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### Inappropriate statin therapy according to ASCVD risk: Can we do better?

Raef Fadel

*Henry Ford Health System, RFADEL2@hfhs.org*

Jasmine-Yasmine Omar

*Henry Ford Health System, jomar1@hfhs.org*

Guneet Ahluwalia

*Henry Ford Health System*

Shivani Sharma

*Henry Ford Health System, SSharma9@hfhs.org*

Ahmad Aljamal

*Henry Ford Health System, AAljama2@hfhs.org*

*See next page for additional authors*

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**Authors**

Raef Fadel, Jasmine-Yasmine Omar, Guneet Ahluwalia, Shivani Sharma, Ahmad Aljamal, and Courtney Hughes

# Inappropriate Statin Therapy According To ASCVD Risk: Can We Do Better?

Presenter: Raef Ali Fadel, DO

PI: Jasmine Omar, MD

Department of Internal Medicine - Henry Ford Hospital, Detroit, MI

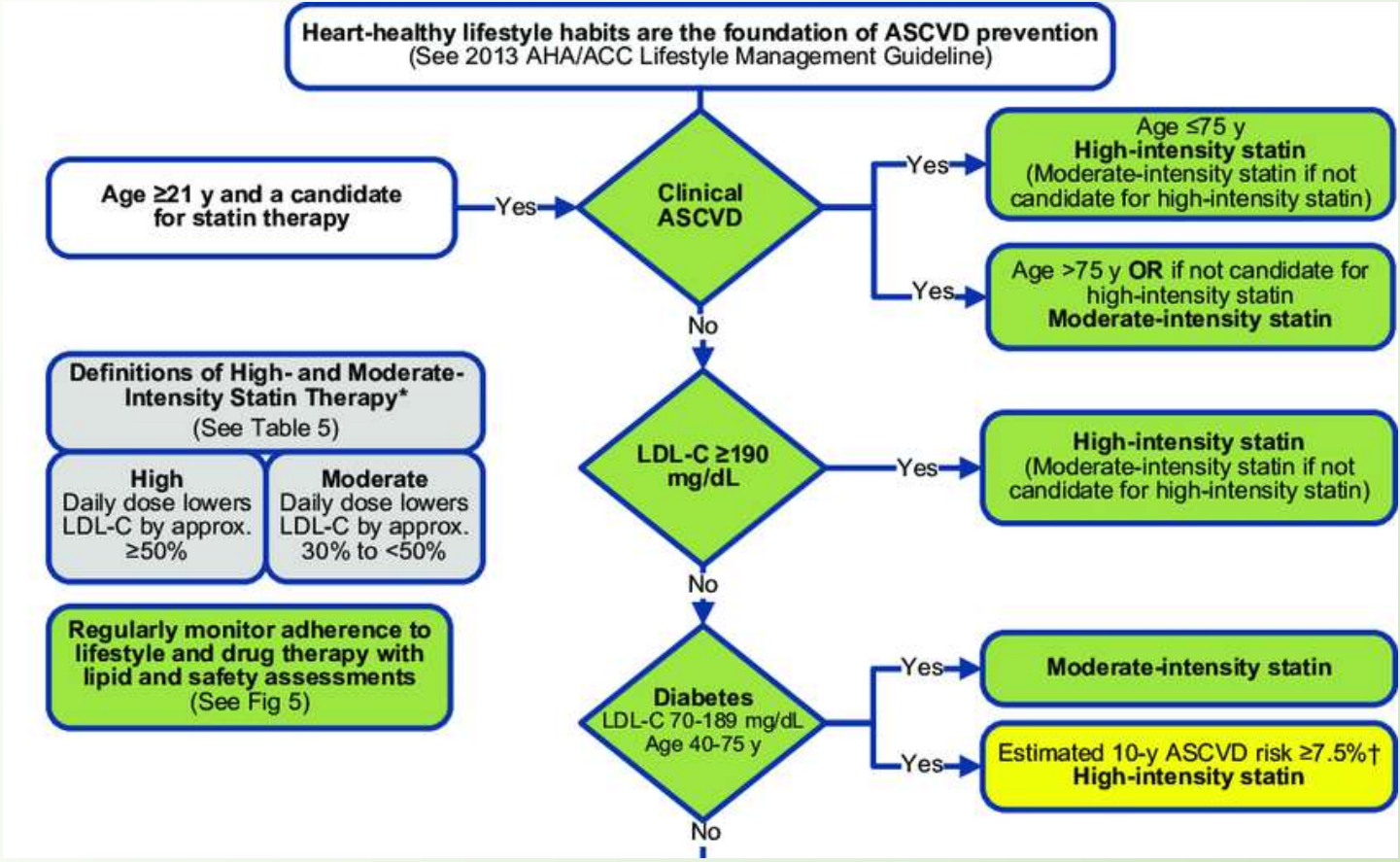
Investigators: Guneet Ahluwalia, Shivani Sharma, Omar Aljamal, Courtney Hughes

