1

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Learners must participate in the full activity and complete the evaluation in order to claim continuing education credit/hours.

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Daniel Davidovich, MD– None

Disclosure of Relevant Financial Relationships and Mechanism to Identify and Mitigate Conflicts of Interest: No conflicts of interest

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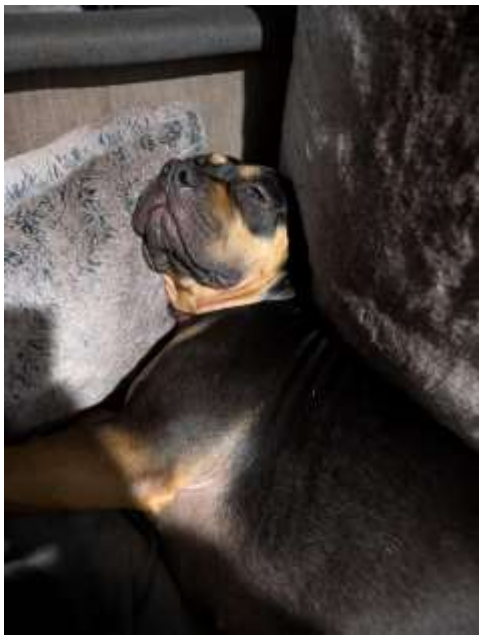
Off-label Use: NONE

2

STATISTICS

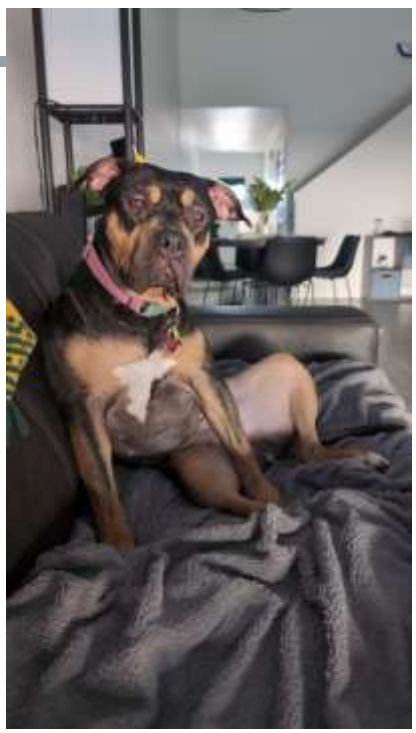
- Higher incidence of disease
- Greater extent of CAD
- Higher incidence of multi-vessel or severe disease
- More often asymptomatic
- Higher BG level, higher incidence of CAD
- More myocardial infarctions



3

WHY?

- Endothelial dysfunction (can be acute, is reversible)
- Increased thrombosis (platelet aggregation and activation, coag abnormalities)
- Plaque characteristics (type 1 vs type 2)



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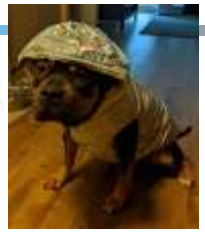

> Lab Invest. 1968 May;18(5):538-51.

Atherosclerosis in persons with hypertension and diabetes mellitus

W B Robertson, J P Strong

PMID: 4234572

Predictors of Early Morbidity and Mortality After Thrombolytic Therapy of Acute Myocardial Infarction

Analyses of Patient Subgroups in the Thrombolysis in Myocardial Infarction (TIMI) Trial, Phase II

Outcome of Patients With Diabetes Mellitus and Acute Myocardial Infarction Treated With Thrombolytic Agents

Quantitative Comparison of Angiographic Characteristics of Coronary Artery Disease in Patients With Noninsulin-Dependent Diabetes Mellitus Compared With Matched Nondiabetic Control Subjects

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FULL LENGTH ARTICLE

Download Full Issue

Status of the coronary arteries at necropsy in diabetes mellitus with onset after age 30 years

Analysis of 229 diabetic patients with and without clinicalevidence of coronary heart disease and comparison to 183 control subjects

5

SHOULD WE SCREEN?

