Abstract: P19

Mid-term results of coronary intervention with directional coronary atherectomy compared with conventional stenting for LMT related lesion - a single center experience.

Authors:
C Komiyama¹, T Kodama¹, ¹Toranomon Hospital, Cardiovascular Center - Tokyo - Japan,

Topic(s):
Coronary Artery Disease: Treatment, Revascularization

Citation:

Background: The technology of percutaneous coronary intervention (PCI) has dramatically advanced and now patients can get various treatment options for left main trunk (LMT) lesion. On the other hand, Directional Coronary Atherectomy (DCA) has appeared again on the stage of PCI as a technique of debulking plaques. Purpose of this study was to compare procedural and mid-term outcomes between DCA and conventional stenting for LMT related lesions.

Methods: We extracted cases treated with PCI for LMT related lesion and retrospectively examined backgrounds of patients, postprocedural events and whether dual antiplatelet therapy (DAPT) had been stopped or not. In order to rule out selection bias, conventional stenting cases were collected in the era prior to starting DCA treatment. In this study, we defined Major Adverse Cardiovascular Events (MACE) as cardiovascular death, restenosis in the target lesions and acute coronary syndrome (ACS).

Results: From April, 2014 to September, 2017, consecutive 85 patients underwent LMT stenting. Fifty-four patients enrolled in the non-DCA group excluding patients post CABG, treated with rotablator, with ACS and unexpected incidental LMT stenting. From May, 2016 to September, 2018, consecutive 26 cases underwent DCA (DCA group), in whom 15 cases were treated with the Drug Coating Balloon (DCB) subsequent DCA. The purposes of DCA were to avoid LMT stent or stent to other lesions and plaque reduction. In terms of patient’s characteristics, there was no significant difference in sex, BMI, coronary risk factors. Renal function was significantly better in DCA group than non-DCA group (eGFR 69.0 vs 59.5 ml/min/1.73m2; p=0.028), and the amount of contrast medium used (124 vs 94 ml; p=0.003) and duration of fluoroscopy time (47.7 vs 35.8 minutes; p=0.007) were significantly greater in the DCA group than non-DCA group. However, there was no significant difference in incidence of periprocedural complications (0 vs 7 cases, p=0.09), all cause of death (0 vs 8(14.8%); p=0.161(Log-Rank)) and MACE (2(7.7%) vs 11(20.1%); p=0.261(Log-Rank)) between the two groups. In addition, DAPT had been significantly stopped earlier in DCA group than non-DCA group (9(36%) vs 13(24.1%) cases; <0.0001(Log-Rank))(Figure).

Conclusions: LMT stenting has a high risk for the fatal event in case of in-stent-restenosis and it makes difficult to stop DAPT in any case even at other surgical treatments. The appropriate plaque debulking by DCA can avoid deploying stents in LMT, shorten stent length and shorten DAPT duration. Hence, DCA is very effective for patients ahead of other surgeries. Although the procedure with DCA needs more contrast medium and longer fluoroscopy time, DCA will be a good option for treatment in LMT related lesion for appropriate cases. New DCA might be useful and safe enough for treating LMT related lesion. DCB may also contribute to the improvement of outcomes in treatment with DCA.
Midterm results of coronary intervention with directional coronary atherectomy compared with conventional stenting for LMT related lesion - a single center experience.

Authors: C Komiyama, T Kodama

Topic(s): Coronary Artery Disease: Treatment, Revascularization

Background: The technology of percutaneous coronary intervention (PCI) has dramatically advanced and now patients can get various treatment options for left main trunk (LMT) lesion. On the other hand, Directional Coronary Atherectomy (DCA) has appeared again on the stage of PCI as a technique of debulking plaques. Purpose of this study was to compare procedural and midterm outcomes between DCA and conventional stenting for LMT related lesions.

Methods: We extracted cases treated with PCI for LMT related lesion and retrospectively examined backgrounds of patients, postprocedural events and whether dual antiplatelet therapy (DAPT) had been stopped or not. In order to rule out selection bias, conventional stenting cases were collected in the era prior to starting DCA treatment. In this study, we defined Major Adverse Cardiovascular Events (MACE) as cardiovascular death, restenosis in the target lesions and acute coronary syndrome (ACS).

Results: From April, 2014 to September, 2017, consecutive 85 patients underwent LMT stenting. Fifty-four patients enrolled in the non-DCA group excluding patients post CABG, treated with rotablator, with ACS and unexpected incidental LMT stenting. From May, 2016 to September, 2018, consecutive 26 cases underwent DCA (DCA group), in whom 15 cases were treated with the Drug Coating Balloon (DCB) subsequent DCA. The purposes of DCA were to avoid LMT stent or stent to other lesions and plaque reduction. In terms of patient’s characteristics, there was no significant difference in sex, BMI, coronary risk factors. Renal function was significantly better in DCA group than non-DCA group (eGFR 69.0 vs 59.5 ml/min/1.73m²; p=0.028), and the amount of contrast medium used (124 vs 94 ml; p=0.003) and duration of fluoroscopy time (47.7 vs 35.8 minutes; p=0.007) were significantly greater in the DCA group than non-DCA group. However, there was no significant difference in incidence of periprocedural complications (0 vs 7 cases, p=0.09), all cause of death (0 vs 8 (14.8%); p=0.161(Log-Rank)) and MACE (2 (7.7%) vs 11 (20.1%); p=0.261(Log-Rank)) between the two groups. In addition, DAPT had been significantly stopped earlier in DCA group than non-DCA group (9 (36%) vs 13 (24.1%) cases; <0.0001(Log-Rank))(Figure).

Conclusions: LMT stenting has a high risk for the fatal event in case of in-stent-restenosis and it makes difficult to stop DAPT in any case even at other surgical treatments. The appropriate plaque debulking by DCA can avoid deploying stents in LMT, shorten stent length and shorten DAPT duration. Hence, DCA is very effective for patients ahead of other surgeries. Although the procedure with DCA needs more contrast medium and longer fluoroscopy time, DCA will be a good option for treatment in LMT related lesion for appropriate cases. New DCA might be useful and safe enough for treating LMT related lesion. DCB may also contribute to the improvement of outcomes in treatment with DCA.