

Palifermin in Myelotoxic Therapy-Induced Oral Mucositis

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Severe oral mucositis is a frequent complication of high-dose chemotherapy and radiotherapy, with no effective treatment. From the patient perspective, oral mucositis is a significantly debilitating adverse effect, although autologous haematopoietic stem cell transplantation (HSCT) is an efficient treatment modality for several types of cancers, especially haematological malignancies. An agent that does not affect the beneficial effects of high-dose therapy, while decreasing mucositis-associated morbidity would be practice changing.

Keratinocyte growth factor (KGF), a member of the fibroblast growth factor family that exhibits a strict specificity of action for epithelial cells, appears to play an important, but as yet undefined, role in response to epithelial tissue injury, subsequent repair and, possibly, protection from further injury.

Palifermin, a more stable version of endogenous KGF, received a recent label indication to "decrease the incidence and duration of severe oral mucositis

in patients with haematological malignancies receiving myelotoxic therapy requiring haematopoietic stem cell support". With approximately 17 clinical studies, enrolling over 1200 patients, an ever-growing body of data provides evidence that palifermin can significantly reduce, in a clinically meaningful way, the duration and incidence of severe oral mucositis.

In noncomparative and randomised, comparative clinical trials, palifermin-related adverse events – thought to be related to the pharmacological activity of the drug on the tissues expressing KGF receptor – were reversible, usually mild to moderate in severity and infrequently led to discontinuation of treatment. However, and although results from the earliest trials are encouraging, long-term follow-up is still required, since the growth of second tumours that express KGF receptor is theoretically possible.

Since there is no biological basis for the beneficial effects of palifermin in oral mucositis to be altered with the source of stem cells used for transplant, this drug is likely to be a breakthrough in the allogeneic HSCT setting also. Thus, palifermin might prove useful in the prophylaxis of oral mucositis as well as in acute graft-versus-host disease. ▲