CHRONIC OBSTRUCTIVE PULMONARY DISEASE SEVERITY INFLUENCES OUTCOMES AFTER OFF-PUMP CORONARY ARTERY BYPASS

To the Editor:

We read with great interest the article by Viceconte and colleagues,¹ who reported that chronic obstructive pulmonary disease (COPD) severity and preoperative forced expiratory volume in 1 second are predictors of poor outcomes after off-pump coronary artery bypass (CABG). This area of study is important and has not been adequately evaluated, making this article timely and relevant.

In our previous study regarding the effects of CABG in patients with COPD, we concluded that it would be of great interest to compare different CABG techniques, including on-pump and off-pump CABG, in this cohort of patients.² In general, the results of the study of Viceconte and colleagues¹ and our own² are not significantly different. Both studies concluded that incidences of reintubation, pneumonia, prolonged mechanical ventilation, and increased hospital length of stay were higher in the severe COPD group. The off-pump technique used seems to have had no important advantages and did not significantly improve the clinical outcome.

In our study,² we demonstrated that CABG has long-term beneficial effect in patients with COPD. Actuarial survival after CABG at 9 years was 92% for the control group, however, versus 65% for the COPD group (Figure 1). Before making a decision to perform CABG, the surgeon and pulmonologist should therefore evaluate history of the disease, all comorbidities, and patient symptoms.^{2,3} The spirometric evaluation of the severity of COPD is insufficient. For this reason, the severity of COPD determined purely from spirometric assessment was revised last year in the Global Initiative for Obstructive Lung Disease (GOLD) criteria.⁴

Unfortunately, in the study of Viceconte and colleagues,¹ postoperative function testing was carried out only on postoperative days 2 and 5. From our experience, many factors including pain and postoperative recovery, influence the early assessment of forced

FIGURE 1. Overall survivals after coronary artery bypass grafting in chronic obstructive pulmonary disease (COPD) and control groups. The blue line represents percent survival in COPD patients and the red line represents percent survival in control groups.

expiratory volume in 1 second and forced vital capacity, so the results in the early postoperative period are different from those at the 3- and 6-month follow-ups. Moreover, Viceconte and colleagues¹ only evaluated pulmonary complications, excluding the quality of life after surgery and the incidences of other complications, such as arrhythmias, wound infection, and mediastinitis. The article could be strengthened if Viceconte and colleagues¹ could provide the data concerning short-term and midterm follow-ups with the number and causes of hospital readmissions, especially since they found more severe COPD to be associated with lower ejection fraction.

Nevertheless, these and other findings presented in this article will help to decrease morbidity and mortality in patients with COPD after cardiac surgery.

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The Editor welcomes submissions for possible publication in the Letters to the Editor section that consist of commentary on an article published in the Journal or other relevant issues. Authors should: • Include no more than 500 words of text, three authors, and five references. • Type with double-spacing. • See <http://jtcvs.ctsnetjournals.org/misc/fora.shtml> for detailed submission instructions. • Submit the letter electronically via jtcvs.editorialmanager.com. Letters commenting on an article published in the JTCVS will be considered if they are received within 6 weeks of the time the article was published. Authors of the article being commented on will be given an opportunity of offer a timely response (2 weeks) to the letter. Authors of letters will be notified that the letter has been received. Unpublished letters cannot be returned.

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TAKING UP THE CHRONIC PULMONARY OBSTRUCTIVE DISEASE GAUNTLET

Reply to the Editor:

The letter to editor by Medalion and colleagues provides important additional insights in regard to the article by Viceconte and colleagues.¹ The authors have identified potential perioperative confounding factors, especially pain, which could influence forced expiratory volume in 1 second and forced vital capacity assessment the time points studied. This is perhaps a more likely scenario on the second postoperative day; however, it is unclear whether pain would have sufficient impact on postoperative day 5 and beyond, as patients do tend to report lesser pain issues over time.² In future studies, in addition to the inclusion of a more comprehensive measure of pulmonary function, we would recommend the use of a valid measure of pain to coincide with postoperative assessments.

The authors of the letter to editor have previously reported long-term mortality in patients with chronic pulmonary obstructive disease to be lower several years after cardiac surgery.³ This serves to highlight the need to longitudinal follow-up in prospective studies for this patient population. Further, the inclusion of data on pre- and postoperative frailty would provide valuable insight of additive morbidity and mortality in patients severe chronic pulmonary obstructive disease and decreased left ventricular ejection fraction after cardiac surgery.^{4,5} Finally, although the traditional metrics of survival and rehospitalization are essential endpoints, we and others have also advocated for the use of longitudinal health-related quality of life assessments as a key patient-centered outcome, particularly in the older, frail adult patient.^{4,5} What the “ideal” long-term health-related quality of life tool(s) that is accurate and clinically feasible, however, requires further study.

We support the statement by Medalion and Katz on the timeliness of this paper as a “call to arms” on the need to

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develop more detailed enhanced recovery protocols for these complex patients. We would further also advocate for the ongoing close collaboration between the pulmonologist and cardiac surgeon to extend beyond perioperative planning and include the transition to the community phase of the patient journey in this vulnerable population.

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IT'S THE LUNGS, NOT THE PUMP: CHRONIC OBSTRUCTIVE PULMONARY DISEASE SEVERITY AND OUTCOMES AFTER OFF-PUMP CORONARY

ARTERY BYPASS GRAFTING

Reply to the Editor:

In this issue of the *Journal*, Medalion and Katz¹ made some observations on the recent study by Viceconte and colleagues,² in which they examined the effects of the