

Supplementary File

Table S1. Summary on the effects of different mouthwash on cancer patients with OM (n=11).

No.	Author (Year)	Type of study	Sample size	Intervention	Chemical properties of herbs	Comparison	Clinical outcomes	Adverse effects
1	²⁹	Single-blind, randomized preliminary study	14	Composition: Herbal mouthwash with 8g of <i>F.caryophylli</i> , 6g of <i>F.schisandrae</i> , 4g of <i>R.glycyrrhizae</i> , <i>M. officinalis</i> , 4g <i>H. menthae</i> . Usage: For 1 minute, rinse the mouth with 10 mL of swish, then spit. Frequency: Rinse the mouth each time prior to eating and before going to bed. Duration: For the assessment of early treatment response to RT, from the beginning of RT to 2 weeks after treatment or until OM has resolved.	Anti-inflammatory	Clear water	Mucositis Duration: Lowered in grade ≥ 2 and though was lowered in grade 3 it wasn't notably lower between the two groups.Incidence: They found less frequent occurrence of Grade 3 mucositis.Onset Delay: Mucositis onset delayed however there was no group difference found out.Other Outcomes: Decreased pain, nutritional requirement, and interruption in RT, with no inter-group differences.	None reported
2	³⁰	RCT; Double-blind	72	Liquorice root extract 5% Every 8 hours administrated daily, dose is 10 cc starting with the first day of chemotherapy.	Anti-inflammatory	Combined mouthwash (aluminium MG, diphenhydramine, nystatin powder, and	No significant difference in mucositis incidence and intensity between intervention and control groups.	No information provided

						lidocaine 2%)		
3	³¹	RCT; Double-blind	67	<p>Chamomile extract, peppermint oil, AV gel</p> <p>Spit 5 ml of the mouthwash 3 times daily for 60 s from the first day of starting RT, then discard. Continue for 6 weeks</p>	<p>Chamomile.: antibacterial, antifungal, anti-inflammatory and anticarcinogenic</p> <p>Peppermint oil: analgesic and antimicrobial</p> <p>AV gel: include anti-inflammatory, analgesic, immunomodulating, antimicrobial, wound healing, anti-proliferative and anti-tumour.</p>	<p>Zinc sulfate mouthwash, CHX mouthwash, and placebo</p>	<p>Great decrease in OM scores and the degree of reported pain during the second through the seventh week after ingestion</p>	No information provided
4	³²	RCT; Double-blind	37	<p>Preparation: 100 cc of 50% Glycyrrhiza aqueous extract, alcohol and water.</p> <p>Dosage: 20cc twice a day from RT start till 14 days.</p>	<p>Anti-inflammatory, antibacterial, antifungal, and anti-allergy</p>	<p>It consists of a placebo containing approved brown food colouring in 2 litres of water.</p>	<p>More patients suffered from grade 1 and 2 OM in intervention group</p> <p>Higher mean scores in the intervention group for oral mucosal wound size and oral mucosal irritation</p> <p>Significant differences between two groups' maximal grade of</p>	No information provided

							mucositis and oral mucosal irritation	
5	³³	RCT Single; -blind	80	Ingredient: Turmeric. Usage: Gargle with Swish 10 mL for 2 minutes then spit. Frequency: Six times a day – 1 hour before radiation and then 1, 2, 4, 6 hours after radiation and before going to bed.	Disinfecting, pain relieving, anti-inflammatory and healing of the wound	Povidone-iodine solution mouthwash	OM: Delayed and reduced rate of OM following radiation. Mucositis: A lower frequency of severe mucositis and less treatment interruption during weeks 1 to 4. Weight: Minimized weight loss.	No information provided
6	³⁴	RCT; Triple-blind, pilot	74	Curcumin Dose: Use 10 mL 3 times daily for 7 days	Anti-inflammatory, chemotherapeutic, antiangiogenic, antioxidant, chemopreventive, immunomodulatory and wound-healing	0.15% benzydamine mouthwash	Risk: 50% lower risk of RIOM onset. Onset: Delayed onset of RIOM. Severity: Prevents severe RIOM.	One patient reported burning sensation after 3 weeks of mouthwash usage.
7	³⁵	RCT; Double-blind crossover	28	Dose: 500 mg of <i>Plantago ovata</i> husk in 30 mL water plus three drops of vinegar per dose Frequency: 3 times daily during their next chemotherapy cycle	Anti-inflammatory, wound-healing, antibacterial and antinociceptive	Placebo	Significant reduction in the degree of mucositis, pain severity and the xerostomia grade Significant improvement the quality of life of patients	2 patients from intervention group withdrew due to nausea.
8	³⁶	RCT; Double-blind	56	<i>Achillea millefolium</i> Dosage: Swallow 15 mL of ordinary gargle solution with distilled A. millefolium. Frequency: 4 times daily for 14 days.	Antibacterial, anti-allergic, anti-congestion, expectorant, antispasmodic	Routine mouthwash containing lidocaine, dexamethasone,	Substantial decrease in its severity; OM	None reported

					c and anti-inflammatory	sucralfate, and diphenhydramine		
9	37	RCT; Open-labelled	60	Composition: Green sage tea with thyme and peppermint hydrosols. Usage: Spit out and swallow or rinse the mouth for 30 seconds, 4 times per day. Timing: 30 min after oral care. Duration: 14 days from beginning of the chemotherapy.	Antiseptic, anti-inflammatory, antimicrobial, antifungal and antiviral	Basic oral care	Patients in the intervention group did not experience oral mucositis on day 5. Statistically decreased grade 2 mucositis incidence in the intervention group on day 5 compared to the control group.	No information provided
10	38	RCT; Double-blind, placebo controlled	60	<i>Matricaria recutita</i> (chamomile) and <i>Mentha piperita</i> (peppermint) Use as a mouthwash 3 times daily for at least 30s	Chamomile: antibacterial, antifungal, anti-viral, anti-inflammatory, anti-ulcer, and wound-healing Peppermint: anti-inflammatory, antimicrobial and cooling effects	Placebo	Significant reduction in the maximum and daily average OM grade. Significant improvements in pain intensity, dryness, and dysphagia. Lower utilization of complementary medicines, narcotic pain relievers, TPN, and the length of TPN.	No specific information on adverse effects associated with the use of herbal mouthwash.
11	39	RCT	29	<i>Achillea millefolium</i> Spit and rinse your mouth twice daily for 20d with 10ml CHX mouthwash and from first day of chemotherapy rinse with 10ml plant-based AM mouthwash twice daily.	Anti-inflammatory, wound-healing, and antimicrobial	CHX mouthwash without additional <i>Achillea millefolium</i> mouthwash	Significant improvement in OM grade on 10 th and 20 th day. Herbal group mild mucositis while control group had severe form. Lower incidence rates on day 20 but, there was	Information on the taste or sensation of <i>Achillea millefolium</i> mouthwash to the

	more decrease in the rate of taking pain killers.	receivers is considered as the taste or bad taste.
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