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Palifermin in Myelotoxic Therapy-Induced Oral Mucositis

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Oral mucositis is induced by the myelotoxic agents used to treat patients with haematological or nonhaematological malignancies to prepare them for haematopoietic stem cell transplantation (HSCT). Oral mucositis affects the patient's health-related quality of life because the difficulty in eating and drinking often necessitates the administration of total parenteral nutrition. Intense pain is the most obvious and troublesome symptom requiring narcotic analgesia and the risk of infection can be life threatening. Hitherto, virtually all attempts to prevent or ameliorate mucositis with oral rinses, antimicrobial therapy and other remedies have failed.

Palifermin (recombinant human keratinocyte growth factor) is the first agent to be approved for the prevention of oral mucositis induced by myelotoxic therapy. The drug has also shown promise in reducing febrile neutropenia and bacteraemia. Admittedly, the study population consisted of patients at moderate risk of developing infectious complications, but if the results were borne out in patients at higher risk, e.g. allogeneic HSCT recipients, it would contribute significantly to reducing infectious complications and hence the use of antimicrobial agents.

However, extrapolating these promising results to all patients with mucositis is another matter, not least because mucosal barrier injury (MBI) induced by intensive chemotherapy or radiotherapy is a complex and dynamic pathobiological process manifested both in the mouth and throughout the entire gastrointestinal tract.[1] Therefore, a better understanding of the pathobiology of MBI will facilitate the unravelling of the mechanisms of action of this potent drug that exhibits cytoprotective effects (inhibition of epithelial cell apoptosis), trophic/regenerative effects (increasing epithelial stem cells) and also downregulates inflammation.

Thus far, palifermin has been given only 3 days before myelotoxic therapy and 3 days after HSCT.[2] However, because the character, onset and progression of oral mucositis is markedly influenced by the nature and intensity of the cytotoxic insult, it is unclear whether this administration scheme will apply universally. Nonetheless, to paraphrase Winston Churchill, palifermin is not the beginning of the end of mucositis, but it is at least the end of the beginning in terms of moving towards effective prevention and treatment of mucosal damage to the gastrointestinal tract and in reducing the infectious sequelae related to that damage. ▲

References

1. Sonis ST. The pathobiology of mucositis. Nat Rev Cancer 2004; 4 (4): 277-84
2. Spielberger R, Stiff P, Bensinger W, et al. Palifermin for oral mucositis after intensive therapy for hematologic cancers. N Engl J Med 2004; 351 (25): 2590-8