LEFT VENTRICULAR FUNCTION AFTER MITRAL SURGERY: TIME TO FOCUS ON INTRAOPERATIVE MANAGEMENT?

To the Editor:

We read with interest the article by Quintana and colleagues¹ and a letter to the Editor by Buckberg and Athanasuleas² about this article published in the *Journal* in December 2014 and March 2015, respectively. We have some observations for the authors.

We focused our attention on Table 2, “Comparison of Postoperative Clinical Course Stratified by Early Predissmissal LVEF,” in the article by Quintana and colleagues.¹ In the footnotes of the table, it is clear that the data are presented as median (interquartile range) or n (%), but looking carefully at the line “Need for inotropic support,” we found 2 mistakes: If 136 patients in the first group of 1391 (ejection fraction [EF] ≥ 50) required inotropic support, they do not represent 28% but 9.77%. The same applies to the second group (EF ≤ 50) of 50 patients of 314. They do not represent 37.3% but 15.9%. This error is reported in the results: “As expected, patients with early dysfunction required more frequently postoperative inotropic support (28% vs 37.3%, $P = .04$),” but in the light of the wrong percentage calculation, the P value may be incorrect.

The second observation is related to the need of intra-aortic balloon pump (IABP). The authors report the same incidence of IABP use in the 2 groups. This event could be explained assuming that patients in the first group (EF $> 50\%$) have had a transitory left ventricular dysfunction (stunning) requiring IABP support, which quickly resolved without leaving any sign at predissmissal echocardiographic evaluation. This hypothesis strongly strengthens the suspicion of an inadequate intraoperative protection in these groups of patients.² Finally, the authors give no definition for “Need for inotropic support,” especially regarding the duration (>6 hours, >12 hours, >24 hours).

These data support the need to expand our research not only in the preoperative evaluation of patients with mitral

insufficiency but also in their intraoperative management with the objective to limit as much as possible the intraoperative damage related to cardiac arrest.

Giuseppe Crescenzi, MD^a

Filippo Capestro, MD^b

Lucia Torracca, MD^b

^aDivision of Postoperative Intensive Care of Azienda Ospedaliero-Universitaria Ospedali Riuniti Ancona, Italy

^bDivision of Cardiac Surgery of Azienda Ospedaliero-Universitaria Ospedali Riuniti Ancona, Italy

References

1. Quintana E, Suri RM, Thalji NM, Daly RC, Dearani JA, Burkhart HM, et al. Left ventricular dysfunction after mitral valve repair—the fallacy of “normal” preoperative myocardial function. *J Thorac Cardiovasc Surg*. 2014;148:2752-60.
2. Buckberg GD, Athanasuleas CL. Left ventricular dysfunction after valve mitral repair: predetermined or caused? *J Thorac Cardiovasc Surg*. 2015;149:94.

<http://dx.doi.org/10.1016/j.jtcvs.2015.04.046>

CHANGES IN LEFT VENTRICULAR VOLUME AND DECLINE IN EJECTION FRACTION AFTER DEGENERATIVE MITRAL VALVE REPAIR: THE MATH MAKES SENSE

Reply to the Editor:

We appreciate the interest shown in our work¹ by the authors from Ancona. In regard to their first point, we confirm that the numbers presented in our article are correct. Documentation of the use of inotropic support was available in only 619 patients because of changes in recording methodology over time. Among these individuals, 433 received inotropic support and 186 did not. The presented percentages, P values, and conclusions in the article are all accurate. Further, the frequency of intra-aortic balloon counterpulsation use was similar between groups with and without postoperative dysfunction, as documented.

The suggestion that a decrease in ejection fraction relates to the adequacy of myocardial protection reflects a commonly held misunderstanding regarding changes in ventricular volumes and left ventricular function immediately after correction of valvular regurgitation.² Consider, for instance, a minimally symptomatic patient with an ejection fraction of 65% and severe mitral valve regurgitation. If one assumes that the regurgitant volume is 80 mL and that the patient has normal preoperative cardiac output with a forward stroke volume of 70 mL, the preoperative left ventricular end-diastolic volume would necessarily be

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 to 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.