## Imaging

# EFFECT OF STATIN TREATMENT ON CORONARY PLAQUE PROGRESSION: A SERIAL CT ANGIOGRAPHY STUDY

Oral Contributions
West, Room 3010
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Authors: Irfan Zeb, Dong Li, Jennifer Malpeso, Khurram Nasir, Christopher Dailing, Ferdinand Flores, Matthew Budoff, Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center, Torrance, CA, USA

**Background:** Statins have been shown to reduce plaque progression using data on intravascular ultrasound, carotid intimal-media thickness and coronary artery calcium scans. However, there is little data on effects of statins in regard to plaque progression using cardiac computed tomographic angiography (CCTA). In this study, we evaluated effect of statin therapy on plaque progression using serial CCTA scans.

**Methods:** The study included 100 consecutive patients (30% female, mean age 66 ±10 years) who underwent serial CCTA (average follow up duration: 406 +/- 92 days) at our institution for evaluation of CAD without known prior heart disease or revascularization. Information related to risk factors, dietary and risk factor interventions and statin use was obtained. We performed volumetric assessment of fatty (low attenuation plaque <30 Hounsfield units), fibro-fatty and calcified plaque volumes at baseline and follow up scans for vessels >2mm in diameter.

**Results:** The study included 70% Caucasians, 7% smokers, 66% hyperlipidemia, 59% HTN and 17% DM patients. There was significant reduction of fatty and fibro-fatty plaque volumes among statin users (p<0.001) (table 1). There was no significant change in calcified plaque in statin users vs. non-statin users (p=0.245). These associations remained significant after adjustment for risk factors.

**Conclusion:** Statin therapy resulted in significantly lower progression of fatty and fibro-fatty plaque components compared to placebo over 12 months duration.

| Plaque Type | Statins use status | No. of patients | Plaque volumes change | Adjusted Results from regression | | |
|---|---|---|---|---|---|---|
| | | | | β (SE) | 95% CI | P-value |
| Fatty | No | 40 | 5.9±23.1 | 0 (Ref) | | |
| | Yes | 60 | -12.2±19.2 | -18.1(4.2) | -26.4,-9.8 | <0.001 |
| Fibro-fatty | No | 40 | 13.8±76.6 | 0 (Ref) | | |
| | Yes | 60 | -47.7±71.9 | -101.7(30.8) | -162.1,-41.4 | <0.001 |
| Calcified | No | 40 | 10.0±53.2 | 0 (Ref) | | |
| | Yes | 60 | 29.3±67.9 | 41.5 (35.7) | -28.5,111.4 | 0.245 |