ASSOCIATION BETWEEN THE PRESENCE AND EXTENT OF CORONARY LIPID CORE PLAQUES DETECTED BY NEAR-INFRARED SPECTROSCOPY WITH POST PERCUTANEOUS CORONARY INTERVENTION MYOCARDIAL INFARCTION

i2 Oral Contributions
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Background: Post percutaneous coronary intervention (PCI) myocardial infarction (MI) has been associated with the treatment of lipid core plaques (LCPs) as detected by near-infrared spectroscopy (NIRS), potentially due to distal plaque embolization.

Methods: NIRS was performed in the native coronary arteries of 30 patients before PCI. The angular extent of the LCP, the lesion segment lipid core burden index (LCBI), and the number of two-millimeter segments characterized by a yellow block were evaluated. Cardiac biomarkers were measured before and 16-24 hours after PCI to determine the occurrence of post procedural MI.

Results: The mean number of yellow blocks within the stented lesion was 1.4 ± 2.1 and the mean lesion LCBI was 110.3 ± 99. Using a definition of CK-MB >1x ULN, 2x ULN, and 3x ULN, a post PCI MI occurred in 23%, 13%, and 10% of patients, respectively. Compared to patients who did not have a post PCI MI, those who did had similar clinical characteristics but received more stents and had more yellow blocks within the stented lesion. CK-MB elevation >3x ULN was observed in 27% of patients with at least one yellow block vs. 0% of patients without a yellow block within the stented lesion (p=0.02) (Figure 1).

Conclusions: PCI of LCP positive lesions, as assessed by NIRS, is associated with increased risk for post PCI MI. NIRS may allow pre PCI lesion-specific risk stratification and optimization of PCI strategies for myocardial injury risk minimization.

![CK-MB > 3x ULN](image)

Figure 1. Incidence of post procedural myocardial infarction defined by CK-MB elevation >3x upper limit of normal (ULN) in study patients, classified according to their baseline near-infrared spectroscopy measurements. LCP, lipid core plaque.