CMV and Cardiovascular Disease: Reply

We read with interest the comments by Arasaratnam [1]. Even though he agrees that we provided a convincing argument for the role of cytomegalovirus (CMV) exposure in posttransplant cardiovascular (CV) events [2], he also highlights an inadequate calibration of our model. We acknowledge that the goodness of fit of our model was insufficient, suggesting missing parameters. However, the area under the receiving operating characteristic curve was 0.7 (0.66–0.73), indicating that our model enables good discrimination. In other words, our model is relevant but probably lacks accuracy.

Predicting posttransplant cardiovascular risk is challenging. The increased risk of CV disease is primarily due to an
increased prevalence of traditional CV risk factors [3, 4]. Nevertheless, usual CV scores, such as those from the Framingham study, are not well calibrated and invariably underestimate the true CV post-transplant risk [3, 4]. Of note, a number of studies failed to identify high blood pressure as a relevant risk factor in this population. This might be due to their high prevalence and should encourage physicians to use more accurate definitions. Graft dysfunction has been associated with posttransplant CV disease [5], and we acknowledge that this is an important point to consider. However, we did not observe any association between CMV exposure and/or infection and graft dysfunction. A confounding effect seems unlikely. Anemia predisposes to congestive heart failure rather than to atherosclerotic complications [6]. Impaired fasting glucose and new onset diabetes after transplantation are both CV risk factors [7]. Unfortunately, definition of posttransplant diabetes varied during the study period, and it was impossible to use a homogeneous definition for this covariate.

The list of covariates of interest in posttransplant CV disease is constantly growing. Markers of inflammation, oxidative stress, and thrombophilic factors have been reported to play significant roles in posttransplant CV disease. Nevertheless, whether they add to the predictive value of current risk models is unknown.

Notes

Acknowledgments. We acknowledge that prospective large multicenter studies are required to better define the place of new CV risk factors in the old list of traditional risk factors.

Financial support. This work is supported by grants from the Fondation de Transplantation. C. C. received financial support from the Fondation de Transplantation (ET-031211 and ET-050320, respectively).

Potential conflicts of interest. The authors of the manuscript have no conflicts of interest to disclose as described by the Journal of Infectious Disease. All authors: No reported conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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Received 10 May 2013; accepted 13 May 2013; electronically published 13 September 2013.

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DOI: 10.1093/infdis/jit329