

Letter to Editor

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Anaortic off-pump coronary artery surgery as a primary strategy to reduce the risk of neurological complications

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We read with great interest the article by Seco and colleagues^[1] based on their experience with the anaortic off-pump coronary artery bypass grafting (CABG), addressing the main advantages based on avoiding manipulation of the ascending aorta and achieving complete revascularization using multiple arterial grafts. Avoiding manipulation of the aorta has the rationale of reducing the risk of neurological complications, especially in high-risk patients affected preoperatively by previous ischemic stroke and or severe carotid artery atherosclerotic disease. The authors describe several techniques of arterial grafts sampling, and T- or Y-graft anastomoses. However, it is not always possible to use multiple arterial grafts, especially in elderly patients affected by lung disease or at risk of sternal dehiscence. We have conducted a monocentric study to evaluate the results of device-assisted (PAS-port, Cardica Inc., Redwood City, CA, US) clampless off-pump CABG. The PAS-Port device was used to perform proximal anastomoses of venous grafts on the ascending aorta during off-pump CABG, as compared with conventional on-pump CABG in 143 pairs of patients, after score matching of preoperative variables^[2]. Rate of neurological injury was 2.1% in the clampless off-pump group and 9.1% in the conventional on-pump group ($P = 0.02$). As compared with the off-pump group, the higher incidence of neurological complications observed in the on-pump group was due primarily to a greater number of reversible neurological events, i.e., transient ischemia or delirium (6.3%, or 9 patients *vs.* 2.1%, or 3 patients). Two patients in the on-pump group experienced postoperative stroke.



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Off-pump CABG was found to be a protective factor against the onset of neurological complications ($P = 0.04$; HR = 2.0). Conversely, 14-year freedom from major adverse cardiac and cerebrovascular events was comparable (50% vs. 51%)^[2].

Reported data showed that by avoiding manipulation of severely atherosclerotic and calcified aorta during cannulation or during cross-clamping, the neurological risk could be considerably reduced, especially that deriving from particulate embolism. Anaortic off-pump total arterial revascularization strategy, or the use of an automatic saphenous graft connector, can help to improve early outcomes.

DECLARATIONS

Authors' contributions

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Supervision: Pisano C, Ruvolo G

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Conflicts of interest

All authors declared that there are no conflicts of interest.

Ethical approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

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