Sensitivity and specificity of various noninvasive tests to diagnose the presence of coronary heart disease

	Diagnosis of coronary artery disease	
	Sensitivity (%)	Specificity (%)
Exercise ECG	45 to 61	70 to 90
Exercise stress echocardiography	70 to 85	77 to 86
Exercise stress SPECT	73 to 92	63 to 88
Pharmacologic stress echocardiography	72 to 99	79 to 95
Pharmacologic stress SPECT	88 to 91	75 to 90
Coronary CTA	95 to 99	64 to 90

CTA: computed tomography angiography; ECG: electrocardiogram; SPECT: single-photon emission computed tomography.

6

CALCIUM SCORING?

Value of Coronary Artery Calcium Scanning by Computed Tomography for Predicting Coronary Heart Disease in Diabetic Subjects

Screening of asymptomatic patients with type 2 diabetes mellitus for silent coronary artery disease: combined use of stress myocardial perfusion imaging and coronary calcium scoring

Coronary Calcium Score and Prediction of All-Cause Mortality in Diabetes

The Diabetes Heart Study

Circulation: Cardiovascular Imaging

CORONARY ARTERY DISEASE

Absence of Coronary Artery Calcium Identifies Asymptomatic Diabetic Individuals at Low Near-Term But Not Long-Term Risk of Mortality

A 10-Year Follow-Up Study of 9715 Patients

7

8

MEDICATIONS

- Daily low dose ASA
- Statins
- Other lipid lowering agents
- SGLT2 inhibitor
- GLP-1 Receptor agonist
- Metformin

9

Effects of Aspirin for Primary Prevention in Persons with Diabetes Mellitus

Journal of the American Heart Association

Aspirin Use and Cardiovascular Outcome in Patients With Type 2 Diabetes Mellitus and Heart Failure: A Population-Based Cohort Study

4.0. Aspirin Use

Recommendations for Aspirin Use

COR	LOE	Recommendations
IIb	A	1. Low-dose aspirin (75-100 mg orally daily) might be considered for the primary prevention of ASCVD among select adults 40 to 70 years of age who are at higher ASCVD risk but not at increased bleeding risk.
[illegible]	B-R	2. Low-dose aspirin (75-100 mg orally daily) should not be administered on a routine basis for the primary prevention of ASCVD among adults >70 years of age.
III: Harm	C-LD	3. Low-dose aspirin (75-100 mg orally daily) should not be administered for the primary prevention of ASCVD among adults of any age who are at increased risk of bleeding.

