

## Henry Ford Health System Henry Ford Health System Scholarly Commons

---

Health Care Disparities

Medical Education Research Forum 2019

---

5-2019

# 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*

Follow this and additional works at: <https://scholarlycommons.henryford.com/merf2019hcd>

---

### Recommended Citation

Fadel, Raef; Omar, Jasmine-Yasmine; Ahluwalia, Guneet; Sharma, Shivani; Aljamal, Ahmad; and Hughes, Courtney, "Inappropriate statin therapy according to ASCVD risk: Can we do better?" (2019). *Health Care Disparities*. 2.  
<https://scholarlycommons.henryford.com/merf2019hcd/2>

This Poster is brought to you for free and open access by the Medical Education Research Forum 2019 at Henry Ford Health System Scholarly Commons. It has been accepted for inclusion in Health Care Disparities by an authorized administrator of Henry Ford Health System Scholarly Commons. For more information, please contact [acabrer4@hfhs.org](mailto:acabrer4@hfhs.org).

---

**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

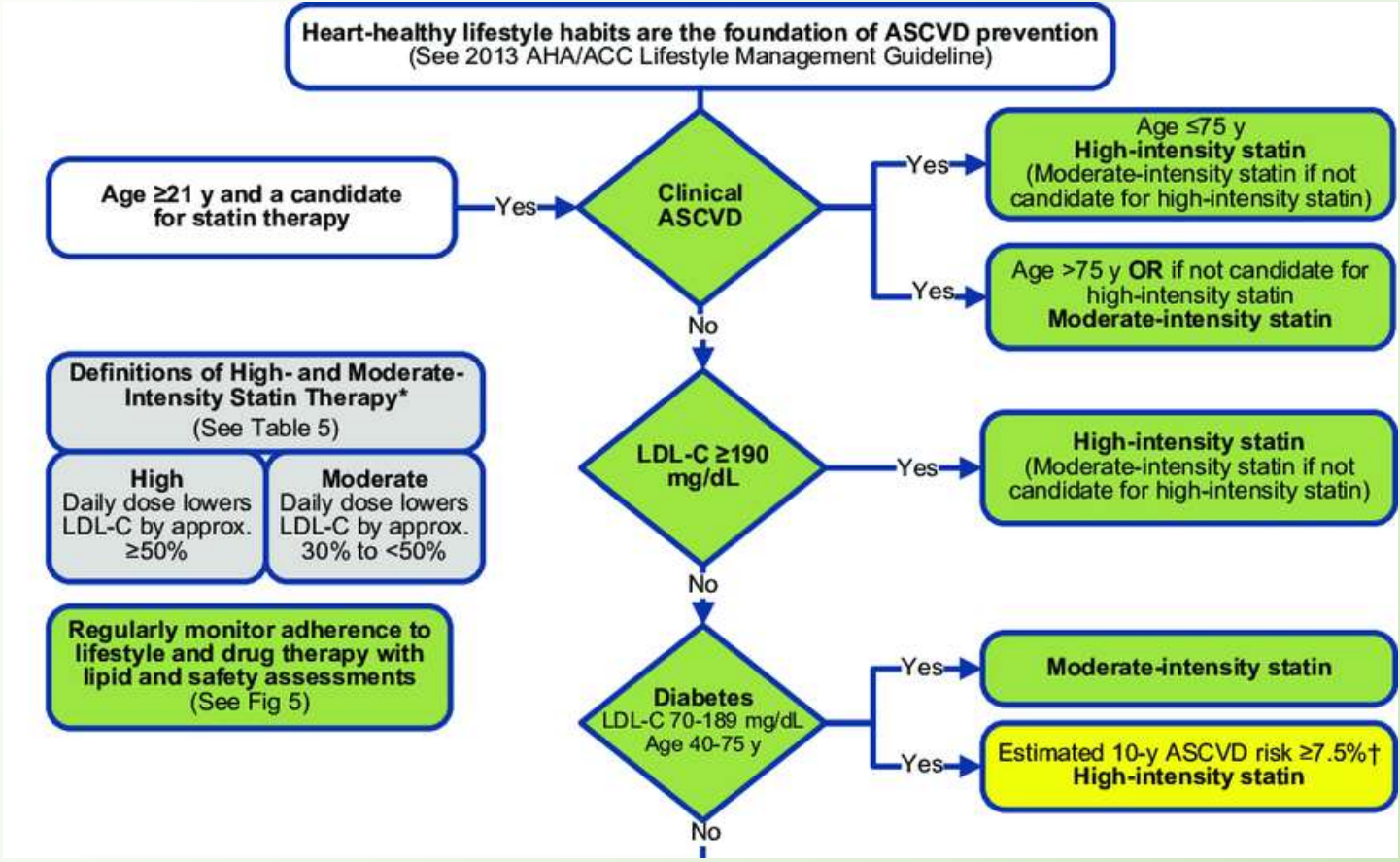
Investigators: Guneet Ahluwalia, Shivani Sharma, Omar Aljamal, Courtney Hughes

