method resulted in good balance between the DVR and AVR plus MVr populations, concomitant surgical histories of aortic graft replacement and implanted aortic valve type were different between the two groups, and also the potential remains for unmeasured confounders to have influenced the clinical outcomes. The sample size was small to draw a firm conclusion; and therefore, studies on larger populations are needed to verify the results of the current study. Functional MR was present in 38 (40.0%) and 11 (7.2%) patients in the AVR plus MVr and DVR groups, respectively. This factor also might have affected the decision to repair or replace the MV. Furthermore, because several surgeons performed the surgery, inter-surgeon variability in determining the reparability of the MV might have existed. This variability can have a significant impact on the study results. Finally, late (>6 months) postoperative echocardiography data were not available in 22.1% of the patients.

CONCLUSIONS

In conclusion, although the outcomes of either MVr or replacement for moderate-to-severe mitral regurgitation in patients undergoing concomitant AVR show no statistical significance in terms of long-term survival and valve-related events rate, DVR seems more hazardous than AVR plus MVr based on the estimated HR in terms of survival. Moreover, it should be noted that DVR is associated with a higher risk of reoperation, while AVR plus MVr may lead to progressive native mitral valve dysfunction.

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eComment. Repair versus mitral replacement in patients undergoing concomitant aortic valve replacement

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I congratulate Kim et al. on a very large series on double valve procedures with an impressively low in-hospital mortality rate [1]. Their work raises a number of interesting questions.

Firstly, 410 patients undergoing double valve procedures were excluded. Did all these patients have rheumatic mitral stenosis, or did another reason exist for their exclusion? The data on double valve replacement in patients with mitral stenosis may have helped to provide a control for mechanical valve related events and potentially a Kaplan-Meier survival comparison (which was not included in the manuscript) for the mitral repair group.

Kaplan-Meier survival curves are univariate in nature. Did a multivariate Cox model procedure provide the same outcomes as the inverse probability treatment weighted method? A simple Kaplan-Meier technique may be inaccurate, despite inverse probability treatment weighting, as significant differences in aortic tissue valve replacement and aortic graft replacement existed in their adjusted data. Of note, preoperative atrial fibrillation and ejection fraction also approached significance in the adjusted data. With nearly 25% of patients suffering postoperative mitral valve dysfunction at five years after repair surgery, I would tentatively interpret this as a need for caution for mitral valve repair in patients having concomitant mechanical aortic valve replacement surgery, or in patients with a life expectancy greater than five years.

Patients undergoing tissue or mechanical aortic valve replacement surgery are by definition different patient populations, regardless of any mitral valve procedure performed [2]. Propensity matching and Cox multivariate analysis are unlikely to adjust for this selection bias. I would be interested in knowing the outcomes for patients undergoing double valve replacement versus aortic valve replacement plus mitral valve repair, for tissue and mechanical valve replacement subgroups.

I thank Kim et al. for their thoughtful analysis of a high-risk difficult subgroup of patients.

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References