

Introduction

- ❖ According to the Center for Disease Control and Prevention, one in every four deaths in the United States is caused by heart disease¹. Atherosclerotic cardiovascular disease (ASCVD), which includes coronary heart disease, stroke, and peripheral arterial disease, is directly associated with elevated levels of low-density lipoprotein cholesterol (LDL-C)².
- ❖ The 2013 American College of Cardiology (ACC) and American Heart Association (AHA) guidelines for the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk identified four specific populations for which statin therapy would likely be beneficial².
- ❖ One of these groups includes adults of 40-75 years of age without clinical ASCVD but with type 1 or type 2 diabetes and LDL-C levels of 70 to 189 mg/dL².
- ❖ Moderate-intensity statin therapy is recommended for all of these patients, and those with an estimated 10-year ASCVD risk score of 7.5% or greater are recommended high-intensity statin therapy². The 10-year ASCVD risk is defined as the first occurrence of a nonfatal and fatal myocardial infarction or a nonfatal and fatal stroke².
- ❖ The ACC/AHA guidelines state that there is a net absolute benefit of initiation of statin therapy for these patients². Statin therapy works by inhibiting the synthesis of cholesterol by the liver³. This lowers blood cholesterol levels and reduces the risk of ASCVD. The daily dose of a high-intensity statin lowers LDL-C levels by 50% or more on average, and 30-50% for moderate-intensity statin therapy².

Results

- ❖ 744 (13.4%) out of 5,553 patients being managed in free clinics in 2016, were identified as having type 1 or 2 diabetes. The average age for these patients was 55.8 years.
- ❖ Of these patients, only 127 (17.1%) of them were being treated with a moderate-intensity statin or higher.
- ❖ 473 (63.6%) of the 744 diabetics were considered to be at high risk for ASCVD based on their estimated 10-year ASCVD risk scores.
- ❖ Only 81 (17.1%) of the high-risk patients were being treated with a high-intensity statin.
- ❖ The average 10-year ASCVD risk score was 14.60%, with a standard deviation of 13.37 and a 95% confidence interval of 13.64 to 15.56.

Statin Therapy Among Diabetic Patients

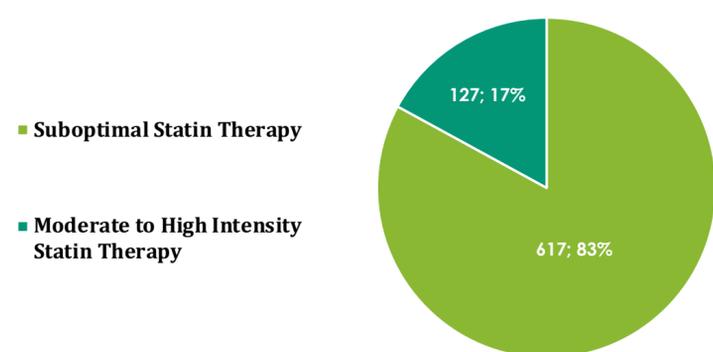


Figure 2: Diabetic patients being treated with suboptimal statin therapy (low or non-therapy) compared to moderate or high-intensity statin therapy.

