

## Does the use of scoring balloon prior to drug coated balloons improve clinical outcomes in de Novo coronary lesions?

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**Aims:** The use of scoring balloon prior to drug coated balloon has been proven to be effective in restenotic lesions. However, their effect in de novo lesions has not been tested. Logic tells that the use of scoring balloons should enhance the drug uptake into the vessel wall. In this study, we evaluated this concept of scoring balloon prior to DCB in de novo lesions and compared to those who were treated with a conventional approach (semi-compliant and/or non-compliant balloons).

**Methods and results:** We evaluated all de novo lesions treated with DCB between March 2018 and October 2020 at our centre. The results are reported as cardiac death, target vessel myocardial infarction (TVMI), target lesion revascularisation (TLR) and MACE (combination of cardiac death, target vessel MI and TLR).

During the study period 348 patients with de novo lesions were treated with DCB. Of those, 49 were predilated with scoring balloon prior to use of DCB

and the remaining 299 were predilated with non-scoring balloons (semi-compliant and/or non-compliant). The majority of the baseline characteristics had no statistically significant differences (table 1), with the exception of the mean diameter of the lesions were larger in the scoring balloon group than non-scoring balloon group:  $2.7 \pm 0.5$  vs.  $2.49 \pm 0.4$ ;  $p=0.003$  and mean length of lesions were longer in the non-scoring balloon group:  $26 \pm 8.8$  vs.  $23 \pm 7.7$ ;  $p=0.02$ . During the median follow-up of 660 days, clinical outcomes between the scoring and non-scoring balloons were; cardiac death: 0 vs. 8 (3%);  $p=0.5$ , TVMI: 2 (4%) vs. 8 (3%);  $p=0.9$ , TLR: 3 (6%) vs. 25 (8.4%);  $p=0.8$ , MACE: 4 (8%) vs. 34 (11%)  $p=0.7$

**Conclusion:** There were no differences in the clinical outcomes between the two groups indicating that use of scoring balloon prior to DCB may not offer additional benefit, although this needs to be confirmed in a larger patient group.

**Table 1: Demographics and Procedural Characteristics**

Demographics and Procedural characteristics	Scoring balloon group (n=49)	Non-scoring balloon group (n=299)	P=
Age (mean $\pm$ SD)	65.8 $\pm$ 10.5	65.4 $\pm$ 11.4	0.8
Male (%)	41 (84%)	232 (78%)	0.4
Hypertension	36 (73%)	219 (73%)	0.9
Diabetes mellitus (%)	16 (33%)	115 (38.5%)	0.5
CKD	8 (16%)	50 (17%)	0.9
Acute coronary syndrome (%)	27 (55%)	128 (43%)	0.1
Diameter of DCB	2.7 $\pm$ 0.5	2.49 $\pm$ 0.43	0.003
Length of DCB	23 $\pm$ 7.7	26 $\pm$ 8.8	0.02