Comparison of Drug-Coated Balloons and the Bioadaptor in Treatment of De Novo Coronary Lesions

A 2-Year Nationwide Analysis from SCAAR

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Disclosure of Relevant Financial Relationships

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Introduction

- **Background**: Drug-coated balloons (DCB) and the bioadaptor aim at re-establishing vascular homeostasis by allowing positive remodeling

- **Knowledge gap**: Head-to-head studies are lacking and the efficacy of DCB compared with the bioadaptor remains unknown for de novo coronary lesions

- **Objective**: The aim of this study is to compare the 2-year clinical outcome of DCB versus the bioadaptor

Methods: SCAAR

- **Dataset**: Swedish Coronary Angiography and Angioplasty Registry (SCAAR)
- **Population**: All patients undergoing PCI in Sweden are captured in this nationwide registry
- **Study design**: Cohort study with patients treated with DCB or the bioadaptor with near complete follow-up of all patients

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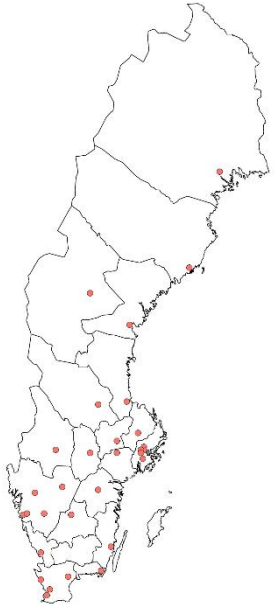
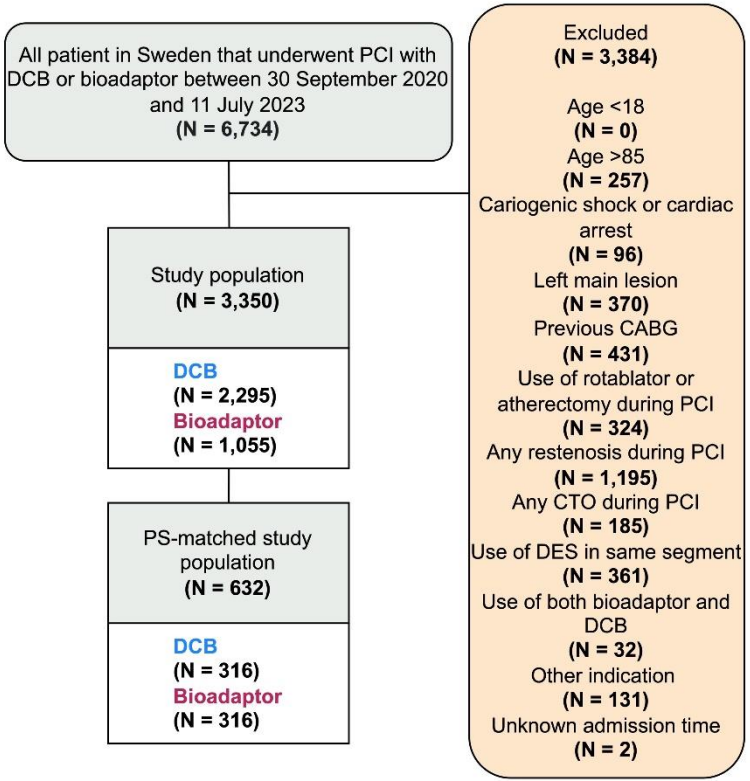


Methods: Current study

- **Study period**: 30/Sep/2020–11/Jul/2023
- **Primary composite outcome**: Target segment revascularization (TSR), target vessel myocardial infarction (TV-MI), and all-cause mortality
- **Statistics**: Propensity score (PS) matching, Kaplan-Meier estimates and Cox regression through 2 years



Patient characteristics after PS-Matching

- Overall similar patient characteristics
- More than 70% ACS

Median (IQR) or %	DCB N=316	Bioadaptor N=316
Age	67.3 (10.8)	68.8 (9.2)
Female	25.3	26.6
Hyperlipidemia	56.6	54.4
Hypertension	65.8	68.7
Previous MI	21.8	23.4
Previous PCI	28.8	28.5
ACS	74.6	74.6
Multi-vessel disease	31.9	36.7

