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In Reply:

Regarding the number of letters Dr. Kempen produced in the past years, his comment relative to our study about perioperative use of statins[1] might be useful for understanding perioperative effect of chronic cardiac treatment.

The first part of the comment was related to the inclusion of variables in the propensity score. We did not include the variable "Year of surgery" in the propensity score because it did not predict the presence of statins. A better understanding of the method would have allowed consideration that patients' medical history might have changed during the year in question, and that the expected effect of this covariable on the probability of being treated by statins was implicitly characterized by other variables that were already included in the propensity score.

As we have shown, the adjustment of the propensity score provided a very good balance between statin users and control subjects. The inclusion of the year of surgery would not have improved the propensity score, as well as the other variables mentioned in the comment. The second part of the comment was related to the surgical characteristics. The rate of endograft procedures remained constant, and as low as 7% during the study period. This low rate, associated with the high experience of the surgeons, probably explains why we did not observe any conversion to open procedures. Endograft treatment was not associated with statin use. Furthermore, although probably not outlined clearly enough, these patients were not included in the analysis, because the rate of postoperative major adverse events is recognized as being lower.

The difference between abdominal and lumbar approach was not associated with the preoperative use of statins, when the other variables were taken into account. In fact, it might be obvious for most of us that some surgical characteristics are predictors of postoperative adverse events. However, the question is to know whether these events are associated with the use of statins. This is the aim of propensity score, *i.e.*, to estimate the probability of receiving the treatment of interest given the other covariates.

In randomized controlled trials, treatment allocation is at random, meaning that the probability of receiving the experimental treatment is 0.5 for each patient. Conversely, for propensity score analysis, the probability of receiving the experimental treatment, given the other covariates, is identical for each patient. However, because some unknown and underlying covariables might operate, a propensity score analysis should not conclude about causality. Consequently, randomized controlled trials will always remain the gold standard.

Finally, the comment of Dr. Kempen underlines the need for education about modern statistical methods. We fully agree upon the role of propensity score methodology in exploring drug effects as well as in the need of review articles for emergent and complex statistical methodology.

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Relevance and Value of a Morphine Immunoassay as a Diagnostic Aid for Neuromuscular Blocking Drug-induced Anaphylaxis

To the Editor:

Neuromuscular blocking drugs (NMBDs) are the major cause of episodes of immediate hypersensitivity during the perioperative period.[1] The detection of liberated mast cell tryptase[2] is used to confirm an anaphylactic event; skin prick testing with all currently used unconjugated NMBDs, followed by intradermal tests if necessary, is central to identifying the culprit, as well as cross-reacting drugs. Identification of the implicated NMBD(s) is important for providing safe anesthesia for the patient in the future. Although skin tests remain the diagnostic tool of choice, their sensitivity and specificity have at times been questioned. Serum immunoglobulin E (IgE) antibody assays are often used in cases involving skin test-negative or equivocal reactors or when skin tests are unreliable or unavailable, making these tests useful adjuncts to skin and tryptase tests. They are also valuable when applied to sera taken at the time of the reaction, to preoperative serum samples, and serum taken before or after death.[3] The IgE assay in inhibition form can sometimes help in identifying and providing immunochemical insights into cross-reacting drugs.[3,4] After extensive testing over many years on hundreds of serum samples, a morphine-solid phase was shown to be superior to NMBD-solid phases and other selected solid phases for the detection of NMBD-reactive IgE antibodies, and its use, along with the tryptase and skin tests, was strongly advocated as the best diagnostic combination of