

## Magical Myth of Magic Mouth Wash

Kamal Kant Sahu<sup>1</sup>  · Ajay Kumar Mishra<sup>1</sup> · Akil Adrian Sherif<sup>1</sup>

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Dear Editor,

One of the most challenging aspects of treating patients with chemotherapy is the management of the associated complications. Recurrent infections, refractory cytopenias, frequent transfusions, antibiotic resistance etc. are the commonly encountered hurdles. During the chemotherapy phase, maintaining good nutritional balance of the patients undergoing treatment is of utmost importance. Poor oral intake in cancer patients may be due to multiple reasons, one of them is chemoradiotherapy induced oral mucositis (CRIOM). In many cases, CRIOM can be worse enough to reduce the dose of drugs for subsequent cycles. CRIOM has many direct and/or indirect negative impacts like reducing oral intake thereby contributing to malnutrition, serving as a potential ground of infection and port of entry for microbes, precipitating hypoalbuminemia thereby aggravating the toxicities of chemotherapeutic drugs.

Magic mouth wash (MMW) or equivalent formulations are commonly prescribed by oncologists as a potential remedy for CRIOM related discomfort. By virtue of its name, there is false perception about the efficacy of MMW. It is important for both the patients and clinicians not to expect any “*magic*” out of MMW. Currently, there are at least twenty plus formulations marketed under various trade names. There is no standard formula available for MMW and different institutions have their own formulations. Recently, Chan et al. did a survey involving US based pharmacists from different institutions [1].

According to their survey, the most common ingredients used to prepare MMW were diphenhydramine, viscous lidocaine, corticosteroids, magnesium hydroxide/aluminium hydroxide, and nystatin. Uberoi et al. through their paper pointed out the concerns with regards to cost of MMW, its effectiveness and side effects [2]. Concern about the effectiveness of MMW is not new and many studies in past have shown no superior outcome when compared to the home-made solutions [2]. It has ingredients with local anaesthetic, anti-histaminic and antacid properties and hence with major actions being local, in true terms we should not expect any *magic* from MMW. Multinational Association of Supportive Care in Cancer and International Society of Oral Oncology (MASCC/ISOO) Clinical Practice Guidelines for mucositis do not support the use of mixed compound formulated solutions [3]. Panel recommended cryotherapy, low-level laser therapy, patient-controlled analgesia with morphine and benzydamine mouthwash in various clinical scenarios (Level of evidence I/II). Benzydamine, in addition to its NSAID property also inhibits thromboxane and prostaglandin biosynthesis thereby having local mucosal healing property [4].

As mentioned by Uberoi et al., purchasing price of an ounce of pharmacy formulated MMW is huge. This subconsciously raises the expectations of patients from MMW who in most cases pay out of their own pocket [2]. As a responsible physician, it is our responsibility to educate our patients about the expectations while using MMW. Many patients are also bothered from the numbness and drowsiness in association with MMW use and hence should be made aware of the possible side effects (2). Many pharmacies have their local formulations incorporating additional ingredients like clotrimazole, metronidazole etc. which themselves are very sour to taste [5]. There is no

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✉ Kamal Kant Sahu  
drkksahu85@gmail.com

<sup>1</sup> Department of Internal Medicine, Saint Vincent Hospital, 123 Summer Street, Worcester, Massachusetts 01608, US

data to promote or deny the effectiveness of these additions to existing formulations.

To conclude, we recommend that the patients should be well educated about the advantages and limitations while prescribing MMW. Awareness about the prescribed drugs and formulations will ensure realistic expectations among the patients.

#### **Compliance with Ethical Standards**

**Conflict of interest** The authors have no conflicts of interest to declare.

**Ethical Statement** The article doesn't contain participation of any human being and animal.

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