Validated scoring system for risk assessment in major thoracic surgery: how surgery boils down to risk and benefit!

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Most of the time, the decision to perform an operative procedure requires careful assessment of the potential risks and benefits involved. Indeed, in the absence of a quantitative method (scoring system), risk is usually assessed by applying knowledge gleaned from the results of surgical series published in the literature, registry data as well as from the personal experiences (clinical acuity) of the physicians who are about to perform the procedure. However, a number of biases may contribute to the difficulty of predicting the likelihood of an event [1]. Quantitative methods that discriminate factors associated with postoperative morbimortality and the integration of this information by clinical prediction rules [2] may benefit both the clinician and the patient. Consequently, the present article by Ferguson et al. [3] seeking to address the fundamental question of the accuracy of a scoring system to adequately assess the cardiovascular morbidity after major lung resection is of major importance.

In a retrospective study of a prospective database, the authors analysed outcomes of 1255 patients who underwent major lung resection from 1980 through 2009 for both benign and malignant disease. For this purpose, they used the previously published thoracic surgery revised cardiac risk index (ThRCRI), which is based on weighted factors for serum creatinine, coronary artery disease, cerebrovascular disease and extent of lung resection [4]. Target adverse outcomes of cardiovascular morbidity included pulmonary embolism, myocardial infarction, cardiac arrest, pulmonary oedema and cardiac death. The results showed that severe cardiovascular complications occurred in 30 patients (2.4%), an incidence similar to that in the published derivation group (3.3%). ThRCRI median scores were significantly different in patients with and without severe cardiovascular complications (0 versus 1.5; P < 0.001). In addition, ThRCRI categories yielded incremental risks of cardiovascular complications (0.0%; 1–1.5:4.5%; ≥2:12.8%; P < 0.001). The authors concluded that the ThRCRI score successfully stratified risk for postoperative cardiovascular events after major lung resection in their population.

Thoracic surgeons should be interested in the findings of this rigorous and stimulating study not only because validated risk scoring systems reveal precursors to individualized pre-operative risk analysis, but also because scoring systems are fundamental to quality control, re-validation of both clinicians and institutions, and benchmarking between different centres [5]. Indeed, scoring systems are used to provide an estimate (stratification) of postoperative risk of morbidity and mortality for a patient undergoing a particular procedure, and to evaluate or benchmark operative practices by taking into account their risk profiles and difficulties. It can also help to give informed consent, help organizations with allocation of resources and aid with the assessment of the overall quality of care.

Where do we go next in the burgeoning field of risk assessment in thoracic surgery? Improvements in current scoring systems are still necessary (area under the receiver operating characteristic curve for identifying relative risk of major cardiovascular complications in the current study is 0.736) before their routine use can be recommended. Nevertheless, the current contribution shows an essential way to explore, which is how future studies will determine the way scoring systems are to be used in order to increase efficiency. Clearly, it is of utmost importance to stress that clinicians have to be very careful in variations in patient populations among institutions or among countries.

Be that as it may, Ferguson et al. [3] are to be congratulated on their innovative contribution in this area. From the standpoint of medical care, their results will certainly prove to be most beneficial to the thoracic surgery community.

REFERENCES