

CLINICAL VIGNETTE

Statin Avoidance and Primary Prevention of CAD

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A 62-year-old male with hypertension and elevated A1C presented to establish primary care. His hypertension is well controlled on amlodipine-benazepril 5-10 mg daily. He is physically active, including heavy gardening with no symptoms during exertion. He had been told his cholesterol was “a little high”, and was started on a statin but developed myalgias and was advised to stop. His mother had a heart attack at age 90.

Physical Exam revealed blood pressure of 131/84, weight 206 pounds (94 kg), height 5’7” with BMI of 32. There were no significant abnormalities on a comprehensive physical exam. ECG showed T wave flattening in the lateral precordial leads, but was otherwise normal.

Initial lab tests included A1C of 6.4%, Cholesterol Total 216 with 10-year CV risk of 12.7%.

At follow up 10 months later, he had lost 26 pounds with improved office blood pressure of 117/74. Repeat labs included: A1C 6.0, Cholesterol 212, HDL 42 and LDL 142. His 10-year cardiac risk remained at 12.7% and his highly sensitive C reactive protein was also elevated. Because of ongoing reluctance to restart statin a coronary calcium scan was obtained.

The scan found coronary artery calcification in 3 vessels with a total CAC score of 631.3. The calcium score for each vessel is as follows: Left main = 0, Left anterior descending = 388.8, Circumflex = 186, and Right coronary artery = 56.5.

Total CAC score of 631.3 adjusted for age and gender fell within the 75th and 90th percentile.

Exercise Treadmill Test

Predicted Heart Rate: 100%; 157. 85%; 133
Resting Heart Rate: 70 bpm
Resting Blood Pressure: 120/80 mmHg.
Peak Blood Pressure: 190/80 mmHg.

Exercise stress test was positive with abnormal ST depression during Stage 2 in II, III, AVF, and V3-6 with hypotensive response, but without symptoms which terminated the study.

He was referred to cardiology and underwent cardiac catheterization. The significant finding included a large dominant RCA with 80-90% mid stenosis with sequential 99% subtotal lesion, as well as diffuse disease. Intravascular ultrasound documented

diffuse fibrocalcific plaque throughout the mRCA with 99% mid stenosis. He underwent PTCA with stent placement and tolerated the procedure well, is functionally active and continues to be followed.

Discussion

The initial PCP included discussion of evaluated ASCVD risk, the implications for that risk, and what could be done to mitigate that risk. His initial ASCVD score,¹ was 12.9% in the intermediate risk range. A calculated risk greater than 7.5% has been used as a threshold to initiate statin therapy,²⁻⁴ although there is some disagreement.⁵⁻⁶ Despite clear and extensive discussion, some patients are reticent to fill a statin prescription, take the drug every day, or may simply break the tablet in half in an attempt to minimize the perceived risk of statin therapy. This patient’s reported prior statin intolerance,^{1,6} his perception of statin risk, and his lack of symptoms and exercise limitations heightened his reluctance to restart statin treatment. CT coronary artery calcium scan can be used as an objective tool to re-classify estimated cardiovascular risk.

The AHA/ACC, recommend coronary artery calcium scans in patients of intermediate risk (7.5-19.9%) to further characterize and stratify their individual risk. At this time the test is variably covered by health insurance.⁷

If the test shows a calcium score of zero, a statin can usually be safely avoided. If the calcium score is markedly elevated, the case for treatment is much stronger with better defined statin benefit for the patient. In cases where mild heart disease is seen, preventative statin treatment is recommended.

For this intermediate risk patient, CT coronary artery calcium score revealed asymptomatic severe artery disease that was amenable to intervention. Given the patient’s reluctance to accept primary prevention with a statin, the scan resulted in successful intervention and outcome. After angioplasty, he tolerated a high potency statin and has remained physically active. He also adopted a plant-based diet, has lost additional weight and reports an improved quality of life.

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