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Authors

Al'Aref, Subhi J
Su, Amanda
Gransar, Heidi
et al.

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A cross-sectional survey of coronary plaque composition in individuals on non-statin lipid lowering drug therapies and undergoing coronary computed tomography angiography

Subhi J. Al'Aref [a], Amanda Su [a], Heidi Gransar [c], Alexander R. van Rosendael [a], Asim Rizvi [a, b], Daniel S. Berman [c], Tracy Q. Callister [d], Augustin DeLago [e], Martin Hadamitzky [f], Joerg Hausleiter [g], Mouaz H. Al-Mallah [h], Matthew J. Budoff [i], Philipp A. Kaufmann [j], Gilbert L. Raff [k], Kavitha Chinnaiyan [k], Filippo Cademartiri [l], Erica Maffei [m], Todd C. Villines [n] … Fay Y. Lin [a]

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Abstract

Introduction

Non-statin therapy (NST) is used as second-line treatment when statin monotherapy is inadequate or poorly tolerated.

Objective

To determine the association of NST with plaque composition, alone or in combination with statins, in patients undergoing coronary computed tomography angiography (coronary CTA).

Methods

From the multicenter CONFIRM registry, we analyzed individuals who underwent coronary CTA with known lipid-lowering therapy status and without prior coronary artery disease at baseline. We created a propensity score for being on NST, followed by stepwise multivariate linear regression, adjusting for the propensity score as well as risk factors, to determine the association

between NST and the number of coronary artery segments with each plaque type (non-calcified (NCP), partially calcified (PCP) or calcified (CP)) and segment stenosis score (SSS).

Results

Of the 27,125 subjects in CONFIRM, 4,945 met the inclusion criteria; 371 (7.5%) took NST. At baseline, patients on NST had more prevalent risk factors and were more likely to be on concomitant cardiac medications. After multivariate and propensity score adjustment, NST was not associated with plaque composition: NCP (0.07 increase, 95% CI: –0.05, 0.20; p = 0.26), PCP (0.10 increase, 95% CI: –0.10, 0.31; p = 0.33), CP (0.18 increase, 95% CI: –0.10, 0.46; p = 0.21) or SSS (0.45 increase, 95% CI: –0.02,0.93; p = 0.06). The absence of an effect of NST on plaque type was not modified by statin use (p for interaction > 0.05 for all).

Conclusion

In this cross-sectional study, non-statin therapy was not associated with differences in plaque composition as assessed by coronary CTA.

Keywords

Coronary computed tomography angiography; Coronary plaque composition; Non-statin therapy; Ezetimibe; Fibrate; Niacin

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