

## Alleviation of radiotherapy-induced oral mucositis

The superoxide dismutase mimetic GC4419 could significantly reduce the duration, incidence, and severity of severe oral mucositis—a common, debilitating toxicity caused by radiotherapy in patients with head and neck cancer.

In the randomised, double-blind, phase 2b trial, Carryn Anderson (University of Iowa Hospitals and Clinics, Iowa City, IA, USA) and colleagues enrolled 223 patients with locally advanced cancer of the oral cavity or oropharynx who had planned intensity-modulated radiotherapy (cumulative dose of 60–72 Gy [ $\geq 50$  Gy to two or more oral sites]) plus cisplatin (80–100 mg/m<sup>2</sup> every 3 weeks or 30–40 mg/m<sup>2</sup> weekly). Patients were randomly assigned 1:1:1 to receive intravenous GC4419 at 30 mg (n=73) or 90 mg (n=76) or placebo (n=74) before each radiotherapy fraction. The grading of oral mucositis, according to WHO criteria, was

evaluated twice per week during the treatment, and then once per week for up to 8 weeks afterwards. The primary endpoint was duration of severe oral mucositis in the intention-to-treat population.

217 of 223 patients received at least one infusion of GC4419 or placebo (73 received GC4419 30 mg, 72 GC4419 90 mg, and 72 placebo). The duration of severe oral mucositis was significantly shorter in those receiving 90 mg GC4419 versus placebo (median 1.5 days vs 19 days;  $p=0.024$ ), at which dose the incidence (43% vs 65%;  $p=0.009$ ) and severity (grade 4 incidence 16% vs 30%;  $p=0.045$ ) of severe oral mucositis were also significantly improved compared with placebo. In patients receiving 30 mg GC4419, intermediate improvements in the median duration (8 days;  $p=0.163$ ) and incidence (40%;  $p=0.026$ ) of severe oral mucositis were reported compared with placebo. Safety

was similar across all three treatment groups, and no significant GC4419-specific toxicity nor increase in the known toxicities of radiotherapy were reported.

Sharon Elad (Eastman Institute for Oral Health at the University of Rochester Medical Center, Rochester, NY, USA) commented: “Mucositis has a significant impact on the function and quality of life. This GC4419 study provides high-quality data about a new intervention with a great potential to reduce the mucositis burden in the patient population studied.”

“[The] main limitation is the lack of long-term results in terms of safety and efficacy of oncological treatment. We will wait for long-term results and for the confirmatory phase 3 trial”, added Paolo Bossi (Fondazione IRCCS Istituto Nazionale Tumori, Milan, Italy).

Elizabeth Gourd



Dr P Marazzi/Science Photo Laboratory

Published Online  
October 24, 2019  
[https://doi.org/10.1016/S1470-2045\(19\)30719-3](https://doi.org/10.1016/S1470-2045(19)30719-3)

For the study by Anderson and colleagues see *J Clin Oncol* 2019; published online Oct 16.  
DOI:10.1200/JCO.19.01507