


Reply
To the Editor:

We thank Dr Mariscalco and colleagues for their letter [1] commenting on our recently published study [2]. They raise a number of interesting considerations. The association between the angiography timing and postoperative kidney injury unfortunately escapes any possibility of reaching a level I of evidence. Therefore, we can rely only on retrospective series that are more reliable with a larger study population and number of the recorded variables.

Acute kidney injury (AKI) recognizes a number of risk factors that could be preoperative, intraoperative, or postoperative. Dr Mariscalco and colleagues hypothesize that patients in the group receiving surgery in close succession to angiography have a higher preoperative risk profile. This possible bias can be addressed by doing a multivariable logistic regression analysis, inclusive of all the available possible confounders. It is true that in our series, patients receiving the angiography on the same day of surgery were most likely to be urgent cases (7.4% vs. 1.5%). Nevertheless, our analysis correctly included the variable urgency within the multivariate model. Even including the urgency variable in the model, the angiography on the same day of surgery maintains its value as an independent risk factor for AKI stage 2–3, with an odds ratio of 1.58. Despite the inclusion of as many as 10 confounders in our multivariable analysis, angiography on the same day of surgery remains an independent risk factor for AKI. For what concerns the surgery details, there are certainly differences related to this variable, even if the isolated valve surgery does not necessarily carry an additional risk; this is confirmed by our univariate analysis. The differences, however, disappear when included in the multivariate model. Mariscalco and colleagues correctly pointed out that this fact could be due to the variable CPB time that was included in the model. CPB duration incorporates both the surgery complexity issue and the time of exposure to the deleterious effects of CPB itself. Of course, this dichotomy could be solved using appropriate statistical methods, but this goes beyond the objective of our study in which we believe that the inclusion of CPB duration as an adjustment variable could be sufficient to include the surgery complexity within the model. Ultimately, we believe that a scientific assumption should always be confronted with the clinical practice. For this reason, in a pragmatic way, we decided to add a before-and-after analysis in our study, based on either a liberal (before) or restrictive (after) policy for the angiography on the same day of surgery. This analysis confirmed a significant decrease of the AKI rate after adoption of the restrictive strategy. We believe that this “field test” is the most convincing element of our study.

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References