# Background

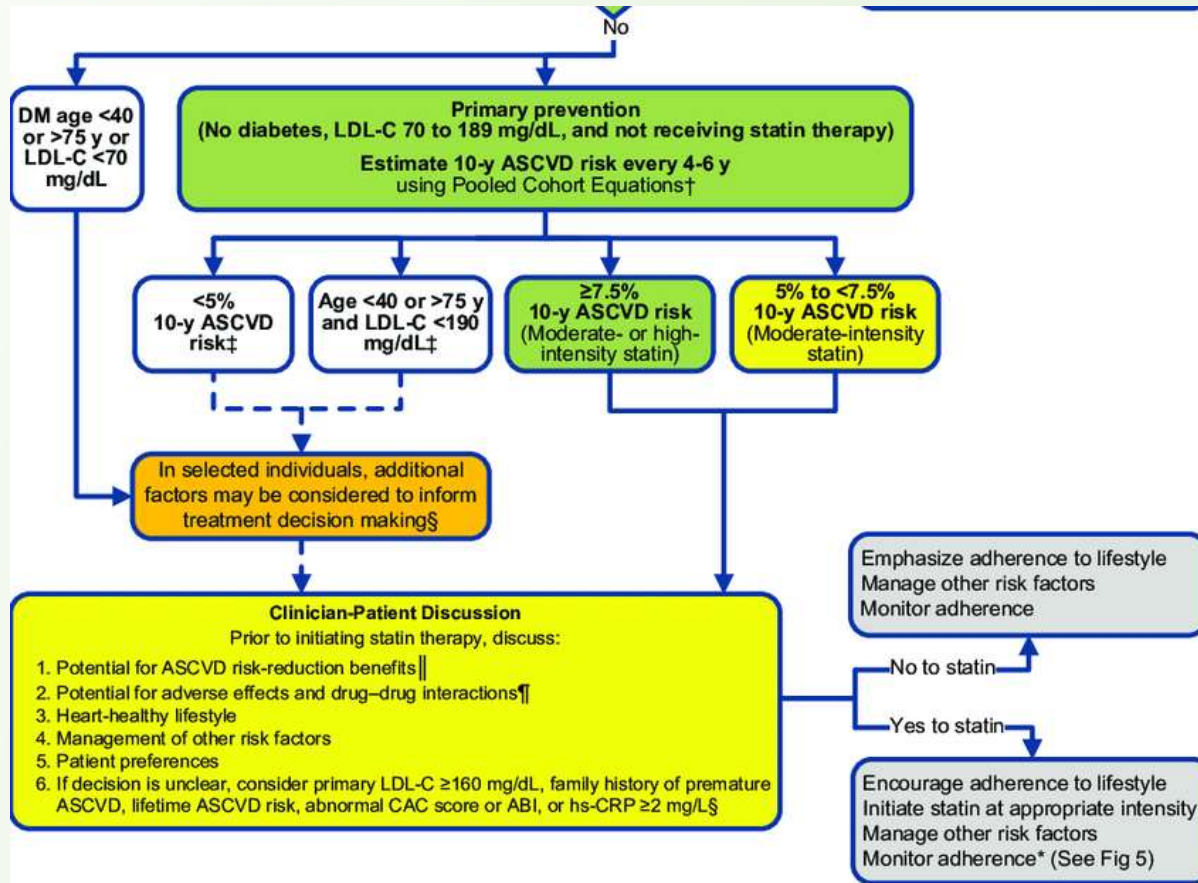
- Lipid lowering has been shown to be beneficial for primary and secondary prevention of coronary artery disease in patients with dyslipidemias
  - Statin mechanism of action: competitively inhibits HMG CoA reductase (rate limiting step in cholesterol biosynthesis)
- Administration of statin therapy guided primarily by risk of CVD
- Atherosclerotic cardiovascular disease (ASCVD) risk calculation for use only in adult patients without known ASCVD and LDL 70-189 mg/dL

