

# Impairment of Immunonutritional Status During Treatment is a Factor Associated With Oncologic Outcomes in Patients With Rectal Cancer Treated With Preoperative Chemoradiotherapy

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Studies regarding preoperative nutritional and immunologic status have increased. The prognostic nutritional index (PNI) calculated based on the serum albumin concentration and the total lymphocyte count was initially suggested for assessing the influence of the perioperative immunonutritional status on surgical risk [1]. Recently, studies have reported an association of the PNI with oncologic outcomes and with postoperative complications in patients with various types of cancers [2-4]. These studies reflect the increasing interest in correcting environmental factors to improve oncologic outcomes.

Although preoperative chemoradiotherapy (PCRT) has been established as one of the standard treatments for patients with locally advanced rectal cancer, many suggestions have been made and many controversies exist regarding prognostic factors. The first step in identifying prognostic factors has to be an evaluation of known prognostic factors for patients who were not treated with PCRT.

In colorectal cancer patients, malnutrition is known to be related with the risk of postoperative complications, and postoperative complications induce chronic inflammation, which might lead to worse long-term oncologic outcomes [5]. However, the mechanism of oncologic impairment due to malnutrition has not been

clearly demonstrated. The authors of “*Prognostic impact of immunonutritional status changes during preoperative chemoradiation in patients with rectal cancer*” evaluated the influence of the PNI in the setting of PCRT [6] by using the difference between the pre-CRT PNI and the post-CRT PNI (dPNI). When impairment of the immunonutritional status during PCRT was low, oncologic outcomes were better, even when other potent prognostic factors were considered. Based on their results, patients’ long-term outcomes may be enhanced by correcting their immunonutritional status during PCRT.

Before accepting the results of this study, we need to investigate the influence of initial immunonutritional status on oncologic outcome. A PNI of 45 is defined as moderate to severe malnutrition. If the cutoff value of malnutrition is considered, the cutoff value of 5 for the dPNI seems small and may not sufficiently reflect the nutritional status. Therefore, it is possibly that the association of the dPNI with oncologic outcome was influenced by the pre-treatment nutritional status needs to be tested. Once this is accomplished, one can proceed to investigating the effect that correcting the nutritional status would have on long-term oncologic outcomes.

The immunonutritional status of patients should be one of the main points of interest in treating patients with colorectal cancer. This is important because the immunonutritional status of the patient is a modifiable factor. For this reason, we expect studies regarding immunologic or nutritional status in patients with colorectal cancer to increase over time. However, we need to be careful in analyzing the results of such studies to find proper applications in clinical practice.

## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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