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Key Words: prognostic nutritional index, pneumonia, postoperative complications, recurrence, thoracic surgery

See Article page 276.

Commentary: Beyond the eyeball test

Lorraine D. Cornwell, MD, and R. Taylor Ripley, MD

Although experienced surgeons often count on the accuracy of the “eyeball test” to advise patients, risk stratification has become more reproducible with the increasing use of risk models. With the rise in use of competing alternative treatment options, such as stereotactic body radiation therapy, further refinements in thoracic surgical risk prognostication have become even more important.

Risk models such as the VASQIP (Veterans Affairs Surgical Quality Improvement Program) surgical risk

Lorraine D. Cornwell, MD (left), and R. Taylor Ripley, MD (right)

CENTRAL MESSAGE

Although surgeons use the “eyeball test” to advise patients about surgical risk, nutritional indices such as the PNI may help quantify risks beyond the VASQIP, performance status, and frailty scoring.

calculator, the Eastern Cooperative Oncology Group (ECOG) and Karnofsky performance statuses, and frailty scoring are increasingly used in multidisciplinary evaluation and in discussions with patients. Although risk models have long included nutritional factors, such as body mass index and albumin, indicators of immunologic status, such as the absolute lymphocyte

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count, C-reactive protein, and neutrophil to lymphocyte ratio have only been studied more recently.¹ Enhanced recovery after surgery pathways have also increased the focus on preoperative nutritional and immune assessments and optimization.

In this issue of the *Journal*, Park and colleagues² report their evaluation of the prognostic nutritional index (PNI)³ as a risk model for patients with lung cancer who underwent resection by open thoracotomy. They demonstrated that low PNI was associated with increased postoperative complications and reduced recurrence-free and overall survivals. The PNI, which is calculated with a formula that is based on preoperative albumin level and absolute lymphocyte count, is a well-established prognostic indicator that has been studied since the 1980s. The PNI reflects the nutritional, immune, and inflammation statuses of a patient. It is associated with oncologic outcomes, as well as outcomes of such other diseases as renal and heart failure. Despite the many articles throughout the medical literature showing accurate prognostication, the PNI is not popular among US surgeons. A quick search shows that the calculator is not included in either the Eporates application or the VASQIP calculator. We found only one previous article in PubMed that evaluated PNI for outcome prediction for lung resection.

Park and colleagues² demonstrated that a PNI lower than 50, similar to that obtained by other studies, was associated with increased risk. Because the patients in the high and low PNI groups were not completely

balanced (with the low PNI group having higher aspirin use, older age, and lower hemoglobin), the groups were compared with a propensity-scoring analysis that confirmed their findings. Park and colleagues² compared PNI with other predictive scores (neutrophil to lymphocyte ratio and C-reactive protein) and found that these other scores were not as predictive as the PNI in their population.

This work raises other questions. Do we need more scores, or is the eyeball test enough? Would we reject patients otherwise fit for surgery if the PNI was low? Perhaps those patients with a low score would be candidates for nutritional intervention, or “prehabilitation,” to improve their candidacy. As enhanced recovery after surgery pathways are increasingly recommended, perhaps pathways will be established that can help mitigate the effects of the low PNI. We commend Park and colleagues² for a study that was executed well and may improve the management of patients with lung cancer.

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