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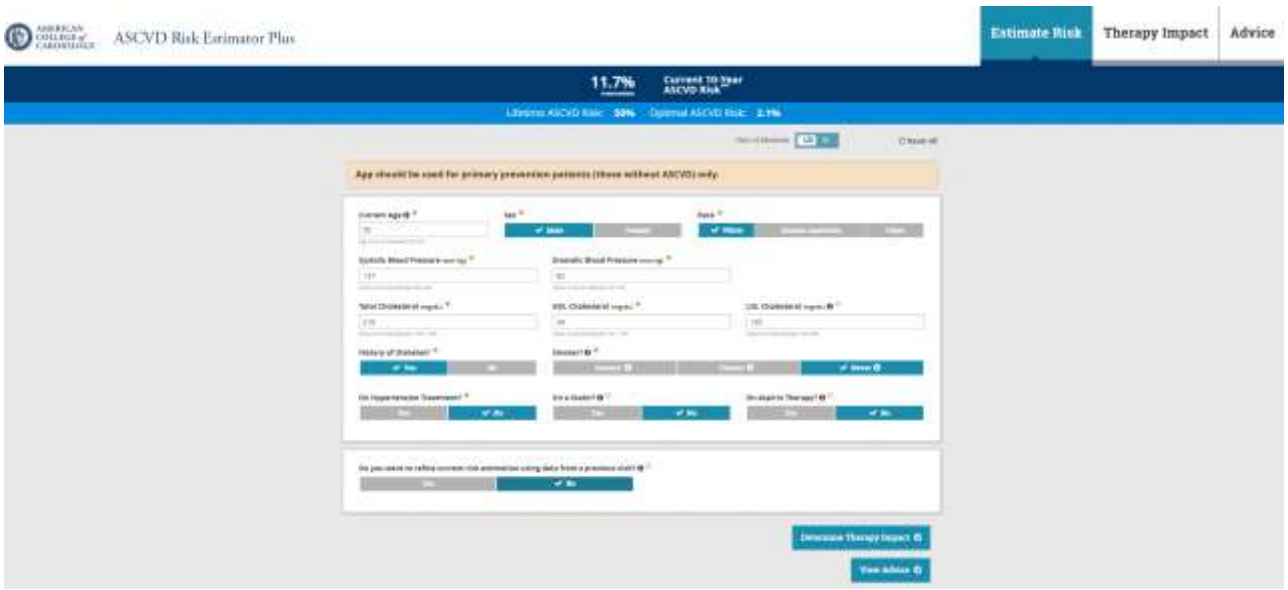
ASCVD Risk Estimator Plus
Estimate Risk
Therapy Impact
Advice
11.7%
Current 10-Year ASCVD Risk*
Lifetime ASCVD Risk: 50%
Optimal ASCVD Risk: 2.1%
App should be used for primary prevention patients (those without ASCVD) only.
Determine Therapy Impact
View Advice

