See Article page 1140.

Commentary: Preoperative nutritional status and mortality from cardiac surgery: Do we have your attention yet?

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Surgical recovery involves activation of numerous cellular processes, all of which depend on nutrient availability. Although poor nutritional status is common in surgical populations,¹ nutritional assessment methods, and their concomitant decision-making, have yet to be routinely implemented in many surgical practices. The nutritional status of our cardiac surgery patients may therefore represent an opportunity for process improvement.²

The current study by Cho and colleagues³ underscores the important role of nutrition in outcomes following valve surgery. Using multivariate methods, they report significant associations of 3 nutritional indices with 1-year mortality, independent of other risk factors including disease severity. These nutritional scores can be computed from routine laboratory tests and are much easier to employ than other nutritional surveys.⁴ Specifically, they report that the Controlling Nutritional Status (CONUT) score carries an independent hazard ratio of 1.31 for 1-year mortality, with linearity between the nutritional score and the log of the hazard. Their findings are consistent in effect and magnitude with other data on CONUT scores and mortality: in cardiac surgery,^{5,6} catheter interventions,⁷⁻¹¹ infective endocarditis,¹² and gastrointestinal cancer surgery.¹³⁻¹⁷ Studies on congenital heart surgery show strong links between

Good nutrition is essential to good outcome, but what should be done for those at risk?

CENTRAL MESSAGE

Preoperative nutritional scores predict 1-year survival following valve surgery. This merges well with the literature and should inspire us to take seriously the issues of perioperative nutrition.

nutrition and survival, although CONUT was not the scoring system used.^{18,19}

With such a consistent body of literature indicating that preoperative nutritional deficiency predicts poor prognoses, what does this mean for practitioners? Perioperative risk can be assessed more accurately when nutritional status scores are included with other risk factors, specific for each practice and patient population. But although screening to identify individuals at risk is essential to nutritional optimization,²⁰ screening is only a first step. What action should be taken when faced with a cardiac surgery patient having a low nutritional score? Action demands evidence, and the authors recognize that prospective studies are needed to address this question. To this end, data showing the benefits of targeted preoperative exercise and nutritional interventions are reported for colorectal and oncologic surgery,²⁰ and prospective trials of nutritional interventions in cardiac surgery are ongoing.^{21,22}

Currently, great attention is paid to adherence to Surgical Care Improvement Project guidelines for prevention of surgical-site infections.²³ If we are willing to invest effort into the timing of antibiotics to prevent infection, and the development and implementation of consensus guidelines, how much more effort should we be investing into studying perioperative nutritional status, which carries a roughly similar risk,²⁴ yet a far more serious outcome, mortality? As mentioned, quality evidence is first needed to evaluate the impact of targeted nutritional interventional in cardiac

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surgery²⁵; perhaps someday these data will inform the creation of other consensus guidelines for nutritional optimization. Until then, in the absence of specific nutritional guidelines for managing cardiac surgery patients at risk, practitioners should consider nutritional support as currently recommended²⁶ for general medical and surgical intensive care unit populations and keep a watchful eye on the literature for prospective trials of nutritional interventions.

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