REPLY

Perioperative nutritional intervention: a way to improve long-term outcomes

Poorna Anandavadivelan and Pernilla Lagergren

We would like to thank Molino and Laviano for their Correspondence article on our Review article (Cachexia in patients with oesophageal cancer. *Nat. Rev. Clin. Oncol.* <http://dx.doi.org/10.1038/nrclinonc.2015.200> (2015))¹, in which they acknowledge our work and provide their extended views on the subjects we covered (Perioperative nutritional intervention: a way to improve long-term outcomes. *Nat. Rev. Clin. Oncol.* <http://dx.doi.org/10.1038/nrclinonc.2016.20> (2016))². We agree with the authors that, in addition to interventions that aim to counteract muscle loss and improve muscle function, perioperative nutritional interventions to improve immune function are of great importance and are an under-researched aspect of oesophageal cancer care. Indeed, we emphasized in our Review¹ (in the ‘Treatment:

Artificial nutritional support: During the perioperative period’ section) the importance of perioperative immunonutritional support, and stated that the European Society for Clinical Nutrition and Metabolism (ESPEN) has given a grade A recommendation (highly recommended) for the use of enteral nutritional support with immune-modulating substrates, such as arginine, omega-3 fatty acids, and nucleotides, in patients undergoing major abdominal surgery, independent of nutritional status³. In the same section of our Review¹, we also discussed the existing evidence that indicates the role of immunonutrition in determining long-term patient outcomes, including survival. We second the views of Molino and Laviano², who have highlighted findings from more-recent studies than those discussed in our Review, as well as the possible mechanisms

behind the effects of immunonutrition — and, therefore, the need for more and larger-sized clinical trials evaluating its effect in a patient group such as oesophageal cancer survivors, in whom immune function is compromised considerably throughout the cancer trajectory, especially during neoadjuvant therapy. Thus, the authors’ Correspondence adds valuable insights into the potential of immunonutrition, during the perioperative period, to improve the long-term outcomes of such patients.

Poorna Anandavadivelan and Pernilla Lagergren are at the Departments of Molecular Medicine and Surgery, Karolinska Institutet, Norra Stationsgatan 67, Level 2, Stockholm 17176, Sweden.

Correspondence to P.L.
Pernilla.Lagergren@ki.se

[doi:10.1038/nrclinonc.2016.21](https://doi.org/10.1038/nrclinonc.2016.21)
Published online 16 Feb 2016

1. Anandavadivelan, P. & Lagergren, P. Cachexia in patients with oesophageal cancer. *Nat. Rev. Clin. Oncol.* <http://dx.doi.org/10.1038/nrclinonc.2015.200> (2015).
2. Molino, A. & Laviano, A. Perioperative nutritional intervention: a way to improve long-term outcomes. *Nat. Rev. Clin. Oncol.* <http://dx.doi.org/10.1038/nrclinonc.2016.20> (2016).
3. Arends, J. *et al.* ESPEN Guidelines on enteral nutrition: non-surgical oncology. *Clin. Nutr.* **25**, 245–259 (2006).

Competing interests statement

The authors declare no competing interests.