11

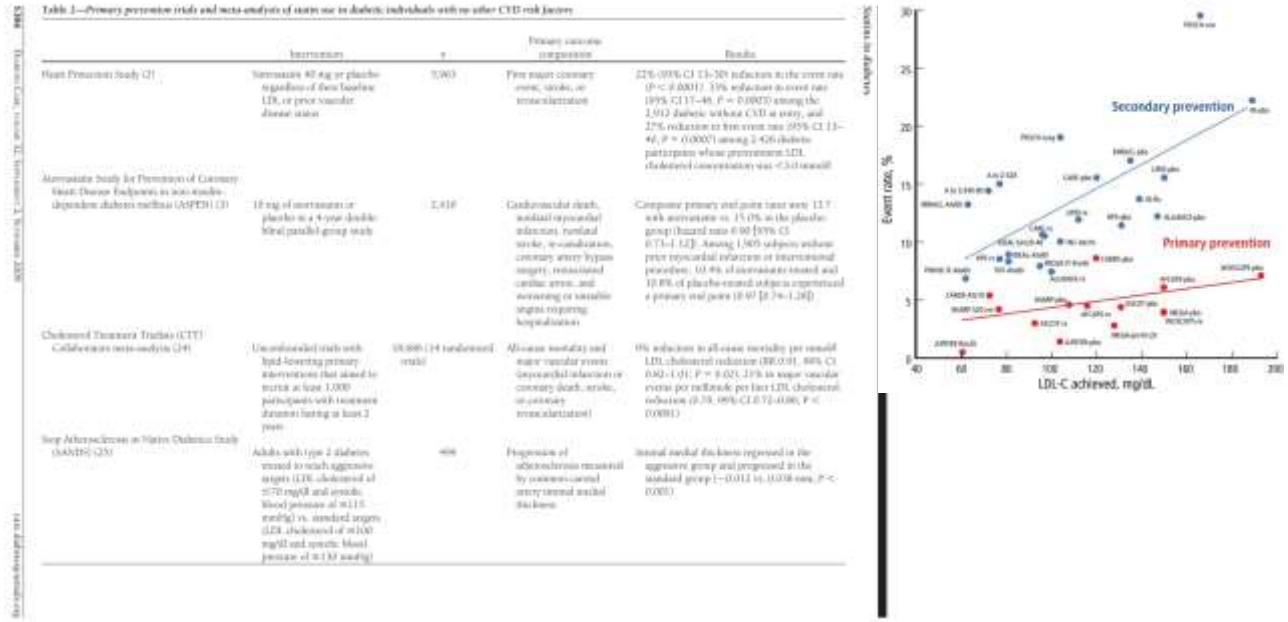
Table 3—Primary prevention trials and meta-analysis of statin use in diabetic individuals with no other CVD risk factors
Intervention
n
Primary outcome composites
Results
Heart Protection Study (2)
Simvastatin 40 mg or placebo regardless of their baseline LDL or prior vascular disease status
5,963
First major coronary event, stroke, or revascularization
22% (95% CI 13–30) reduction in the event rate (P < 0.0001). 33% reduction in event rate (95% CI 17–46, P = 0.0002) among the 3,933 diabetic without CVD at entry, and 27% reduction in first event rate (95% CI 13–40, P = 0.0007) among 2,426 diabetic participants whose pretreatment LDL cholesterol concentration was <3.0 mmol/l
Atorvastatin Study for Prevention of Coronary Heart Disease Endpoints in non-insulin-dependent diabetes mellitus (ASPEN) (3)
10 mg of atorvastatin or placebo in a 4-year double-blind parallel-group study
2,410
Cardiovascular death, nonfatal myocardial infarction, nonfatal stroke, re-resuscitation, coronary artery bypass surgery, noncoronary cardiac arrest, and worsening or unstable angina requiring hospitalization
Composite primary end point rate was 13.7 with atorvastatin vs. 15.0% in the placebo group (hazard ratio 0.90 [95% CI 0.73–1.12]). Among 1,985 subjects without prior myocardial infarction or interventional procedure, 10.4% of atorvastatin-treated and 10.8% of placebo-treated subjects experienced a primary end point (0.95 [0.74–1.24])
Cholesterol Treatment Trialists (CTT) Collaborators meta-analysis (24)
Unconfounded trials with lipid-lowering primary interventions that aimed to recruit at least 1,000 participants with treatment duration lasting at least 2 years
18,686 (14 randomized trials)
All-cause mortality and major vascular events (myocardial infarction or coronary death, stroke, or coronary revascularization)
9% reduction in all-cause mortality per mmol/l LDL cholesterol reduction (RR 0.91, 95% CI 0.82–1.01; P = 0.021; 21% in major vascular events per mmol/l LDL cholesterol reduction (0.79, 95% CI 0.72–0.86; P < 0.0001)
Stop Atherosclerosis in Native Diabetics Study (SANDS) (25)
Adults with type 2 diabetes treated to reach aggressive targets (LDL cholesterol of ≤70 mg/dl and systolic blood pressure of ≤115 mmHg) vs. standard targets (LDL cholesterol of ≤100 mg/dl and systolic blood pressure of ≤130 mmHg)
498
Progression of atherosclerosis measured by common carotid artery intimal medial thickness
Intimal medial thickness regressed in the aggressive group and progressed in the standard group (−0.012 vs. 0.038 mm, P < 0.001)
Secondary prevention
Primary prevention
Event rate, %
LDL-C achieved, mg/dL

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ORIGINAL ARTICLE

Semaglutide and Cardiovascular Outcomes in Patients with Type 2 Diabetes

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ORIGINAL ARTICLE

Canagliflozin and Cardiovascular and Renal Events in Type 2 Diabetes

ORIGINAL ARTICLE

Empagliflozin, Cardiovascular Outcomes, and Mortality in Type 2 Diabetes

The NEW ENGLAND JOURNAL of MEDICINE

Dapagliflozin in Patients with Heart Failure and Reduced Ejection Fraction

14

Effect of intensive blood-glucose control with metformin on complications in overweight patients with type 2 diabetes (UKPDS 34)

15

HOW ABOUT DIET AND EXERCISE?

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QUESTIONS?

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