

Letters to the Editor

Frailty, the Elderly, and the Guidelines on Perioperative Cardiac Risk Assessment and Management in Noncardiac Surgery



To the Editor:

Whitney et al.¹ correctly point out the growing evidence that frailty is a predictor of a variety of complications after surgery and that high-quality evidence for the optimal management of this population has been lacking in the cardiovascular literature. The Canadian Cardiovascular Society (CCS) Guidelines on Perioperative Cardiac Risk Assessment and Management for Patients Who Undergo Noncardiac Surgery is a focused document examining preoperative risk assessment, perioperative risk modification, postoperative monitoring for events, and management of cardiac events (the authors of this article participated on the primary panel of the CCS Guidelines on Perioperative Risk Assessment and Management for Patients Who Undergo Noncardiac Surgery and authored the guidelines document).² The primary panel rigorously reviewed the evidence using the Grading of Recommendations Assessment, Development, and Evaluation approach to inform rational decision-making in patients with increased cardiac risk and recognized that evidence will continue to evolve in this area.

Although the Panel did not include routine formal frailty assessment in its recommendations, the guidelines' first parameter to determine the pathway in risk assessment was age; the panel recommended further preoperative assessment by means of cardiac biomarkers in *all* patients aged 65 years and older. Therefore, according to this schema, all elderly patients are placed in the "at risk" group, and brain natriuretic peptide and N-terminal pro b-type natriuretic peptide screening is advised to guide risk estimation and perioperative monitoring for cardiac events.³

A number of frailty indices have been considered in the perioperative setting. However, it remains unproved whether these indices improve the net reclassification index of commonly used and simple indices such as the Revised Cardiac Risk Index (RCRI) and biomarkers regarding cardiovascular outcomes. An 11-point modified frailty index has been developed from the National Surgical Quality Improvement Program database, which shows predictive value

for mortality in a number of surgical settings.⁴ However, 6 of the 11 parameters considered are already encompassed by the RCRI.

The panel recommended postoperative care of at-risk patients, including elderly patients, by means of shared care models. Although this was a conditional recommendation based on limited evidence, the potential benefits of specialized geriatric care played a strong role in the recommendation.⁵

Beyond the scope of the CCS guidelines, frailty predisposes patients to an elevated risk of a number of perioperative complications in addition to cardiac events, and we anticipate with interest the results of continuing investigations in this area.

Joel L. Parlow, MD, FRCPC
Emmanuelle Duceppe, MD, FRCPC
P.J. Devereaux, MD, FRCPC

Disclosures

The authors have no conflicts of interest to disclose.

References

1. Whitney K, Nahid A, Power B. Perioperative cardiac risk assessment for the frail older adult. *Can J Cardiol* 2018;34:343.e11.
2. Duceppe E, Parlow J, MacDonald P, et al. Canadian Cardiovascular Society guidelines on perioperative cardiac risk assessment and management for patients who undergo noncardiac surgery. *Can J Cardiol* 2017;33:17-32.
3. Rodseth RN, Biccard BM, Le Manach Y, et al. The prognostic value of pre-operative and post-operative B-type natriuretic peptides in patients undergoing noncardiac surgery: B-type natriuretic peptide and N-terminal fragment of pro-B-type natriuretic peptide: a systematic review and individual patient data meta-analysis. *J Am Coll Cardiol* 2014;63:170-80.
4. Velanovich V, Antoine H, Swartz A, Peters D, Rubinfeld I. Accumulating deficits model of frailty and postoperative mortality and morbidity: its application to a national database. *J Surg Res* 2013;183:104-11.
5. Grigoryan KV, Javedan H, Rudolph JL. Orthogeriatric care models and outcomes in hip fracture patients: a systematic review and meta-analysis. *J Orthop Trauma* 2014;28:e49-55.