

On- vs. off-pump coronary artery bypass grafting in a heterogeneous patient population

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Regarding the article published in the *Ann Transl Med* (Nicola King. “On vs. off pump coronary artery bypass grafting: the next chapter”. 2017;5:116). The author concluded that no significant difference in hard clinical outcomes following either off- or on-pump coronary artery bypass grafting (CABG) at 30 days, 1 year and 5 years post-operation.

Certainly, our study is not a new topic, and we do agree that comparisons like this and more sophisticated ones exist in the literature since the introduction of off-pump surgery 2 decades ago. A broad spectrum of modern cardiac surgery still needs cardioplegia and the clinical data in this area still remain uncertain, thus the need of studying this issue is continuously evident.

As you had already noticed the main issue in our study was to clarify whether the off-pump surgery is actually superior to on-pump surgery. Even our study is retrospective in its nature and the patients were unevenly distributed, we reviewed a huge amount of well documented data from our institutional data base and we used the proper statistical methods to improve our interpretation of data.

This study consisted in 1,461 patients retrospectively analyzed off-pump coronary artery bypass (OPCAB) (n=684), off and on pump (n=773). Patients were comparable (P>0.05) in terms of age, gender, body mass

index and logistic EuroSCORE. However, OPCAB patients had better preserved left ventricular (LV) function and were less likely to have three-vessel disease (P<0.001) or undergo an urgent procedure (P<0.001). These patients attended at the Royal Infirmary Hospital of Edinburgh between April 2006 and December 2008. Due to the retrospective nature of our study, randomization of patients was not possible. We have found that following operation, OPCAB patients benefited with respect to blood requirement (mean =0.69 vs. 1.03, P<0.001), cerebrovascular accident (CVA) (n=0 vs. 9, P=0.005), sternal wound infection (n=9 vs. 22, P=0.04) and hospital stay (mean =7.4 vs. 8.9, P<0.001).

In our experience, OPCAB is a valuable technique for a large number of patients in lower risk categories. Only large appropriately powered randomized studies will determine whether this approach is justifiable.

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Footnote

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