

Bioresorbable Vascular Scaffolds in coronary chronic total occlusions. Clinical, vasomotor and optical coherence tomography findings at 3-year follow-up (ABSORB-CTO study)

Dear Dr. Serra-Peñaranda,

Thank you for your recent submission to JACC: Cardiovascular Interventions. Your manuscript has been carefully evaluated by the editors and by expert external referees. Unfortunately, the consensus is that it cannot be accepted in its present form. However, we would be very interested to consider your manuscript as a Research Correspondence on a de novo basis. Because of the extensive revisions required, your manuscript will be treated as a new submission, assigned a new manuscript number, and may be subjected to peer review and prioritization in competition with all other manuscripts.

If you elect to resubmit, please provide an explanation of the changes made to the manuscript. We expect you to consider the comments made by the reviewers, but we do not expect you to address them fully given the paper's length will need to be substantially reduced. Those reviewers' comments that will bring clarity or focus to your submission should be strongly considered.

If you choose to submit your work as a Research Correspondence, please note the requirements must be adhered to and include a maximum of 800 words (including references and figure/table legend), a maximum of 5 references, and a maximum of 1 table or 1 figure. Online or supplemental materials are not permitted. In resubmitting please go to www.jaccsubmit-interventions.org. You may contact us by email at jaccint@acc.org if you require assistance. Please state in your cover letter that this is a de novo submission, AND INCLUDE THE ORIGINAL MANUSCRIPT NUMBER.

Thank you for your interest in the journal, and we look forward to reviewing other submissions from you in the future.

Sincerely,

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Reviewer #1 (Comments for the Author (Required)):

The Authors need to be congratulated to have conducted such an important study providing new information.

Overall I think it is interesting to report the scaffold area nevertheless I think the authors should report the OCT lumen area at baseline, 1 and 3 years in the abstract because this number gives the effective lumen available for blood perfusion.

Specific comments

- I am quite surprised by the low % of postdilations
- I think it is more appropriate to stick to a standard definition of lumen loss that has a positive sign when it is a loss and a negative sign when it is a gain. A loss with a negative sign can be interpreted as a gain!
- Finding some degree of acquired malapposition at 1 year may justify prolonging the duration of DAPT. I think the authors should consider this possibility in the discussion.
- Some references are incomplete.
- In my opinion Figure 2 should be the Central Illustration because it summarizes very well the findings of this study.

Reviewer #2 (Comments for the Author (Required)):

In the current manuscript Gheorghe et al report the 3-year results of a prospective registry entitled ABSORB-CTO in which 33 patients with true CTO coronary lesions underwent CTO-PCI with BVS implantation and received serial QCA, MSCT, OCT and vasomotion assessment over 3 years. I have the following comments:

- 1) The authors should be congratulated for undertaking such detailed data collection and analysis. However, this report would definitely benefit from a more focused approach in underscoring what is really new or unique in the observations of the investigators. The authors provide a mole of data with a result section and table 3. The finding that BVS are associated with positive vessel remodeling over time is not new and already shown in significantly larger reports (Serruys et al JACC 2017). In addition, the clinical significance of this finding remains questionable. The strength of the study is that the authors are focusing in a complex subset of lesions and as such this should be better emphasized.
- 2) The finding that some cases of LAISA disappear over time with resorption of the scaffold is interesting. However, the authors should make a better effort in explaining the clinical implications of this finding.
- 3) Table 3 is very difficult to follow and read - please re-format so that this can be reader-friendly and consider removing redundant data
- 4) The finding that recanalization of CTO is associated with significant residual endothelial dysfunction is also not new (Galassi et al - JACC 2012, among others). The authors should put into perspective their findings by comparing their observation with the extensive experience using metallic DES in CTOs.
- 5) In line with my comment number 1 - the authors have already published the 1

year results from this registry (Vaquerizo et al - AJC 2016). However in the current manuscript the 1 year results are re-presented in both the result section and Table 3. To also avoid reporting of already published data the authors could focus only on the 3-year data and their differences with the findings at 1 year.

6) The authors must provide data on BVS dimensions (diameter and length). Also the rates of post-dilation seem quite low (60%). The authors should report the % of patients in which a PsP protocol was used and if there were any differences over time in imaging parameters.

7) This report included only 33 patients - therefore any inference regarding clinical outcomes of BVS in CTO should be significantly toned down. For example statements like "BVS implantation in CTO lesions is safe, with favourable clinical outcomes at 3-year follow-up" is not appropriate since we already know from adequately powered RCTs that BVS are not associated with favourable outcomes compared with metallic DES even in simpler coronary lesions. Please tone down any conclusion regarding clinical outcomes of BVS in CTO.

8) In methods the authors should specify the type of device that was used (I guess the Absorb BVS GT1). It should also be disclosed in the limitations that the device that was used in the study (if it is the Absorb BV GT1) is no longer available for commercial use.