damage. This could be caused by the addition of adenosine prior to cardioplegia delivery and monitoring of the cardioplegia pressures in the EAB, or because of the significant difference in LV function between both groups. Shorter hospital stay was found in the EAB group. Conversion from EAB to EAC was considered an important complication; it occurred in 6% of the EAB cases.

In conclusion, there are no differences in use of the EAC and EAB regarding to CPB- and clamping-time, complications or clinical outcomes in our study. We do recommend that a randomized controlled trial be conducted in a referral centre where surgeons have completed their learning curve. Although this study has its limitations, a significant difference in postoperative troponin levels is found. The role of adenosine as myocardial protective agent should be further investigated.

Conflict of interest: Mohamed Bentala has a Consultancy agreement with Edwards life sciences.

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eComment. New onset atrial fibrillation induced by adenosine

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doi: 10.1093/icvts/ivv216 © The Author 2015. Published by Oxford University Press on behalf of the European Association for Cardio-Thoracic Surgery. All rights reserved.

We read with interest the article of Bentala et al [1]. The authors evaluated the differences in perioperative outcomes and complications between the endo-aortic balloon and the external aortic clamp during primary elective minimally invasive mitral valve surgery in a single referral centre by one surgeon. They reported that there was no difference in use between the endo-aortic balloon and the external aortic clamp in terms of cardiopulmonary bypass-time and cross-clamp time, complications or mitral regurgitation gradation at discharge. We appreciate the authors’ efforts on conducting this valuable study. Nevertheless, we would like to share our opinions about some of the results of the study.

As it is known, adenosine has also been shown to have powerful sympathomimetic effects through chemoreceptor activation, especially when administered as a bolus. Sympathetic activation has been demonstrated to be an important part of automatically-triggered pulmonary veins’ (PVI) firing in isolated canine preparations and intact dogs. Adenosine can also induce ectopy in electrically silent PVs that may lead to development of new onset atrial fibrillation [2]. It was reported that the number of new onset AF was found to be higher (though not statistically significant) in the endo-aortic balloon group when compared to that of external aortic clamp. We think that adenosine administered before cardioplegia in the endo-aortic balloon group might be the cause of new onset AF originating from pulmonary veins.

Conflict of interest: none declared.

References