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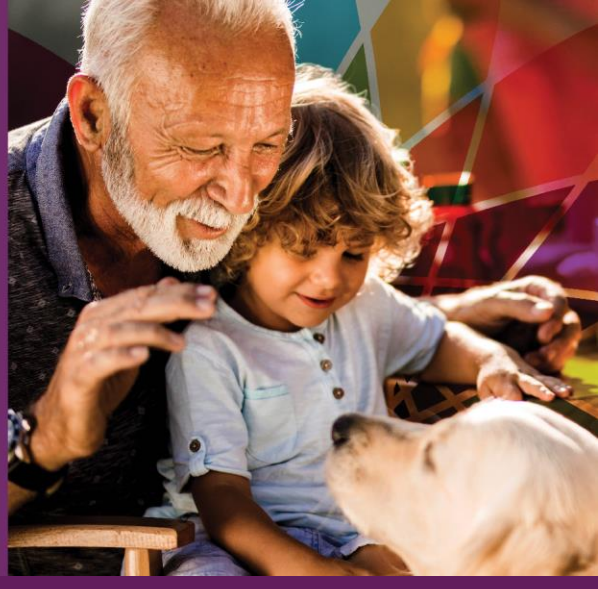
THE TABLET: PALLIATIVE CARE PHARMACY TIPS



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If you have a topic you would like the pharmacy team to answer, please send your suggestions to: lowrymf@upmc.edu

TODAY'S TOPIC:

Managing Cancer Treatment-Related Dysgeusia

Background:

Dysgeusia is defined generally as a distortion of the sense of taste. Dysgeusia can be related to multiple underlying etiologies and management may differ depending on the etiology. In the oncology population, it can be a result of anti-cancer treatment or tumor burden, both of which can cause destruction of the oral mucosal lining altering nerve transmission or taste bud functioning. Cancer treatment-related dysgeusia typically occurs within ~4 weeks of treatments and sensation of normal taste can recover within a year although recovery is not guaranteed. Weak evidence exists for non-pharmacologic management strategies such as lemon juice, hard candy, minimizing metal utensils, and utilizing mouthwash before meals. There are multiple pharmacologic therapies that have not shown to be beneficial including steroids, vitamin A, gabapentin, gingko biloba, glutamine, and amifostine. Zinc has been explored as a potential treatment option as it is an essential mineral for proliferation of taste buds and repair of taste function. Multinational Association of Supportive Care in Cancer and International Society of Oral Oncology (MASCC/ISOO) do not recommend pharmacologic therapy for dysgeusia management specifically zinc sulfate and amifostine (Support Care Cancer. 2010 Aug;18(8):1081-7.); however, there is some more recent evidence regarding zinc sulfate use in this population since that literature review.

Importance:

Dysgeusia can reduce quality of life of life for our oncology population. It is important for palliative care clinicians to be aware of the potential management strategies to reduce this burdensome symptom.

The Literature:

J Pain Palliat Care Pharmacother. 2012 Jun;26(2):111-4.

A randomized, placebo-controlled trial of oral zinc for chemotherapy-related taste and smell disorders

Methods: Double-blinded, placebo-controlled RCT

- Patients with chemotherapy-induced taste and/or smell changes (with unique underlying cancers and chemotherapy regimens) were randomized to receive zinc 220mg PO BID (equivalent to 50mg elemental zinc BID) or placebo BID

Outcomes: Change in taste and smell (0-100 point scale, with 0 describing the worst distortion or loss of taste and smell) prior to intervention and at 1, 2 and 3 months after initiating zinc versus placebo

Results: n=41; mean age 53 years

- No statistically significant difference in loss or distortion of smell, loss or distortion of taste
- Trend toward improvement over time of all categories in all groups with exception of diminished sense of smell for those receiving zinc
- No difference between types of chemotherapy

Conclusion:

- No significant difference between use of zinc supplement and placebo for treatment of taste and smell changes related to chemotherapy

Pak J Med Sci. 2019;35(3):624-629.

Efficacy of zinc sulfate on concurrent chemoradiotherapy induced taste alterations in oral cancer patients: A double blind randomized controlled trial

Methods: Placebo-controlled RCT

- Patients with oral cancer randomized to receive zinc sulfate 50mg PO TID or placebo TID, initiated on first day of concurrent chemotherapy with radiation (CCRT) and continued for 1 month after CCRT completion

Outcomes:

- Taste acuity observed through detection and recognition threshold through different concentration of taste solutions for each taste at three time points: baseline, end CCRT, and 1-month follow up
- Utilized ISO Method of investigating sensitivity of taste
- Detection threshold (DT) defined as lowest level which a subject can perceive a stimulus (0-8 scale)
- Recognition threshold (RT) defined as lowest level of a solution which a subject can correctly recognize the taste (0-8 scale)

Results: n = 70; average age = 43.4 years (zinc) and 46 years (placebo)

- Statistically significant improvement in RT for zinc group for sweet and sour taste
- Improvement in RT observed in zinc group for bitter taste, not statistically significant
- Slight improvement in DT observed in zinc group for sweet, sour, and bitter taste improvement, not statistically significant
- DT and RT did not differ between groups for salty taste
- No reported adverse effects related to zinc therapy

Conclusion:

- Zinc sulfate was not significantly beneficial in preventing CCRT-induced taste alterations

J Res Med Sci. 2013 Feb; 18(2): 123–126.

Preventive effects of zinc sulfate on taste alterations in patients under irradiation for head and neck cancers: A randomized placebo-controlled trial

Methods: Double-blinded, placebo-controlled RCT

- Patients with head and neck cancer getting radiotherapy +/- chemotherapy
- Randomized to receive zinc sulfate 50mg PO BID or placebo TID at start of radiotherapy

Outcomes:

- Taste acuity determined by measuring detection and recognition thresholds for 4 taste qualities at baseline, end of radiotherapy and 1 month later (similar to above study)

Results: n = 35; mean age 59.2 years

- Significant increase in taste perception threshold for bitter, salty, sweet and sour in placebo group at end of radiation and one month following completion of radiotherapy
- Only slight increase in threshold for salty taste in zinc group at 1 month after completion of radiotherapy
- No relevant side effects reported by patients

Conclusion:

- Zinc supplementation during radiotherapy and continued 1 month after can prevent radiation-induced taste alterations

Bottom Line:

- One RCT investigated *treatment* of taste/smell changes with zinc did not show any difference from placebo
- Other two RCTs investigated *preventative* use of zinc in taste recognition and detection with mixed results
- It is unclear how taste recognition and detection compares to patients with altered taste or unpleasant tastes (ie. metallic taste); it is possible these groups are not comparable…
- It would be interesting to know how this translates to other patient-oriented outcomes like quality of life, appetite, anorexia
- Zinc supplementation seems generally safe as no adverse events related to zinc supplementation were recorded

CLINICAL PEARL: Zinc sulfate has mixed evidence for use in dysgeusia prophylaxis and poor evidence for treatment of dysgeusia