

Analysis Supports CAC for Personalizing Statin Use

In patients with intermediate risk of atherosclerotic cardiovascular disease along with risk-enhancing factors, coronary artery calcium scoring may help more precisely calculate their need for statin therapy.

Furthermore, when the need for statin treatment isn't so clear and patients need additional risk assessment, the scoring can provide further information to personalize clinical decision making, according to a cross-sectional study of 1,688 participants in the Multi-Ethnic Study of Atherosclerosis (MESA) published in *JAMA Cardiology*. In addition to coronary artery calcium (CAC), a low ankle brachial index (ABI) score is a marker for statin therapy, the study found.

The study looked at CAC scoring in the context of ABI and other risk-enhancing factors identified in the 2018 American Heart Association/American College of Cardiology cholesterol management guidelines: a family history of premature atherosclerotic cardiovascular disease (ASCVD), lipid and inflammatory biomarkers, chronic kidney disease, chronic inflammatory conditions, premature menopause or preeclampsia, and South Asian ancestry.

Any number of these factors can indicate the need for statins in people with borderline or intermediate risk. The guidelines also call for selective use of CAC to aid the decision-making process for statin therapy when the risk for developing atherosclerosis isn't so clear.

ARBs Equal ACE Inhibitors for Hypertension, but Better Tolerated

In the largest comparison of angiotensin receptor blockers (ARBs) and angiotensin-converting enzyme (ACE) inhibitors to date, a study of nearly 2.3 million patients starting the drugs as monotherapy shows no significant differences between the two in the long-term prevention of hypertension-related cardiovascular events. However, side effects were notably lower with ARBs.

This is a very large, well-executed observational study that confirms that ARBs appear to have fewer side effects than ACE inhibitors, and no unexpected ARB side effects were detected. “Despite being equally guideline-recommended first-line therapies for hypertension, these results support preferentially starting ARBs rather than ACE inhibitors when initiating treatment for hypertension for physicians and patients considering renin-angiotensin system (RAS) inhibition,” the authors add in the study, published in the journal *Hypertension*. They note that both drug classes have been on the market a long time, with proven efficacy in hypertension and a wide availability of inexpensive generic forms.

They also stress that their findings only apply to patients with hypertension for whom a RAS inhibitor would be the best choice of therapy.

Statins Again Linked to Lower COVID-19 Mortality

Among patients hospitalized for COVID-19, those who had been taking statins had a substantially lower risk of death in a new large observational study. Results showed that use of statins prior to admission was linked to a greater than 40% reduction in mortality and a greater than 25% reduction in risk of developing a severe outcome.

The findings come an analysis of data from the American Heart Association's COVID-19 Cardiovascular Disease Registry on more than 10,000 patients hospitalized with COVID-19 at 104 hospitals across the United States published in PLoS One.

While several other studies have suggested benefits of statins in COVID-19, this is by far the largest study so far on this topic. This is the most reliable study on statins in COVID-19 to date, with the results adjusted for many confounders, including socioeconomic factors and insurance type. However, it still an observational study and therefore falls short of a randomized study.

After propensity matching for cardiovascular disease, results showed that most of the benefit of statins occurred in patients with known cardiovascular disease. While most patients taking statins will have cardiovascular disease, there are also many patients who take these drugs who don't have heart disease but do have cardiovascular risk factors, such as those with raised cholesterol, or a family history of cardiovascular disease. For [such patients], the effect of statins was also in the same direction but it was not significant. This doesn't exclude an effect.

Myocarditis Tied to COVID-19 Shots More Common Than Reported?

While cases of pericarditis or myocarditis temporally linked to COVID-19 vaccination remain rare, they may happen more often than reported, according to a large review of electronic medical records (EMR).

They also appear to represent two “distinct syndromes”. Myocarditis typically occurs soon after vaccination in younger patients and mostly after the second dose, while pericarditis occurs later in older patients, after either the first or second dose. Authors report their analysis in a research letter published in *JAMA*.

They reviewed the records of 2,000,287 people who received at least one COVID-19 vaccination at 40 hospitals in Washington, Oregon, Montana, and California that are part of the Providence healthcare system and use the same EMR. The median age of the cohort was 57 years and 59% were women.

A little more than three quarters (77%) received more than one dose; most received the mRNA vaccines made by Pfizer (53%) and Moderna (44%); only 3% received the Johnson & Johnson vaccine. The records showed that 20 people had vaccine-related myocarditis (1.0 per 100,000) and 37 had pericarditis (1.8 per 100,000).

