

Meta-Analysis Examined Probiotics for Severe Oral Mucositis in Cancer Patients

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DESCRIPTION

When cancer patients get Chemo Therapy (CT) and/or Radiation Therapy (RT), Oral Mucositis (OM), which is categorized into grades I-IV, is a common side effect. It affects approximately 20%-40% of those receiving conventional chemotherapy for solid tumors, and between 50%-100% of patients with Head and Neck Cancer (HNC) treated with CT and/or RT, with around 60% experiencing Severe Oral Mucositis (SOM) (\geq grade III). In SOM, patients endure painful oral ulcers that can hinder their ability to adhere to treatment plans, increase the risk of life-threatening infections and significantly escalate treatment costs.

The risk factors for OM are multifaceted and its underlying mechanisms are not yet fully understood. Drug therapy remains the primary approach, including antibiotics, antiviral agents, antifungal medications, glucocorticoids and vitamins, which can help mitigate infections and provide nutritional support. However, these treatments can have side effects; for instance, glucocorticoids may lead to obesity, edema and gastrointestinal discomfort. Furthermore, prolonged use of certain medications may compromise natural immunity and promote drug-resistant infections. This has led to a growing interest in naturopathy for preventing and treating OM. Natural remedies, such as honey, are often more accessible and associated with fewer side effects compared to traditional drugs, although prolonged use can result in dental issues and other complications.

Probiotics have become another exciting option for natural treatment in light of these worries. Probiotics like *Lactobacillus* and *Bifidobacterium* naturally inhabit the oral cavity and contribute to oral health by forming protective barriers, adhering to epithelial cells, competing for nutrients, producing antimicrobial substances and modulating immune responses.

Previous animal studies suggest that probiotics can shield the oral mucosa from damage caused by 5-fluorouracil, alleviate the severity of OM and aid in mucosal recovery. However, clinical evidence regarding their effectiveness in cancer patients remains limited and inconclusive.

Therefore, there is ongoing discussion regarding the effect of probiotics on OM in cancer patients undergoing CT and/or RT. The purpose of this review and meta-analysis is to assess how well probiotics work to manage OM.

This study has several limitations. Firstly, the sample size was relatively small. Secondly, the effects of specific bacterial species or strains were not assessed. Additionally, the studies did not investigate the appropriate doses, treatment durations, or long-term effects of probiotics in cancer patients. Moving forward, it is vital to conduct rigorous clinical trials with larger sample sizes and standardized treatment protocols.

CONCLUSION

In conclusion, According to our research, probiotics, especially for severe oral mucositis, can dramatically lower the incidence of oral mucositis in patients receiving chemotherapy and/or radiation therapy. However, the effectiveness of probiotics may be influenced by various factors, including tumor type and location. This offers a promising approach for prevention and treatment. However, further clinical research is required to confirm the effectiveness of probiotics against SOM and efforts should be made to standardize and optimize the particular species and dosages of probiotics used before clinical application. We should also explore the potential for personalized probiotic treatment plans to provide more effective options for cancer patients with SOM receiving CT and/or RT.

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