

## “Magic Mouthwash”

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**Don’t Statement:** *Don’t use mixed medication mouthwash, commonly termed “magic mouthwash,” to prevent or manage cancer treatment-induced oral mucositis.*

### Statement of Rationale:

Oral mucositis is a painful and debilitating side effect of some chemotherapeutic agents and radiation therapy that includes the oral mucosa in the treatment field. Painful mucositis impairs the ability to eat and drink fluids and impacts quality of life. Oral mucositis can result in the need for hospitalization for pain control and provision of total parenteral nutrition in order to maintain adequate nutritional intake during cancer treatment. Effective interventions to reduce severity, duration, and pain from oral mucositis can have a significant impact on health care costs as well as patient well-being. Incremental costs of mucositis more than double when grades are severe, and with more severe mucositis, overall cost of care is increased as much as \$7,102—mostly associated with hospital stays (Carlotto, Hogsett, Maiorini, Razulis, & Sonis, 2013).

Mixed medication mouthwash, also commonly known by other names such as “magic mouthwash,” “Duke’s magic mouthwash,” or “Mary’s magic mouthwash,” is commonly used to prevent or treat oral mucositis. Magic mouthwash is typically compounded by a pharmacy and most often contains anticholinergic agents such as diphenhydramine (Benadryl); an anesthetic, such as viscous lidocaine; and an antacid or mucosal coating agent, such as magnesium or aluminum hydroxide, kaolin, or sucralfate. In some cases the mixture may also contain an antibiotic and/or an antifungal medication such as nystatin, and a corticosteroid. The most common ingredients are diphenhydramine, viscous lidocaine, antacid, nystatin, and corticosteroids (Chan & Ignoffo, 2005). Administration is usually 30 ml every 4–6 hours (“Magic Mouthwash Recipes,” 2009). The usual commercially available compounding kits contain alcohol as an ingredient (<http://www.cutispharma.com/products/oral-suspensions/mouthwashes/>), which can cause increased discomfort.

At the time of a study done in 2000, magic mouthwash was reported to cost \$24 per pint (Dodd et al., 2000). This concoction is not always covered by insurance. The current prices using compounding kits ranges from \$34 to \$50 for 8 ounces ( <http://www.cutispharma.com/products/oral-suspensions/mouthwashes/>). At the usual prescribed dosage of 4–6 times/day, this would only last a patient for 2 days or less, and if used consistently, would need to be taken for weeks.

ONS members have indicated that magic mouthwash is commonly prescribed. Other sources suggest that magic mouthwash is used as standard care. In one study of the impact of an oral care protocol on the prevalence of oral mucositis among hospitalized patients undergoing hematopoietic cell transplantation, magic mouthwash was identified as part of the new oral care protocol used (Bhatt, Vendrell, Nau, Crumb, & Roy, 2010 ). Studies comparing experimental interventions to historical

controls or standard care have cited “magic mouthwash” as part of standard care (Quinn, 2013). In a survey of 40 institutions, 80% indicated that they used this type of formulation (Chan & Ignoffo, 2005).

There is no evidence to show that mixed medication formulations are effective to reduce severity of oral mucositis or relieve pain from oral mucositis. There is evidence to show that magic mouthwash is no more effective for management of oral mucositis than salt and sodium bicarbonate rinses. Salt and sodium bicarbonate rinses are inexpensive, can be readily prepared by patients for themselves, and would not contain irritants such as alcohol. Other interventions for mucositis-associated pain have been shown to be more effective than magic mouthwash.

### **Background:**

The genesis of compounding magic mouthwashes is not known. It is theoretically feasible and logical that using an approach to coat the oral mucosa and protect exposed areas could reduce pain. Topical anesthetics could also be expected to provide some pain relief when applied to oral ulcerations. With this in mind, the idea that such concoctions can be helpful can be understood. It has been suggested that despite evidence showing ineffectiveness of magic mouthwash, patients want some form of therapy, physicians want to provide some intervention for patient relief, and ingredients are relatively non-toxic (Chan & Ignoffo, 2005). For these reasons it continues to be prescribed.

### **Evidence:**

- One study directly examined the effects of magic mouthwash to other oral washes. Dodd et al. (2002) tested the effectiveness of 3 mouthwashes used to treat chemotherapy-induced oral mucositis: chlorhexidine; salt and soda; and a magic mouthwash formulation of lidocaine, Benadryl, and Maalox. In this double blind randomized trial, investigators examined the effects of the different mouthwashes on time to cessation of signs and symptoms of mucositis as well as pain. There were no differences among study groups in mucositis-related outcomes.
- In a systematic review of evidence for development of clinical practice guidelines for the Multinational Association of Supportive Care in Cancer/ International Society of Oral Oncology (MASCC/ISOO), Saunders et al. (2013) concluded that there was insufficient evidence to recommend topical anesthetics examined and that sucralfate provided as an oral mucosal coating agent should not be used. No guideline for mixed medication mouthwash was possible due to insufficient evidence. It was also noted that these mouthwashes do not prevent or treat mucositis, and any pain relief provided is short-lived (McGuire et al., 2013).
- The combination of magic mouthwash containing dexamethasone, nystatin, and diphenhydramine plus sucralfate was not more effective for management of mucositis symptoms than single agent benzydamine in one study (Kuk et al., 2011).
- A small retrospective match-controlled study reported that patients with head and neck cancer undergoing radiation therapy had better outcomes with calcium phosphate rinses than magic mouthwash (Miyamoto, Wobb, Micaily, Li, & Achary, 2009)
- Cerchetti et al. (2002) found that the intensity and duration of pain and functional impairment from oral mucositis was lower in patients who were given morphine oral rinses than in patients receiving magic mouthwash ( $p < .02$ ).
- More patients receiving magic mouthwash complained of local side effects (Cerchetti et al., 2002). Though patients have reported that magic mouthwash can effectively numb the mouth,

it is also reported to cause taste changes, and formulations that contain alcohol, as most compounding mixes do, can cause further irritation and pain.

- In a study of patients with painful oral mucositis, oral morphine gargles reduced the severity of mucositis-related pain that was not controlled with magic mouthwash (Haritha & Shankar, 2009).

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