Reviewer’s report

Title: Propensity Matched Analysis of Longterm Outcomes Following Transcatheter Based Aortic Valve Implantation Versus Classic Aortic Valve Replacement in Patient With Previous Cardiac Surgery

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Reviewer: Marc R. Moon

Reviewer’s report:

The problem I have with propensity analysis in general is that some of the morbidity and mortality can be hidden. For example, the authors report a 0% stroke rate and speculate that TAVI “may ... abandon this devastating complication as evidenced in a 0% stroke rate.” In order to say this, they have to report a 0% stroke rate for all cases, not only propensity selected. Therefore, before acceptance, I feel the authors must include two additional tables, a repeat of Table 1 with all patients (52 TAVI, 167 Open) and a repeat of Table 3 with all patients. Propensity analysis is ok to compare two techniques, but not acceptable in my mind to make summary statements about one particular approach (i.e., that TAVI eliminates stroke). Otherwise, the data groups our very well matched and their comparison is valid.

A couple of criticisms they need to address more aggressive is their high redo mortality rate and perivalve leak rate. Most experienced surgeons would find 16% too high for redo AVR. In addition, the perivalve leak rate has been downplayed too much. There is strong evidence in the literature that perivalve leak increases late mortality. Their statement that “we could not find such a correlation” is an attempt to underplay the importance of a 33% perivalve leak rate. Obviously, they did not find a relation, they only had 40 patients in their group. Also, their suggestion that trials should investigate whether TAVI should be expanded to younger patients with a lower risk profile is unwarranted given the high perivalve leak rate and the known relationship between perivalve leak and diminished long-term survival. The last sentence of the conclusion in the abstract and the manuscript should be removed. I feel it takes away from the otherwise appropriate presentation of their findings.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests