

# UCLA

## UCLA Previously Published Works

### Title

LOWER PLAQUE LIPID CONTENT ON NEAR-INFRARED SPECTROSCOPY IN STATIN-TREATED PATIENTS: INSIGHTS FROM THE COLOR REGISTRY

### Permalink

<https://escholarship.org/uc/item/5957895c>

### Journal

Journal of the American College of Cardiology, 67(13)

### ISSN

0735-1097

### Authors

Nicholls, Stephen J

Andrews, Jordan

Janssan, Alex

et al.

### Publication Date

2016-04-01

### DOI

10.1016/s0735-1097(16)31965-9

### Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed



## Prevention

### LOWER PLAQUE LIPID CONTENT ON NEAR-INFRARED SPECTROSCOPY IN STATIN-TREATED PATIENTS: INSIGHTS FROM THE COLOR REGISTRY

Poster Contributions  
Poster Area, South Hall A1  
Sunday, April 03, 2016, 9:45 a.m.-10:30 a.m.

Session Title: Contemporary Issues in Preventive Cardiology II  
Abstract Category: 33. Prevention: Clinical  
Presentation Number: 1191-390

Authors: *Stephen J. Nicholls, Jordan Andrews, Alex Janssan, Akiko Maehara, Mitsuaki Matsumura, Myong Hwa Yamamoto, Annapoorna Kini, Jonathan Tobis, Simon Dixon, Priti Shah, Gregg Stone, James Muller, Gary Mintz, Giora Weisz, South Australian Health and Medical Research Institute, Adelaide, Australia, CRF, New York, NY, USA*

**Background:** While statins have been demonstrated to slow the progression of coronary atherosclerosis, their impact on plaque composition is not well characterized.

**Methods:** Intracoronary near-infrared spectroscopy (NIRS) was utilized to identify lipid-rich plaque (LRP) in the lesions of patients undergoing PCI. NIRS findings are expressed as the lipid core burden index (LCBI) over the entire lesion and the highest LCBI in any 4-mm segment (maxLCBI<sub>4mm</sub>). The combined NIRS-IVUS catheter also provided IVUS data on plaque burden. LRP presence and plaque burden were compared in patients receiving (n=596) or not receiving (n=195) a statin at the time of PCI.

**Results:** Statin-treated patients were more likely to have a history of dyslipidemia (98% vs 72%, p<0.001), hypertension (93% vs 80%, p<0.001), diabetes (40% vs 29%, p=0.01) prior myocardial infarction (33% vs 13%, p<0.001), prior PCI (54% vs 26%, p<0.001) and bypass grafting (11% vs 4%, p<0.001) and had a lower LDL-C (78.8±33.1 vs 109.6±39.3 mg/dL, P<0.0001). Statin treatment was associated with a lower LCBI and maxLCBI<sub>4mm</sub> within intervened lesions and lower plaque and LRP burden at the site of maximum lipid. (Table)

**Conclusions:** Statin treatment is associated with decreased NIRS evidence of LRP in culprit lesions undergoing PCI. This observation provides further mechanistic insights into the processes underlying the cardioprotective properties of statins.

Table

Parameters (median)	Statin Use	No Statin Use	P Value
Lesion length (mm)	24.0 (17.7, 32.0)	24.0 (18.1, 31.4)	0.52
Plaque burden at minimum lumen area (%)	75.3 (67.3, 81.8)	77.2 (70.3, 84.5)	0.06
LRP burden at minimum lumen area (%)	20.6 (0, 42.6)	28.4 (0, 46.2)	0.25
Plaque burden at maximum lipid site (%)	66.9 (57.5, 75.3)	71.2 (61.9, 80.2)	0.008
LRP burden at maximum lipid site (%)	32.1 (20.0, 47.9)	37.3 (26.2, 55.8)	0.01
Average lesion LCBI	94.1 (31.9, 173.2)	128.1 (58.1, 222.3)	0.0003
Lesion maxLCBI <sub>4mm</sub>	291.5 (115.8, 474.7)	369.4 (180.7, 593.5)	0.0005