Device/Lesion Characteristics After PS-Matching

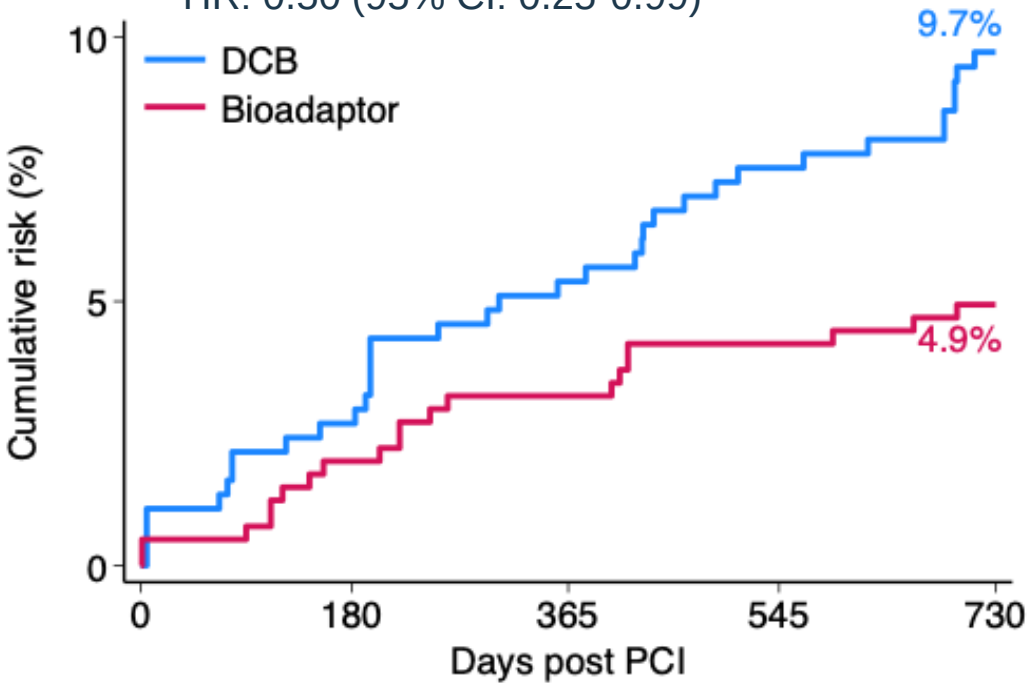
- Most common lesion location was LAD for both groups

Mead (SD) or %	DCB N=372	Bioadaptor N=405
Use of intravascular imaging	7.5	9.6
Use of FFR/IFR	22.8	20.2
Device length (< 20 mm)	40.6	51.9
Device diameter (< 3.0 mm)	52.4	55.6
Acute total occlusion	9.7	12.8
B2/C lesion	41.4	38.0
Lesion location (LAD)	50.8	42.7

Primary Composite Outcome

TSR, TV-MI or all-cause mortality

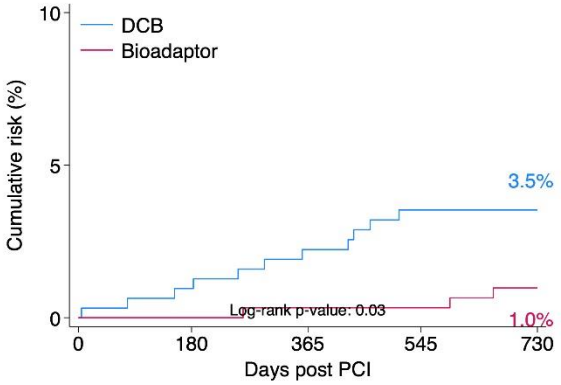
HR: 0.50 (95% CI: 0.25-0.99)



Components of the Primary Outcome

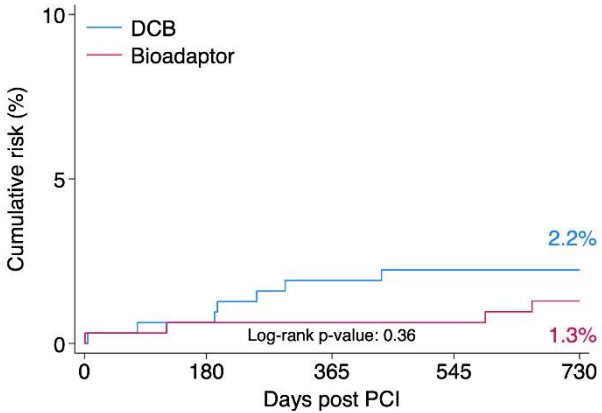
TSR

HR: 0.20 (95% CI: 0.06-0.64)



