

Absorb Everolimus-eluting Bioresorbable Vascular Scaffold vs. Everolimus-eluting Stents in the Treatment of Long Coronary Artery Lesions (≥ 40 mm)

Abstract

Background: Absorb BVS introduces the potential true anatomical and functional “vascular restoration”. Bioresorbable vascular scaffold (BVS) treatment of long coronary lesions is particularly attractive due to its complete resorption within years, and the restoration of vasomotor and endothelial function.

Aim: Study of safety and efficacy of Absorb (BVS) in compare to Everolimus Eluting Stent in treatment of long coronary lesions ≥ 40 mm.

Methods: A single centre, prospective case control study. 60 high risk patients with SIHD and long coronary de novo lesions ≥ 40 mm divided into two comparable groups; Group 1 were treated by BVS, while group 2 lesions were treated by EES. RVD < 2.5 mm were excluded as well as highly complex lesions. Major attention was paid to optimize BVS implantation technique regarding appropriate lesion preparation, routine postdilatation with the use of intracoronary imaging, including IVUS or OCT if immediate angiographic results were unsatisfactory.

Results: The baseline MLD in BVS group vs. EES group (0.4860.16 vs. 0.4360.13 respectively) was significantly increased post PCI (2.7760.34 vs. 2.7160.23 for BVS group vs EES group respectively), the mean stent length was 53.969.3 in BVS group vs. 59.13612.5 in EES group ($P > 0.05$). In the current study, immediate post procedure MLD of Absorb vs. EES was 2.7760.34 vs. 2.7160.23, while follow-up coronary angiography at six months showed MLD of 2.7060.35 and 2.6460.18 for BVS group vs. EES group respectively) confirming no statistically significant QCA changes. Six-month follow-up of both groups showed no reported cases of stent thrombosis or restenosis.

Conclusions: BVS is safe in long coronary artery lesions. Study shows comparable short and intermediate term results as compared to EES in appropriately selected patients if BVS implantation technique is optimized.