSYS products are alcohol-, sulfate-, triclosan-, and gluten-free. Designed to eradicate harmful bacteria without the use of alcohol or irritating additives, the products also eliminate volatile sulfur compounds (VSC) that cause halitosis. Dentists and dental hygienists recommend them for general oral health and to relieve the discomfort of canker sores, but their application in addressing the cankerous lesions, dry mouth, and gingivitis of mucositis is growing. Certain cancer hospital facilities, such as the Cancer Treatment Centers of America (CTCA) at Western Regional Medical Center (Western), have added CloSYS products to their formularies for patients undergoing chemotherapy or radiation, and at least one major pharmaceutical manufacturer of chemotherapy medications, Novartis, is dispensing CloSYS to patients taking their breast cancer drug, Afinitor.

Following positive feedback from registered dental hygienists using the CloSYS oral health system to alleviate gingivitis, glossitis, and halitosis in Down syndrome patients, Rowpar Pharmaceuticals, LLC, conducted a patient survey and subsequent interviews to ascertain product effectiveness with oral mucositis in cancer patients. The following four case histories from their files reflect diverse patient experiences that may prove helpful to others.

Treatment for this patient’s cancer recurrence was a combination of chemotherapy and radiation. Five days after beginning treatment, she developed oral mucositis, not unlike the canker sores she suffered from most of her life but much more severe.

The sores, red with pus-filled centers located diffusely throughout her oral cavity, caused severe pain that interfered with eating and drinking. The crunchy, spicy foods the patient preferred were no longer tolerable, and toast, her favorite food, cut into the sores. The patient existed primarily on tepid soup and mashed potatoes. The patient shared that the mouth sores made her cancer experience more difficult and that she endured the pain of eating in order to maintain her stamina.

The patient’s oncology nurse provided her with a pamphlet on the CloSYS products and after doing her own research, she ordered CloSYS toothpaste and unflavored mouth rinse. She liked that the products did not contain any irritants or alcohol that could potentially worsen her already inflamed mouth. She began brushing her teeth three to four times a day and rinsing several times a day between brushings.

After one week of using CloSYS products, the patient was able to swallow with less difficulty, and by the second week, the mucositis began to heal. Fewer and fewer cancerous lesions were noticeable as the weeks progressed, and the patient reported that she could chew and swallow without pain, vastly improving her mood and outlook.

While the patient still experiences occasional mouth sores, she is grateful for the relief she obtained during her treatments and the oral health benefits she continues to derive from the daily use of CloSYS products.

CASE 2: Halitosis in a 46-year-old female diagnosed with nodular sclerosis Hodgkin lymphoma (stage 2A) in 2011.

This patient’s treatment regimen consisted of six rounds (12 treatments) of ABVD chemotherapy (a combination of adriamycin, bleomycin, vinblastine, and dacarbazine).

The patient developed mucositis within four days of her first treatment. The lesions were red with white, ulcerated centers that felt like craters when her tongue brushed against them. The sores, numbering between eight to 10, were located inside the right buccal mucosa; the side she slept on.

Throughout her treatment, the patient craved spicy foods and fresh pineapple. While these favorite foods could have provided some comfort, the burning sensation they elicited made them impossible to tolerate. Additionally, each time the sores began to heal it was time for another treatment, and the lesions would return worse than before.

The patient decided to try Biotene after reading about it on a cancer blog, but the product had a taste and feel that nauseated her. The patient continued her search for oral health remedies to ease not only the sores but the significant xerostomia and subsequent halitosis that had developed along with them.

The patient discovered the CloSYS unflavored mouth rinse online, and immediately upon using it noticed that her mouth felt moist. There was no heavy, oily feel or sugary, minty taste to sour her stomach, and within three days the patient’s breath was greatly improved. Impressed, her husband began using the CloSYS toothpaste, and they both still use it daily.

During her treatment, the patient brushed her teeth and rinsed her mouth twice a day with the CloSYS toothpaste and unflavored rinse, respectively. While she still developed mouth sores following treatments, they were not as severe and always healed quickly, making the treatment process more physically and emotionally tolerable.


This patient’s cancer treatment consisted of six monthly chemotherapy infusions of Taxol and carboplatin. The original goal was to administer the treatments weekly, but the side effects were too overwhelming for the patient and treatments needed to be spaced accordingly. The patient recalled that she was plagued with mouth sores both inside and at the corners of her mouth within one week of her very first treatment.

The patient’s mucositis intensified following each treatment resulting in a cumulative effect that involved not only the buccal mucosa but the gingival tissues and teeth as well. While removing a tooth that had fractured and decayed, her dentist noticed the widespread gingivitis. The dental hygienist recommended CloSYS products for their antimicrobial action and the positive effects on gingival tissues she had observed in other patients with oral mucositis while undergoing chemotherapy.

