A MEDIUM TERM FOLLOW-UP BY MULTISLICE COMPUTED TOMOGRAPHY CORONARY ANGIOGRAPHY ASSESSING THE PERSISTENT PRESENCE OF BIORESORBABLE VASCULAR SCAFFOLD METALLIC RADIOPAQUE MarkERS AT THE SITE OF IMPLANTATION

Poster Contributions
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Background: The eventuality of metallic radiopaque markers (MRMs) embolization after scaffold implantation at medium and long term follow-up exists. We sought to assess the presence and location of the MRMs 18 months after implantation of the fully bioresorbable everolimus-eluting scaffold (Absorb, Abbott Vascular, Santa Clara, California).

Methods: The ABSORB trials (ABSORB Cohort A, ABSORB Cohort B and ABSORB EXTEND) were non-randomized multicenter (56 centers), single arm studies, in which 943 patients with de novo native coronary artery lesions were treated with Absorb scaffold. Out of these 943 patients, 165 patients with 168 lesions underwent Multislice computed tomography coronary angiography (MSCT-CA) at 18 months. Four criteria were used to ascertain the persistent presence of MRMs and distinguish them from calcified nodules (CN): 1) corresponding anatomical position of MRMs on MSCT and conventional angiography at index procedure; 2) difference in specific density in Hounsfield units of MRMs vs. CN; 3) nominal scaffold length vs. measured length on MSCT; 4) typical location and orientation of the MRMs on MSCT at the opposite sides of the scaffold edges.

Results: Of 168 lesions, 162 lesions were treated with a single bioresorbable scaffold, whereas 6 lesions were treated with two overlapping scaffolds at index procedure (total number of MRMs 348). There was no discernible presence of radiopaque markers in distal vascular beds. The median peak density of MRMs was 1,368 HU (interquartile range: 1,158 to 1,715 HU) in contrast to the median peak density of CN that was 946 HU (interquartile range: 844 to 1,133 HU). The median MSCT scaffold length was 18.0 mm, ranging from 12.0 to 35.0 mm, the median nominal scaffold length was 18.0 mm, ranging from 12 to 28 mm. The median absolute difference in length obtained by MSCT compared with nominal scaffold length was 1.0 mm (interquartile range: 0.0 to 1.4 mm). According to the criteria, all 348 MRMs were identified and located at the site of the initial implantation.

Conclusion: Based on the above mentioned 4 criteria, there was no evidence of MRMs dislodgement and embolization 18 months after scaffold implantation.