Implications of the 2019 American College of Cardiology/American Heart Association Primary Prevention Guidelines for South Asians in the US: The Mediators of Atherosclerosis in South Asians Living in America (MASALA) Study

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Background

South Asian (SA) ancestry is associated with an increased risk of atherosclerotic cardiovascular disease (ASCVD). However, US SAs qualifying for clinical ASCVD risk assessment (clinical ASCVD-free, non-diabetic and statin-naïve at age ≥40 years) may represent a relatively healthy SA subgroup. In this context, the implications of using SA ethnicity as a risk-enhancing factor per recent ACC/AHA guidelines are not fully understood.

Methods

We used data from the Mediators of Atherosclerosis in South Asians Living in America (MASALA) study, a community-based study of individuals of SA ancestry living in the US (N=1,114; median age 56 years, 48% women). Metabolic risk factors and coronary artery calcium (CAC) scores were assessed. The Pooled Cohort Equations were used to estimate 10-year ASCVD risk. Abbreviations used include: ACC/AHA = American College of Cardiology / American Heart Association; ASCVD = atherosclerotic cardiovascular disease events; CAC = coronary artery calcium; MASALA = Mediators of Atherosclerosis in South Asians Living in America

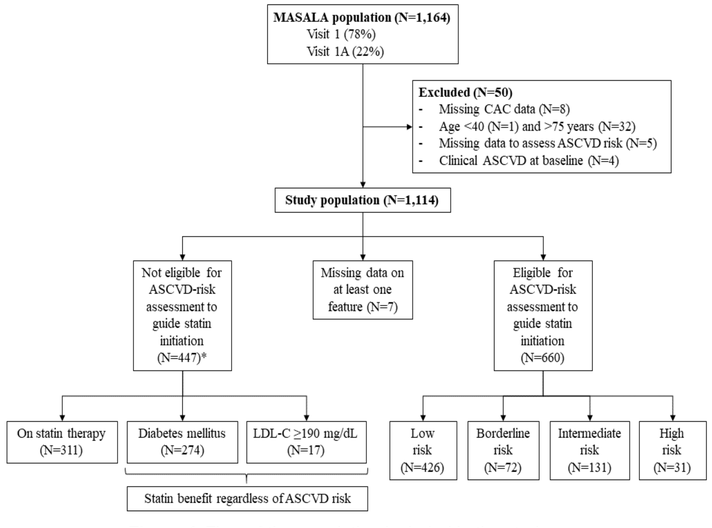

Figure 1. Flow of the population included in the study.

Results

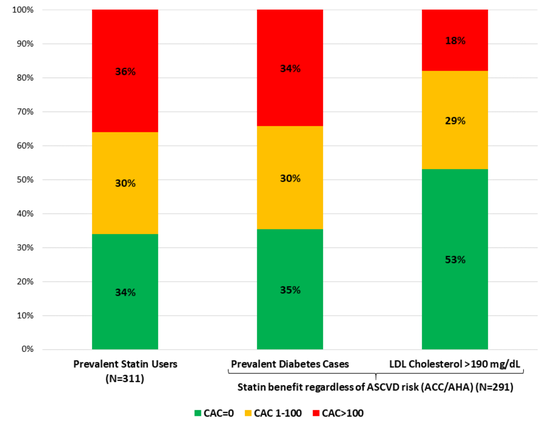

Figure 2a. Burden of CAC among MASALA participants either taking statins at baseline or considered to benefit from statins regardless of ASCVD risk according to current ACC/AHA guidelines.