2013 ACC/AHA Guideline on the Assessment of Cardiovascular Risk. doi: 10.1161/01.cir.0000437741.48606.98.

2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. doi: 10.1161/01.cir.0000437738.63853.7a.



Robinson G, Stone N. The 2013 ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular disease risk: a new paradigm supported by more evidence. European Heart Journal, 2015. 36, 2110–2118 doi:10.1093/eurheartj/ehv182.



# Study Design

- Empiric observational study
- Retrospective chart review of 2,994 patients for information including ASCVD risk determination and active statin prescription
  - Inclusion Criteria: Adult patients visiting the K15 Academic Internal Medicine Clinic of Henry Ford Hospital from January 2017- December 2017
- Primary objective: to assess appropriateness of statin therapy based on ASCVD risk calculation and ACC/AHA guidelines.
- Secondary objective: to assess correlation between patient demographic and appropriateness of statin therapy according to guidelines.
- Clinical implication: determine proper application of ASCVD guidelines and better improve patient outcomes in the outpatient setting

# Results

1,548 patients were prescribed inappropriate statin dose	p-value < 0.001
- 1,245 patients taking high-intensity statin did not qualify for one based on ASCVD risk	p-value < 0.001
Female patients 81.9% more likely to be on appropriate statin dose vs male patients	OR 1-1.819, 95% CI, 1.559-2.124
Black patients were 32.2% less likely to be on appropriate statin dose vs Caucasian patients	OR 1-0.678, 95% CI, 0.5320-0.864
Patients on appropriate statin dose have a higher family income on average	p-value = 0.020
- Every 10,000-unit increase in income, increases the odds of an appropriate statin dose by 2.4%	OR 1-1.024, 95% CI, 0.990-1.060
For every 1-unit increase in age, the odds of an appropriate statin dose decrease by 4.8%	OR 1-0.952, 95% CI, 0.04-0.056



# Limitations

- Varying demographics specific to location of Henry Ford Hospital
  - Socioeconomic status
  - Lack of access to healthcare and/or medical insight
- Internal validity:
  - Misclassified subgroup: appropriate statin dose misassigned to high
  - Stroke/TIA not considered in risk status determination
- Limitations inherent to observational study design
  - May represent older prescribing practices
  - Not fully reflective of current trends

# Looking ahead...

- Treatment according to AHA/ACC guidelines based on ASCVD risk calculation has well documented effect on morbidity and mortality
- Appropriate administration of statins by dose and intensity is a necessary intervention aimed at improving patient outcomes
- HF pilot program promoting pharmacist-driven initiation and dosing of statins
  - Improving adherence
  - Improving administration
  - Improving clinical outcomes
- Assessing clinical outcomes in sites with policies in place for initiation and administration of appropriate dose/intensity statin

Thank you!

Questions?

