HEART HEALTH

CT Scans Identified Changes Indicating Coronary Risk

A newly described measure, the fat attenuation index (FAI), may be able to spot plaque instability in the coronary vasculature in advance of a heart attack, according to a recently published study. The FAI, measured using computed tomography (CT) angiography, is used to describe the lipid content and characteristics of tissue surrounding blood vessels to identify inflammation.

Standard imaging modalities are not able to detect vascular inflammation, the study authors explained. Being able to detect such inflammation would allow the early use of targeted therapies to prevent or treat a number of heart conditions, including myocardial infarction. In in vivo and ex vivo work and a clinical study, the authors showed that vascular inflammation can be quantified using the CT angiography method that they developed.

The FAI has “excellent sensitivity and specificity for detecting tissue inflammation,” the authors said. In a validation cohort in 273 patients, they found that the FAI gradient around human coronary arteries identified early subclinical coronary artery disease. It also detected dynamic changes in perivascular fat tissue in response to variations in vascular inflammation, and it identified vulnerable atherosclerotic plaques during acute coronary syndromes.

Because CT is widely used in examining chest pain, this methodology could be implemented with relative ease to identify plaque instability noninvasively, the authors said.

Higher Iron Level May Reduce Coronary Artery Disease Risk

A higher level of iron in the body may be protective against the risk of coronary artery disease (CAD), a study using genomic analyses suggests. If further research bears out this relationship, it could indicate a new therapeutic target in CAD, the study authors noted.

Researchers at two institutions in London, United Kingdom, used a Mendelian randomization study design to investigate the issue. They identified three genetic loci associated with iron status; they then analyzed single nucleotide polymorphism (SNPs) associations with iron status based on a genome-wide association study meta-analysis of almost 49,000 individuals. Next, they screened for these SNPs in two large databases containing a total of more than 124,000 people with CAD and more than 250,000 controls. They obtained combined Mendelian randomization estimates by pooling results for the three genetic loci.

The study identified evidence of a protective effect of higher iron status on CAD risk, the authors said.

Ozone Exposure May Affect Cardiovascular Health

Environmental exposure to ozone may have an effect on cardiovascular health, according to a study conducted in China. Increases in ozone exposure were associated with increases in platelet activation and blood pressure in the study, published in JAMA Internal Medicine.

From December 1, 2014, to January 31, 2015, a study in 89 healthy adult participants evaluated the cardiovascular impact of ozone exposure not associated with changes in respiratory function in a highly controlled work campus setting in Changsha City, China. During the study, individual residences and workplaces were closely monitored to determine the estimated exposure concentrations of indoor and outdoor ozone levels, as well as other commonly found pollutants, for both 24-hour and 2-week periods.

According to the authors, the participants were monitored for “biomarkers indicative of inflammation and oxidative stress, arterial stiffness, blood pressure, thrombotic factors, and spirometry.” These factors were measured in four sessions over the course of the study.

Stress Leads More African Americans to Develop Alzheimer Disease

Four recently presented studies at an Alzheimer disease conference shed light on why African Americans are more likely to develop Alzheimer disease than white Americans. Early stress and neighborhood conditions were named as prime culprits for the disparity.

According to one study, a single major stressful event experienced early in life is on par with 4 years of cognitive aging—and on average, African Americans experience more than 60% more of these events than non-Hispanic whites. Another study cited neighborhood disadvantage as a possible contributor to the disparity in prevalence of dementia.

A third study compared African Americans born in states with the highest levels of infant mortality with those not from those states and found a 40% increased risk of dementia in those living a state with high infant mortality rates. Additionally, an 80% increased risk was noted in these
DIABETES

Survey Exposes a Lack of Prediabetes Knowledge in PCPs

Results from a survey of primary care providers (PCPs) suggest that addressing gaps in knowledge and using behavioral weight loss programs could help curb the diabetes epidemic. The self-administered written survey examined 140 PCPs’ beliefs, management practices, and knowledge of risk factors for prediabetes. Only 6% of PCPs correctly identified all risk factors that should prompt prediabetes screening. Although nearly 90% of PCPs reported performing close follow-up of patients with prediabetes, few (11%) recommended a behavioral weight loss program as the initial management approach to prediabetes.


Diabetes Drug Showed Promise in Parkinson Disease

A diabetes drug had positive effects on motor scores in patients with Parkinson disease in a randomized study published recently in the Lancet. The effects were sustained beyond the period of drug exposure, the study authors noted.

Exenatide (Byetta and Bydureon; AstraZeneca), a glucagon-like peptide-1 agonist, is commonly used in the treatment of type 2 diabetes mellitus. In a randomized single-center double-blind, placebo-controlled trial, investigators administered subcutaneous injections of exenatide 2 mg or placebo to patients aged 25 to 75 years with moderate Parkinson disease. The injections were given for 48 weeks, followed by a 12-week washout period, and patients continued using their other regular medications during the trial. The primary outcome measure was difference in a motor subscale at 60 weeks.

Primary analysis included 31 patients who received exenatide and 29 who received placebo. Scores in the motor subscale improved by 1.0 points in the treated patients and worsened by 2.1 points in those receiving placebo, an adjusted mean difference of 3.5 points, according to the study authors. Injection site reactions and gastrointestinal symptoms were the common adverse events in both groups, and no serious adverse events in either group were judged to be related to the study interventions.

“Whether exenatide affects the underlying disease pathophysiology or simply induces long-lasting symptomatic effects is uncertain,” the study authors said. “Exenatide represents a major new avenue for investigation in Parkinson’s disease, and effects on everyday symptoms should be examined in longer-term trials.”