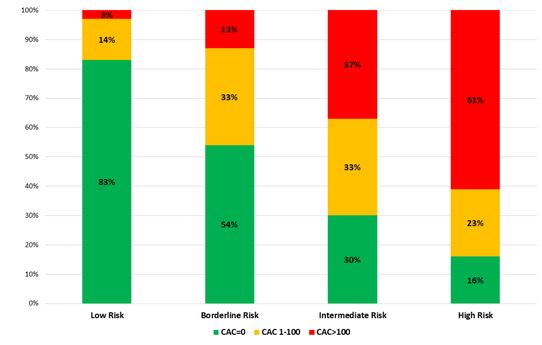

Figure 2b. Burden of CAC among MASALA participants qualifying for ASCVD risk assessment for statin initiation purposes, by estimated ASCVD risk categories. 10-year ASCVD risk was estimated using the Pooled Cohort Equations for non-Hispanic Whites. Estimated risk categories were defined using the 2018/2019 ACC/AHA guideline thresholds: low (<5%), borderline (5 – <7.5%), intermediate (7.5% – <20%) and high (≥20%) risk.

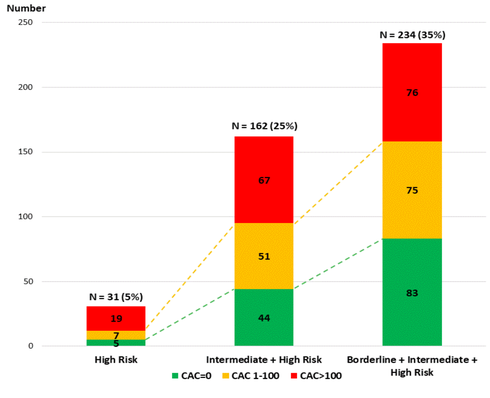

Figure 3a. Distribution of CAC scores among participants who would be considered statin-recommended using SA ethnicity as a risk enhancing factor (Panel A), and proportion of participants qualifying for ASCVD risk assessment who would be considered statin-recommended using SA ethnicity as a risk enhancing factor, by CAC score (Panel B). 10-year ASCVD risk was estimated using the Pooled Cohort Equations for non-Hispanic Whites.

Results (*continued*)

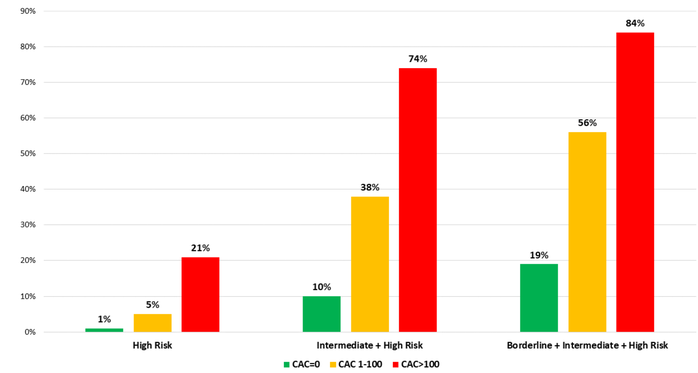

Figure 3b (continued). *Using SA ethnicity as a risk enhancing factor, by CAC score*

- Among MASALA participants, 28% were already using a statin at baseline, 25% had prevalent diabetes, and only 59% would qualify for 10-year ASCVD risk assessment for statin allocation purposes.
- Prevalence of low, borderline, intermediate, and high estimated ASCVD risk was 65%, 11%, 20% and 5%, respectively.
- Prediabetes and abdominal obesity were very frequent across all estimated risk strata.
- Among participants at intermediate risk, 30% had CAC=0 and 37% had CAC>100, while among participants at borderline risk, 54% had CAC=0 and 13% had CAC>100.
- Systematic consideration of intermediate and particularly of borderline risk individuals as statin candidates would enrich the statin-consideration group with CAC=0 participants up to 35%.

Conclusion

- Systematic consideration of borderline risk SAs as statin candidates may result in considerable overtreatment of a population at increased risk of diabetes, and further risk assessment with CAC may help better personalize statin allocation also in these individuals.
- Early, aggressive lifestyle interventions aimed at reducing the risk of incident diabetes should be strongly recommended in US SAs, particularly among those considered for statin therapy for primary ASCVD prevention.