

# TECHNICAL PROFILE

AN INSIDE LOOK FROM THE MANUFACTURER

## New OTC Treatment for Canker Sores—An Oral Patch

*Because minor* aphthous ulcers (canker sores not associated with systemic disease) afflict nearly 20% of the population,<sup>1</sup> dental professionals are often asked for information and advice about the condition. While the exact etiology of aphthous ulcers is still undetermined, present opinion leans to the view that the condition is immunologically driven and triggered by a number of factors including physical trauma, stress, hormonal state, family history, certain additives in dentifrices, and food hypersensitivity.<sup>2</sup> There is no evidence that they are caused by a virus. Until recently, the only practical options for most patients were to suffer and wait for the sore to heal or seek symptom relief from a variety of over-the-counter (OTC) products or prescribed medications.

### COMMON OTC CANKER SORE TREATMENTS

The most commonly available OTC treatments have aimed to diminish the pain from the oral ulcer via three mechanisms:

- application of a non-water soluble anesthetic such as benzocaine (Anbesol®, by Wyeth Consumer Healthcare, Richmond, VA; Orajel®, by Del Pharmaceuticals, Uniondale, NY; and many other brands) in a topical liquid or gel to the sore;
- application of a barrier via placement of a film-forming gel made with polymerizing materials such as cyanoacrylate (Orabase® Soothe-N-Seal, by Colgate Oral Pharmaceuticals, New York, NY) or cellulose suspended in an evaporating solvent (Zilactin® by Blairex Laboratories, Inc, Columbus, IN) to prevent irritants such as acids and salts from touching the sore; or
- a combination of the two approaches (Zilactin®-B by Blairex Laboratories, Inc, and Kank-A®, by Blistex, Inc, Oak Brook, IL).

While these treatment approaches can be useful, their effectiveness is limited because:

- The applied anesthetic is short-acting and can cause numbness in wider areas of the mouth, not limited to just the sore.

- They can be quite messy.
- They have an unpleasant chemical/medicinal after-taste.

### NEW PATCH TREATMENTS FOR CANKER SORES

Now a new approach has emerged that involves an adhesive oral patch: Cankermelts® (ORAHEALTH Corporation, Bellevue, WA), Canker Cover™ (Quantum, Inc, Eugene, OR), and Orajel® Protective Mouth Sore Discs (Del Pharmaceuticals). These three patches effectively protect the ulcer and at the same time slowly dissolve and release active ingredients. Hence, this is a precise, time-released application with less mess.

Cankermelts is a thin disc made with “all-natural” food gums consisting of gelatin, xanthan gum, and konjac gum. Once placed, the disc lasts 2 to 6 hours and releases licorice root extract, an ingredient that has anti-inflammatory properties and is known to reduce pain. Canker Cover is made with synthetic carbomer, hydroxypropyl cellulose, and polyvinylpyrrolidone. The discs reportedly last 8 to 12 hours and release menthol. Orajel Protective Discs, made with synthetic carbomer and zein (corn) starch, last up to 2 hours and release benzocaine, a synthetic topical anesthetic.

Cankermelts and Canker Cover both use “natural” active ingredients and both report research evidence for the efficacy of the products for pain relief and improvement in healing, although the published studies of Canker Cover were conducted with no controls.<sup>3</sup> Del Pharmaceuticals reports no research results for Orajel Discs.

The use of non-synthetic ingredients (such as those found in Cankermelts) has important advantages because many individuals are unwilling to use products with synthetic chemicals such as cyanoacrylate, polyvinylpyrrolidone, and carbomer, and prefer ingredients that are considered “natural.”

Both Cankermelts and Canker Cover provide pain relief without numbing, in contrast to Orajel Protective Discs (its only active ingredient is benzocaine). Because benzocaine is a relatively large molecule (165 daltons) and not water-soluble, it will not significantly migrate through the matrix structure of an oral patch made of gums.

Therefore, on application, the Orajel Disc releases a burst of benzocaine onto the sore, but then no more anesthetic is delivered to the needed area. Instead, as the disc dissolves, the remainder of the benzocaine is released from the non-adhered side of the disc causing other areas of the tongue and mouth to become numb. These parts of the mouth may remain numb while the anesthetic effect on the sore has worn off. The distribution of the undesired numbness caused by the Orajel is exasperated by the less-localized dissolving and “oozing” of the patch.

In clinical trials at the University of Washington funded by the National Institutes of Health (Bethesda, MD), after 3 days of use, eight out of 10 people using Cankermelts about 8 hours per day had no more base pain, which was twice the number of people who applied no treatment and felt no more base pain. After 7 days of use for about 8 hours per day, canker sores treated with Cankermelts shrank to one tenth of their original size, while untreated canker sores grew larger.<sup>4</sup> In preliminary, uncontrolled studies, with use of Cankermelts 16 hours per day, including while sleeping, 98% of sores resolved to no pain within 3 days.<sup>5</sup>

Cankermelts and Canker Cover have different active ingredients. Cankermelts uses glycyrrhiza (licorice root) extract, which, as previously noted, is a proven anti-inflammatory and has a long and established history as a treatment for a variety of ulcers. The active ingredient in Canker Cover is menthol, which is a mild and very short-acting anesthetic.

Canker Cover is highly hygroscopic and absorbs water until it is swollen to many times its original size. It is designed to be kept in place once it adheres, and if it is removed before it is fully hydrated, it is difficult to pull off and can cause discomfort and possible tissue damage. Cankermelts and Orajel Discs can be easily removed if desired.

Cankermelts will stick to orthodontic braces like wax, both protecting the sore from further irritation and releasing glycyrrhiza extract directly onto the sore. Cankermelts will fully dissolve out of the braces in 2 to 6 hours and can be removed sooner by brushing.

### CONCLUSION

The availability of these new adhesive oral patches is good news for canker sore sufferers: the teen experiencing ulcers as a result of orthodontic treatment or the adult who gets recurring ulcers. As pointed out in the above discussion, these three products have significant advantages over prior OTC treatments. In particular, Cankermelts and Canker Cover protective patches provide research-proven, non-numbing pain relief and improved healing time for the individual burdened with recurrent canker sores. Additionally, Cankermelts and Canker Cover have advantages over the less-controlled dissolving properties of Orajel discs.



Cankermelts by ORAHEALTH Corporation.

Although there may be valid reasons for recommending any of the above canker sore solutions, the author prefers products containing natural active ingredients that have long substantivity in the oral cavity; are easy, convenient, safe, and effective; and have varied uses. Cankermelts fits the author's practice best of all because of its versatility in helping not only canker sores but irritations from braces, partial dentures, toothbrush gum abrasions, sharp areas after extractions, inadvertent iatrogenic trauma, and many other non-canker irritations. Cankermelts technology also dissolves with more controlled, time-release properties, providing more targeted, localized relief of mouth sores.

*This article was written by Steven J. Edwards, DDS. Dr. Edwards is founder of Fitmouth Inc, and maintains a general practice with Interdent in Costa Mesa, California.*

### REFERENCES

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