A recent report, based on data from the Centers for Disease Control and Prevention (CDC) Vaccine Adverse Events Reporting System (VAERS), suggested an incidence of myocarditis of about 4.8 cases per 1 million following receipt of mRNA COVID-19 vaccine.

Aerobic Exercise Reduces BP in Resistant Hypertension

Aerobic exercise may help reduce blood pressure in patients whose hypertension responds poorly to medications, a new study suggests.

A randomized controlled clinical trial showed that patients with resistant hypertension assigned to a moderate-intensity aerobic exercise training program had lower blood pressure (BP) compared with patients who received usual care.

Resistant hypertension persists as a big clinical challenge because the available treatment options to lower blood pressure in this clinical population, namely drugs and renal denervation, show limited success. Aerobic exercise was safe and associated with a significant and clinically relevant reduction in 24-hour, daytime ambulatory, and office blood pressure. The findings were published in *JAMA Cardiology*. The researchers enrolled 53 patients aged 40 to 75 years with a diagnosis of resistant hypertension in this prospective, single-blinded trial.

Resistant hypertension was defined as having a mean systolic BP of 130 mm Hg or greater on 24-hour ambulatory BP monitoring and/or 135 mm Hg or greater during daytime hours while taking maximally tolerated doses of at least 3 antihypertensive agents, including a diuretic, or to have a controlled BP while taking 4 or more antihypertensive agents.

From March 2017 to December 2019 at two sites in Portugal, 26 patients were randomly assigned to a 12-week aerobic exercise training program involving three 40-minute supervised sessions per week in addition to usual care. Another 27 patients in the control group were allocated to receive usual care only.

24-hour ambulatory systolic blood pressure was reduced by 7.1 mm Hg (95% CI, -12.8 to -1.4; $P = .02$) in patients in the exercise group compared with the control group. In the exercise group, there were additional reductions of:

- -5.1 mm Hg of 24-hour ambulatory diastolic blood pressure (95% CI, -7.9 to -2.3; $P = .001$)
- -8.4 mm Hg of daytime systolic blood pressure (95% CI, -14.3 to -2.5, $P = .006$)
- -5.7 mm Hg of daytime diastolic blood pressure (95% CI, -9.0 to -2.4; $P = .001$)
- -10.0 mm Hg of office systolic blood pressure (95% CI, -17.6 to -2.5; $P = .01$)

Additionally, a significant improvement in cardiorespiratory fitness (5.05 mL/kg per minute of oxygen consumption; 95% CI, 3.5 - 6.6; $P < .001$) was observed in the exercise group compared with the control group.

Women Still Under-represented in CVD Trials, Despite Requirements

Women, and especially minority women, remain under-represented in most clinical cardiology trials, despite guidelines and legal requirements put forward years ago to ensure broader inclusivity, according to a new report released by the American College of Cardiology (ACC) Cardiovascular Disease in Women Committee.

Women are particularly under-represented in trials of coronary artery disease, heart failure with reduced ejection fraction, and arrhythmia studies involving devices and procedures, the committee found.

Gender-specific data are essential to optimal cardiovascular care and increasing awareness about trials is critical for everyone. Also, having trial information be available to all patients, regardless of where they live, who they are, or where they get care is important. The report was published in the *Journal of the American College of Cardiology*.

Barriers and Solutions

In the report, the committee outlines barriers to enrolling women in CV clinical trials and offers strategies to help increase participation of women in these trials. One key barrier is low referral rates to cardiologists and specialty programs for more aggressive care, leading to fewer women being treated by specialists who might be recruiting for clinical trials. The committee recommends expanding awareness of ongoing trials to primary care providers and to community and safety-net hospitals, and to offer more locations of trial enrollment if possible.

Another barrier is "ageism," with older patients disproportionately under-represented in clinical trials overall, further compounding the under-representation of women in CV trials, as heart disease is significantly higher in older-age women. The committee recommends expanding age criteria and limiting exclusion criteria that disproportionately affects the elderly. "It is critical that age and comorbidities be expanded in clinical trial inclusion criteria to reflect real-world patient population.

A lack of awareness, trust, and logistical barriers is another obstacle to getting more women enrolled in CV clinical trials. Research has shown that women are more reluctant than men to consider trial participation.