Reviewer's report

Title: Transcatheter MitraClip Repair Alters Mitral Annular Geometry – Device Induced Annular Remodeling on Three-Dimensional Echocardiography Predicts Therapeutic Response

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Reviewer: Francesco Moroni

Reviewer's report:

In this very interesting paper, Kim and colleagues present a retrospective series of 80 subjects undergoing MitraClip for moderate to severe (3+ to 4+) mitral regurgitation. In this series they report on the impact of left ventricular and atrial volumes and, most interestingly, Mitral Annular geometries, on short term response to in terms of MR reduction after MitraClip. The implant of MitraClip on annular geometry was also evaluated.

At a mean follow up of 2.5 months, patients with 1+ or less MR were 59% of the total and were the ones with smaller pre-procedural LV and LA sizes as well as annular size dimensions. MitraClip reduced annular dimensions in all subjects, but the magnitude of reduction was greater in those who had an optimal response to the device.

The work is interesting, well written and presented. I have some suggestions:

* The grading of post-implant residual MR is still a matter of intense debate. Please fully report which parameter have you taken into consideration, and report how many patients have no residual MR, how many 1+, 2+, 3+ and 4+ residual MR. I would also suggest providing a supplementary table in which to indicate the specific values for the parameters taken into consideration (e.g. EROA, RVol...) in responders vs non responders.

* Please provide the years taken into consideration for patients selection. How many patience were treated with MitraClip overall in those years? What were the most common reasons for exclusion? Please provide a flow chart.

* Was the impact of MitraClip on annular geometry consistent across the different etiologies for MR? I would expect for example a different impact in calcified annuli when compared to subjects with mitral valve prolapse.

Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
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Acceptable

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