Reviewer's report

Title: Feasibility of a new method using two-dimensional transesophageal echocardiography for aortic annular sizing in patients undergoing transcatheter aortic valve implantation; a case-control study

Version: Date: 5 10 May 2015

Reviewer: Marcus Franz

Reviewer's report:

The study entitled “Feasibility of a new method using two-dimensional transesophageal echocardiography for aortic annular sizing in patients undergoing transcatheter aortic valve implantation; a case-control study” by Sherif and colleagues is aimed to compare two different methods to measure the aortic annulus in 2D-TEE (cross-sectional short axis versus long axis) before TAVI (using Medtronic CoreValve bioprosthesis) in 149 patients suffering from severe symptomatic aortic valve stenosis.

This is a very well performed study focusing on an important clinical issue in the context of planning TAVI procedure in patients with aortic valve stenosis: annulus measurement using transesophageal echocardiography as an attractive alternative to CT based measurement, which is the gold standard until now. The motivation of the study is innovative and smart because the authors use 2D-TEE as a very simple method which is, i.e. compared to 3D-TEE, widely available and relatively easy to perform in good quality. The authors compared annulus measurement in 2D-TEE cross-sectional short axis versus long axis and found that cross-sectional short axis is superior in terms of the post interventional incidence of aortic regurgitation with a convincing and statistical significant difference. In the eyes of the reviewer this is an important study supporting the value of TEE annulus measurement before TAVI as an innovative method compared to CT scans especially when considering comorbidities, in particular renal failure, in TAVI. The study exclusively analysed the self-expandable Medtronic CoreValve bioprosthesis. It would be great to perform a further study including patients with balloon-expandable prosthesis to compare 2D-TEE cross-sectional short axis versus long axis for aortic annular sizing with the same study design as applied in the current study.

Taken together, this a very nice and clinically important study which merits publication.

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.