Bioresorbable scaffolds for the treatment of acute coronary syndrome. A possible niche indication or not?

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Commentaries

Bioresorbable scaffolds for the treatment of acute coronary syndrome. A possible niche indication or not?

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In *Cardiovascular Revascularization Magazine,* Picard et. al. report the outcomes of 482 patients treated with ABSORB BVS in 580 lesions, of which 71.2% presented with acute coronary syndrome (ACS). At a mean follow-up period of 816.2±242.6 days, the primary endpoint of device oriented composite endpoint (DOCE) had occurred in 9.4% of patients; scaffold thrombosis occurred in 2.3% of the patients. No scaffold thrombosis occurred between 2 and 3 years follow-up. In multivariate regression analyses, it was found that ACS was the only significant predictor of lower rates of DOCE (p=0.04, HR: 0.47, 95% CI: 0.23-0.96).

It has been hypothesized that patients with ACS, especially patients with ST-segment elevation acute coronary syndrome (STE-ACS) or non-STE-ACS, might represent a specific subgroup in which bioresorbable scaffold implantation can lead to more favorable outcomes. In that respect, the reported results by Picard et.al., in which ACS was the only significant predictor of lower DOCE rates, are encouraging.

The current manuscript describes results of an all-comers population with a high incidence of patients presenting with ACS (71.2%). Within the patients presenting with ACS, the percentage of patients presenting with unstable angina (25.1%), is remarkably high, however. The applied definitions could therefore make the non-ACS population consist of much more complex patients, with more complex lesions, thus enhancing the potential benefit of Absorb BVS treatment in patients presenting with ACS when compared to patients presenting with non-ACS.

To the best of our knowledge, this is the first study that reports the benefit of treatment with Absorb BVS in patients presenting with ACS, together with lower rates of scaffold thrombosis when compared to non-ACS patients. Previously, in the TROFI II study, it has been shown that stenting with Absorb BVS in patients presenting with STE-ACS results in nearly complete coronary arterial healing at 6 months [1]. Longer follow-up of the same trial, however, reported discrepant findings with higher rates of device thrombosis in Absorb BVS treated patients when compared Xience EES treated patients [2]. It has been hypothesized that suboptimal implantation techniques, such as insufficient lesion preparation, incorrect scaffold sizing, or incorrect postdilatation could contribute to an increased rate of device thrombosis [3]. In ACS, the presence of a thrombus, is likely to contribute to suboptimal device sizing, potentially resulting in higher rates of device thrombosis [4]. On the other hand, ACS patients (STE-ACS patients in particular) are generally younger, and most often have lesions with softer plaques, a lower plaque burden and less extensive coronary artery disease [5]. Given their younger age and their specific lesion characteristics, ACS patients, however, could potentially have more benefit from treatment with bioresorbable scaffolds, compared to patients with stable coronary artery disease. It is also encouraging that there were no cases of device thrombosis between years 2 and 3 in this population.

To date, the potential benefit of treatment of ACS patients with bioresorbable scaffolds remains debatable. Although, the current manuscript reports promising results, we would like to emphasize that future prospective randomized studies, in ACS patients treated with new-generation bioresorbable scaffolds with use of dedicated scaffold implantation strategies, are necessary in order to establish the real potential benefit of treatment of ACS patients with bioresorbable scaffolds.

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Disclosures

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