# Background

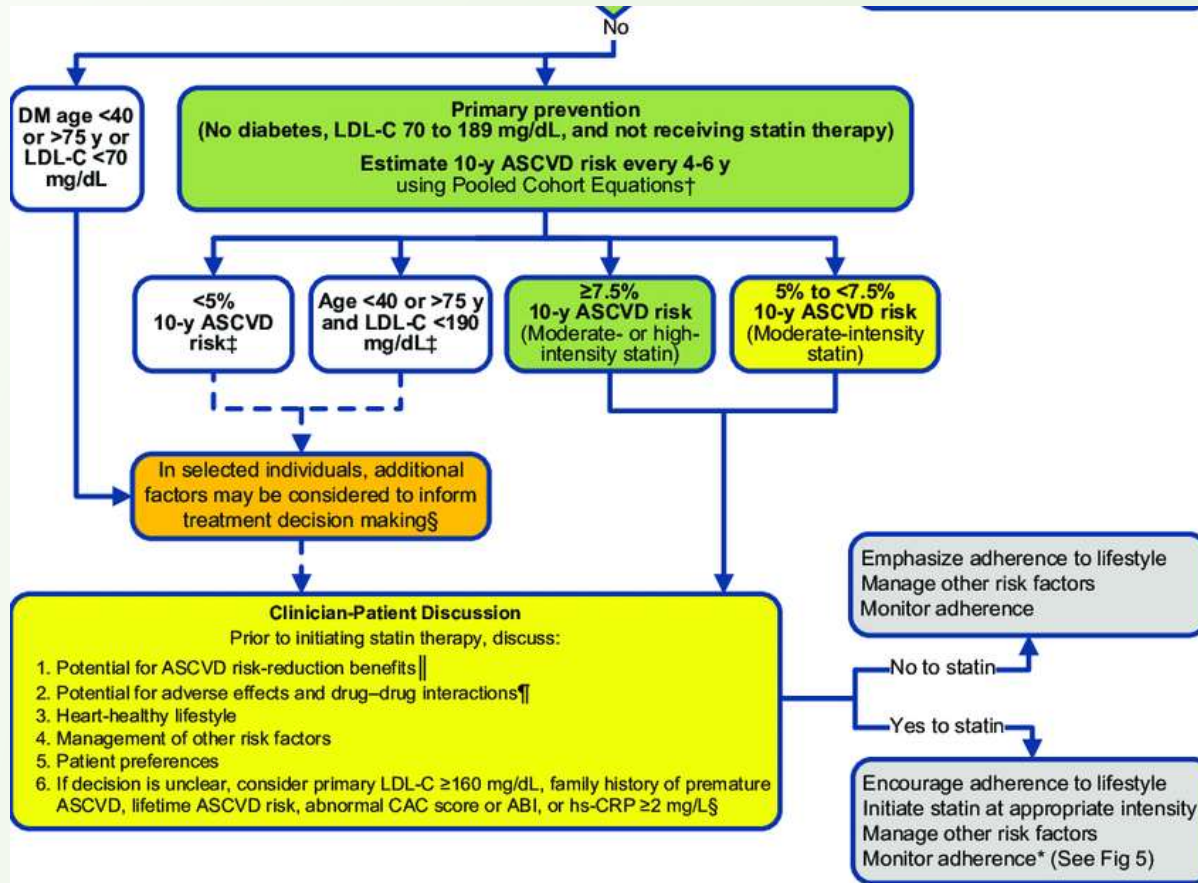
- Lipid lowering has been shown to be beneficial for primary and secondary prevention of coronary artery disease in patients with dyslipidemias
  - Statin mechanism of action: competitively inhibits HMG CoA reductase (rate limiting step in cholesterol biosynthesis)
- Administration of statin therapy 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?

