

Probiotics for chemoradiotherapy-induced oral mucositis

New research suggests that in patients with nasopharyngeal carcinoma, severity of oral mucositis—a common complication of chemoradiotherapy—might be decreased by giving patients a probiotic combination, which augments the patients' immune response and modifies the intestinal microbiota.

Chunling Jiang (Jiangxi Cancer Hospital, Nanchang, China) and colleagues did a randomised, placebo-controlled trial to assess whether a probiotic combination containing *Bifidobacterium longum*, *Lactobacillus lactis*, and *Enterococcus faecium* could decrease the severity of oral mucositis in patients with nasopharyngeal carcinoma who were undergoing concurrent chemoradiotherapy (CCRT). The probiotic combination was given from the start to the end of treatment for up to 7 weeks (three capsules, twice a day). 99 patients

aged 18–70 years, who had locally advanced nasopharyngeal carcinoma, and were receiving CCRT were included. The patients were randomly assigned (2:1) to receive CCRT plus the probiotic combination (CCRT-P; n=58) or CCRT plus placebo (CCRT; n=35). The primary endpoint of the study was grade 3 or worse severe oral mucositis, and the secondary endpoints included immune index.

In the full analysis set, there was decreased severity of oral mucositis in the CCRT-P group compared with the CCRT group; grade 0, 1, 2, and 3 oral mucositis occurred in 0% versus 10.9% of patients, 0% versus 51.6%, 54.3% versus 21.9%, and 45.7% versus 15.6% of patients, respectively. In the CCRT-P group, compared with the CCRT group, there was a lower percentage reduction of CD4 (76.6% vs 52.9%), CD8 (62.9% vs 29.8%), and CD3 (69.7% vs 45.5%) T cells ($p<0.05$).

Co-author Jingao Li (Jiangxi Cancer Hospital, Nanchang, China) said, "If this result could be confirmed by further studies, then adding probiotics to CCRT will certainly provide a safe and cost-effective method to prevent oral mucositis, and by reducing oral mucositis, fewer patients will experience radiotherapy interruption." Justin Stebbing (Imperial College London, UK) commented, "This [study] adds to the growing body of knowledge regarding the role of the microbiome in cancer." Leah Pyter (The Ohio State University, OH, USA) said, "The implications of this study are that oral probiotics may be useful as non-invasive, preventive modulators of immunity, and therefore debilitating side-effects, in immunocompromised patients."

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Published Online
December 13, 2018
[http://dx.doi.org/10.1016/S1470-2045\(18\)30919-7](http://dx.doi.org/10.1016/S1470-2045(18)30919-7)
For the study by Jiang and colleagues see *Cancer* 2018; published online Dec 6.
DOI:10.1002/encr.31907