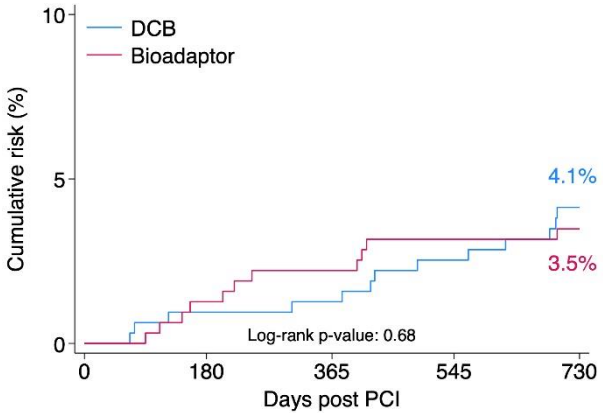
TV-MI

HR: 0.30 (95% CI: 0.08-1.16)



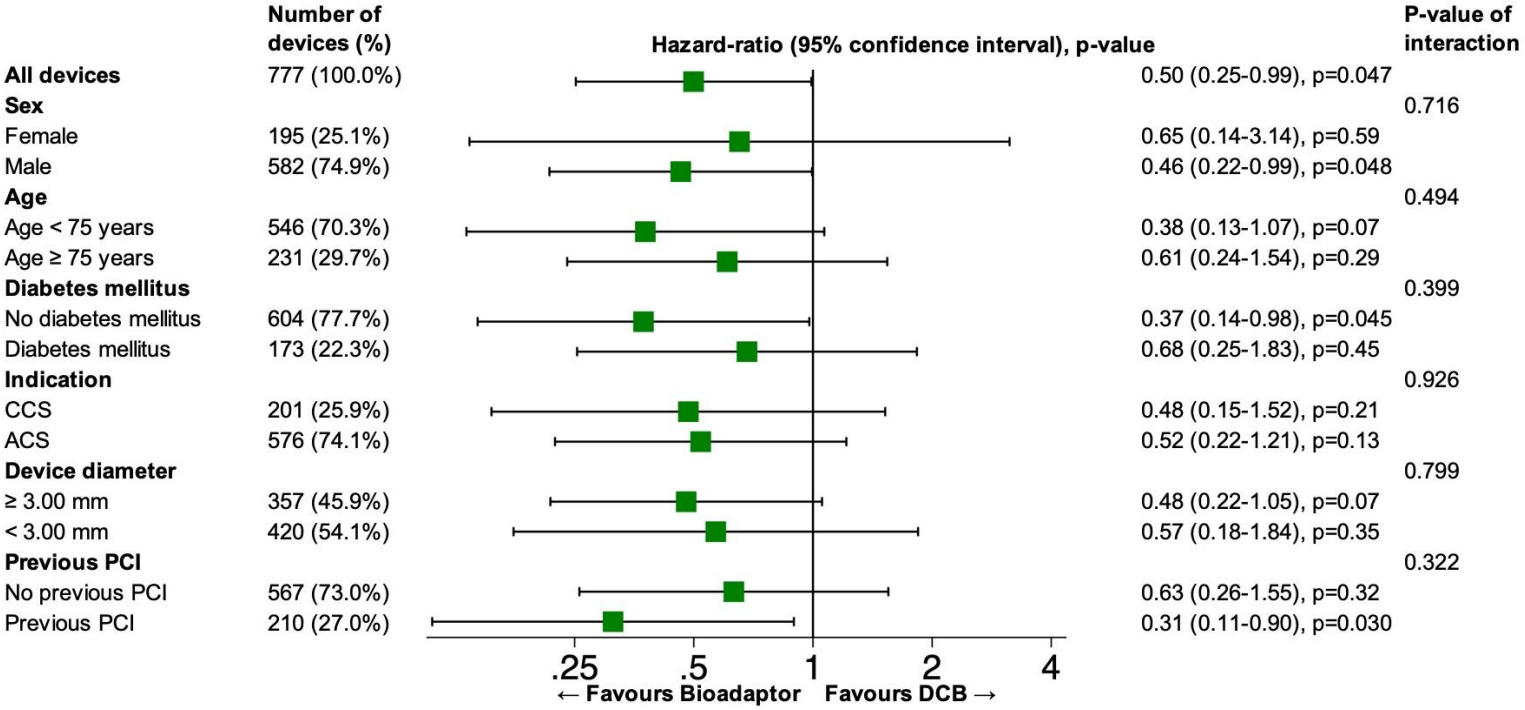
All-cause mortality

HR: 0.85 (95% CI: 0.38-1.89)



Subgroup analysis

- No significant treatment-by-subgroup interaction



Conclusion

- This nationwide PS-matched analysis is, to our knowledge, the first direct comparison of DCB and the bioadaptor.
- In this study, the bioadaptor was associated with a better 2-year outcome compared to DCB.
- This study provides valuable real-world data addressing an important knowledge gap in PCI techniques.