Three months after starting on the CloSYS toothpaste and unflavored rinse, the dentist and hygienist noticed a significant reduction in the patient’s gingivitis. The patient herself noted that her gums had stopped bleeding within the first month of using the CloSYS products.

In addition to oral mucositis, the patient was also plagued with a medicinal smell and taste that lingered on her breath from chemotherapy. She had tried mints, gum, and butterscotch candies to no avail. Having had good results with CloSYS products, she began brushing her teeth every two to three hours. Employing that regimen kept the heavy medication taste temporarily at bay, enabling her to ingest water and food without incident. As the patient said, “You feel so alone and lousy that you are very grateful to have one thing that makes you feel better.”
LEND A HELPING HAND TO CANCER PATIENTS WITH ORAL MUCOSITIS

CASE 4: Herpes simplex cold sores in a 50-year-old female diagnosed with breast cancer in 2012.

This patient’s cancer treatment consisted of a lumpectomy followed by radiation daily for eight weeks and the ongoing oral administration of tamoxifen.

Prior to developing cancer, the patient had been prone to both canker sores and cold sores, with outbreaks of one or the other occurring on a monthly basis. Her doctor had recommended Abreva and Biotene, but none seemed to relieve or prevent her outbreaks. A friend suggested the CloSYS toothpaste, and with its everyday use, the patient’s outbreaks went from monthly to approximately one outbreak every six months.

The patient switched to another brand when she ran out of the CloSYS toothpaste during her cancer treatments, but the sores multiplied and were resistant to healing. The sores were diffusely located on her tongue, along the gum line, and around her teeth. The oral mucositis made it uncomfortable, even unbearable at times, for the patient to eat and drink. She suffered from nutrient depletion which magnified the fatigue from the treatments. The patient’s sores were an added burden to her already challenged system, and this distressed her greatly.

By the time the patient finished her first tube of CloSYS toothpaste, the sores had abated. Although she could go for periods of time without sores, a pattern eventually emerged: when she ran out of CloSYS toothpaste and switched to another brand, the sores would reappear; when using the CloSYS toothpaste again, the sores would subside. Presently, the patient uses CloSYS toothpaste prophylactically and finds that only a small amount is required to maintain optimal oral health.

Oral mucositis is possibly the most prevalent and debilitating side effect of chemotherapy and radiation. It can interfere with one’s ability to eat and drink at a time when adequate, even superior, nutrition is indicated. It can be so painful as to be dose limiting, thereby compromising the patient’s best chance for survival. Although various medications and modalities address pain and secondary infections, proper oral care remains the mainstay for managing the complications of oral mucositis.

While mouth rinses and oral care products abound, these case histories indicate that CloSYS products effectively target oral lesions and gingivitis while alleviating the “chemo taste” that often plagues patients and diminishes their appetites. The products may also relieve xerostomia, helping patients to swallow food and engage in conversation more readily while targeting the halitosis that patients find so troubling and disruptive to intimacy.

Dental hygienists are in the unique position to provide exceptional care, education, and emotional support for their cancer patients with oral mucositis. Kathy Tran, RDH, MHA, has incorporated the CloSYS products to do precisely that for the many cancer patients she has treated over the last few years, including her own mother.

Kathy’s mom was diagnosed with late stage pancreatic cancer which resulted in severe, treatment-induced oral mucositis and xerostomia. The CloSYS toothpaste and unflavored mouth rinse were the only products that did not sting, hurt, or make her gag. As her mother’s condition deteriorated, Kathy sat by her bedside dipping a toothbrush in the CloSYS mouth rinse and gingerly brushing her mom’s teeth. “Her whole body was shutting down and she was in tremendous pain everywhere, except for her mouth,” Kathy said. “That was one less horror she had to deal with, and we were both thankful for that.” Clearly, dental hygienists are able to improve the mood and quality of life for people facing the most overwhelming of challenges.

DR. ALISA COOPER is a chiropractor; certified clinical nutritionist and certified EFT (Emotional Freedom Techniques) practitioner with over 25 years of experience helping others achieve and maintain optimal health and wellbeing. Dr. Cooper’s informative health presentations, books, blog, articles and newsletters empower others to embrace vibrant, joyful living. Dr. Cooper maintains a private practice while writing and speaking on sundry topics and trends in healthcare today. She can be reached at 602-361-3283 or you can peruse her websites http://LiveAndBeWell.com; http://TheWriteRehab.com; and http://EssayRehab.com.

EILEEN MORRISSEY, RDH, MS, is a practicing clinician, speaker, and writer. She is an adjunct dental hygiene faculty member at Burlington County College. Eileen offers CE forums to doctors, hygienists, and their teams. Reach her at emorrisseyrdh@aol.com or 609-259-8008. Visit her website at www.eileenmorrissey.com.

REFERENCES