

Reply

To the Editor

We appreciate the interest and thoughtful comments of our colleagues regarding our study on acute kidney injury (AKI) [1] and we are glad to provide more details and thoughts. AKI definition followed the indications of the Acute Kidney Injury Network [2], where a postoperative twofold creatinine increase or a urine output less than <0.5 ml/kg/12 hours means kidney injury. Moreover, as our patients were somehow low-risk (92.5% elective surgeries, 6.6% redos, average serum creatinine 1.06 mg/dL), only very few (13/3219, 0.4%) required intraoperative hemofiltration. Moreover, it is well known that preoperative anemia is a major predictor of unfavorable outcomes and of need of blood transfusion in these patients population [3]. We were unable to assess the role of preoperative hemoglobin level on the occurrence of AKI and on the need of blood transfusions in our patients because this variable had more than 4% of missing data and was for this reason excluded from analysis, as logistic regression requires complete patient data for each case. However, the fact that all multivariate models including intraoperative variables retained the number of units of red blood cells that were transfused during surgery as an independent predictor of AKI is an indirect demonstration that even in our patient population preoperative anemia is detrimental for patients. Finally we chose not to study off-pump patients for the following reasons: 1) they were limited in number (330 patients, less than 10% of our coronary bypass patient population) and this would have preclude to obtain robust AKI predictors at multivariable models; 2) one of the major aims of our study was to assess the role of CPB and of CPB-related variables on AKI occurrence, and patients operated off-pump could not be obviously included. As the role of on- and off-pump coronary bypass surgery in perioperative AKI occurrence is still uncertain [4,5], further studies are eagerly waited to clarify this point.

Alessandro Parolari MD PhD^{a,c}

Davide Pacini MD^b

Francesco Alamanni MD^{a,c}

^a Unit for Clinical Research in Atherothrombosis, Centro Cardiologico Monzino IRCCS; Department of Cardiovascular Sciences, University of Milan, Milan, ITALY

^b Department of Cardiac Surgery, S Orsola-Malpighi Hospital, University of Bologna, Bologna, ITALY

^c Centro Cardiologico Monzino IRCCS, Milan, ITALY

* Address for correspondence:

Alessandro Parolari MD PhD

Centro Cardiologico Monzino IRCCS

Via Parea, 4, 20138, MILANO, ITALY

Phone +39-02-580021, Fax +39-02-58011194

e-MAIL: alessandro.parolari@cardiologicomonzino.it

REFERENCES

- 1) Parolari A, Pesce LL, Pacini D, et al. Risk factors for perioperative acute kidney injury after adult cardiac surgery: role of perioperative management. *Ann Thorac Surg.* 2012;93:584-91.
- 2) Bell M, Liljestam E, Granath F, Fryckstedt J, Ekblom A, Martling CR. Optimal follow-up time after continuous renal replacement therapy in actual renal failure patients stratified with the RIFLE criteria. *Nephrol Dial Transplant.* 2005;20:354-60.
- 3) Koch CG, Li L, Duncan AI, Mihaljevic T, et al. Morbidity and mortality risk associated with red blood cell and blood-component transfusion in isolated coronary artery bypass grafting. *Crit Care Med.* 2006.
- 4) Lamy A, Devereaux PJ, Prabhakaran D, et al. Off-pump or on-pump coronary-artery bypass grafting at 30 days. *N Engl J Med.* 2012;366:1489-97.
- 5) Møller CH, Penninga L, Wetterslev J, Steinbrüchel DA, Glud C. Off-pump versus on-pump coronary artery bypass grafting for ischaemic heart disease. *Cochrane Database Syst Rev.* 2012 Mar 14;3:CD007224.