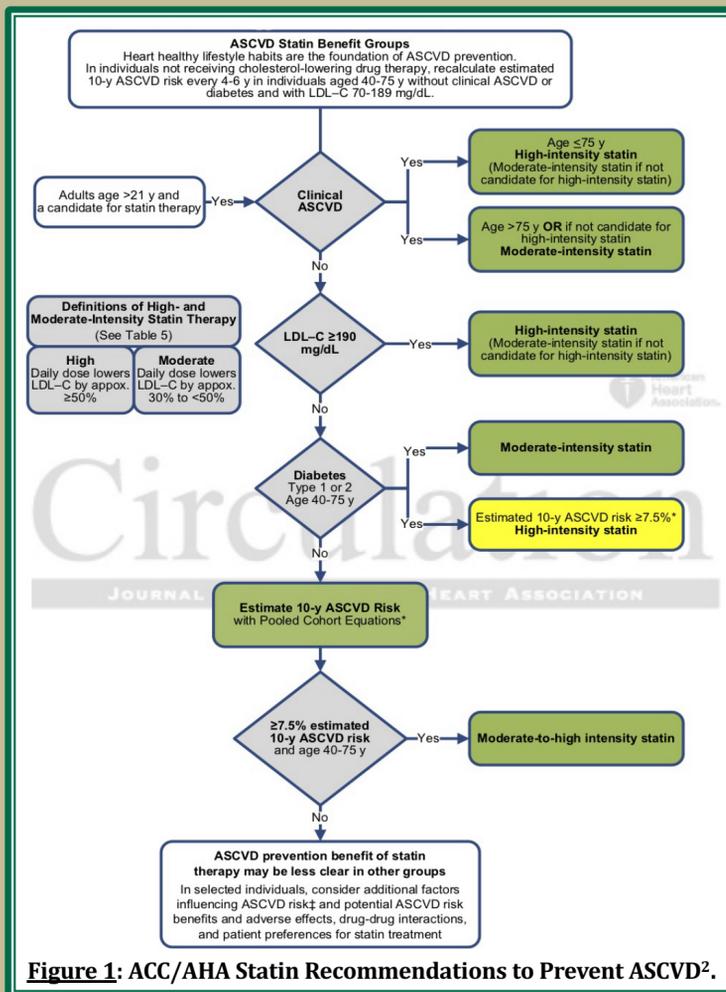


Figure 1: ACC/AHA Statin Recommendations to Prevent ASCVD².

Statin Therapy Among High-Risk Diabetic Patients

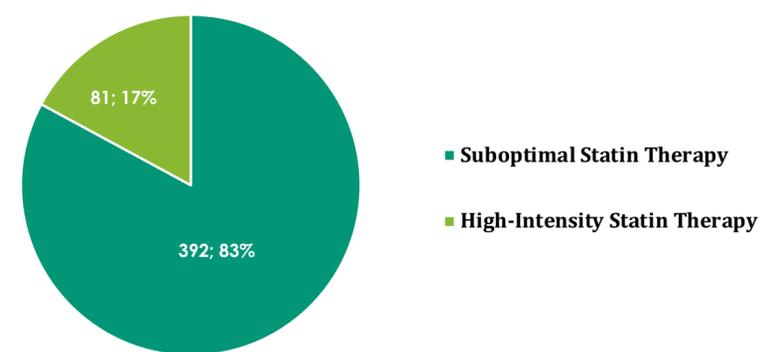


Figure 3: High-risk diabetic patients being treated with suboptimal statin therapy (low or non-therapy) compared to high-intensity statin therapy.

Objectives

- ❖ This study aims to measure the implementation and compliance of appropriate statin therapy among uninsured populations with elevated ASCVD risk scores and demonstrate the health disparity and need for better education regarding statin adherence.

Conclusion

- ❖ Uninsured diabetic patients who are being treated in free clinics have significantly low compliance rates for guideline-recommended statin therapy. Compliance rates are low for those diabetics with elevated ASCVD risk scores as well.
- ❖ The financial burden that these patients face to purchase the appropriate statins may be one reason for the low compliance rates. Decreased attention to preventative medicine and suboptimal follow up rates among free clinics may also play a role. Better education, community funding, higher awareness of statin guidelines may increase statin therapy compliance and lower risk of ASCVD among these patients.

Methods

- ❖ The data for this study was extracted from medical charts of patients that were being managed in nine free clinics in Tampa Bay between January and December of 2016. The data was then sorted to only include diabetic patients, and the 10-year ASCVD risk scores were calculated along with the 95% confidence interval for the risk scores.

References

1. Heart Disease. (2017, November 28). Retrieved from <https://www.cdc.gov/heartdisease/facts.htm>
2. Stone, N. J, et al. (2014). 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. *Circulation*, 129(25). doi:10.1161/01.cir.0000437741.48606.98
3. Ziaeian, B., & Fonarow, G. C. (2017). Statins and the Prevention of Heart Disease. *JAMA Cardiology*, 2(4), 464. doi:10.1001/jamacardio.2016.4320