

# Management of Bifurcation Culprit Lesions in Patients Presenting with Anterior ST-Elevation Myocardial Infarction

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## **OBJECTIVE:**

To compare in-hospital and mid-term outcomes of single-stent and two-stents strategy in the management of bifurcation culprit lesions in patients presenting with anterior STEMI

## **METHODS:**

This retrospective multi-center study included all consecutive patients presented with anterior STEMI who underwent primary PCI between January 2017 and December 2019, coronary angiography showed true bifurcation lesion with sizable side branch that can be managed by stenting. Patients with left main bifurcation lesion, patients indicated for urgent CABG and patients in cardiogenic shock were excluded. Included patients were divided into two main groups according to the stenting strategy either single or two stents strategy. Six months of follow up data were collected by telephone calls and the examination of medical records

## **RESULTS:**

Out of 1355 anterior STEMI patients presented between January 2017 and December 2019, 158 patients (11.6%)

were identified to have bifurcation culprit lesions with a sizable diagonal branch. The baseline characteristics and angiographic findings were similar in both groups except for higher side branch involvement in the two stents group ( $83.31\pm 11.20$  and  $71.88\pm 15.05$ ,  $t = -5.39$ ,  $p < 0.001$ ). Mean fluoroscopy time ( $23.96 \pm 8.90$  vs.  $17.81 \pm 5.72$  min) and contrast volume ( $259.23 \pm 59.45$  vs.  $232.58 \pm 96.18$  ml) were significantly higher in two stents group than single stent group ( $p = 0.049$ ). However, the angiographic success rates (residual stenosis  $\leq 30\%$  and restoration of TIMI flow grade II or III) were comparable ( $96.8\%$  vs.  $99\%$ ,  $MCp = 0.151$ ). There is no significant difference regarding the overall incidence rate of MACCE in both groups 6 months following the index procedure ( $13.9\%$  vs.  $16.9\%$ ,  $FEp = 0.698$ ), with no difference between different bifurcation stenting techniques in patients managed with two stents

## **CONCLUSION:**

Although two stents strategy in the setting of STEMI is much complex with more fluoroscopy time and contrast volume, the procedural success rate and the incidence of complications between two groups were comparable on the medium-term follow up

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