Arm Exercises Enhance Adenosine Stress Testing

BY PATRICE WENDLING
Chicago Bureau

MONTREAL — Adenosine stress testing with supplemental arm pumping exercise had the same diagnostic accuracy as exercise stress testing in detecting coronary artery disease in a study of 302 patients.

The results validate a long-standing practice at Massachusetts General Hospital, Boston, where supplemental arm exercise with light weights—not arm exercise with squeeze balls and not a treadmill walk—has been used for a decade to prevent adenosine-related side effects during myocardial perfusion imaging.

Arm-pumping exercise is utilized in all patients who are unable to safely negotiate a treadmill, which includes many inpatients as well as elderly and arthritic patients and those with increased risk of falling because of seizure or balance disorders, Dr. Arash Kardan, of the hospital, said in an interview at the annual meeting of the American Society of Nuclear Cardiology. Though not well studied or understood, supplemental exercise is thought to mitigate adenosine-related bradycardia and hypotension via a neurocirculatory response, he said.

The study was presented in a poster at the meeting, and included 302 patients referred for clinically indicated rest-stress myocardial perfusion imaging (MPI) with technetium 99m sestamibi. Patients underwent either exercise stress testing using the standard Bruce protocol achieving 85% of maximum predicted heart rate, or received an adenosine infusion of 0.14 mg/kg per minute for 4-5 minutes in one arm and pumped a 2.5-pound weight with their opposite arm.

All of the patients underwent coronary angiography within 2 months of MPI. Positive MPI was defined as demonstrating a reversible defect, whereas positive angiography was defined as the presence of any lesion with greater than 50% stenosis. Patients with a history of myocardial infarction or coronary bypass surgery were included for analysis. Overall, one-third of the patients had previously reported coronary artery disease.

There were 158 patients in the exercise stress group, with a mean age of 63 years. The sensitivity was 91% and specificity 100%. There were 144 patients in the arm exercise group, with a mean age of 68 years. Sensitivity was 84% and specificity 81%; the differences from the exercise stress group were nonsignificant. No adenosine arm tests required termination because of side effects. All exercise treadmill tests were completed as well, he said. ■

Blood Pressure Goals Unmet in Diabetic Patients

BARCELONA — Only two in five Americans with type 2 diabetes and cardiovascular disease and one in five in European countries meet blood pressure goals, Benjamin A. Steinberg said at the joint meeting of the European Society of Cardiology and the World Heart Federation.

These findings, from a large contemporary international database, underscore the need for physicians to do much better at identifying and controlling high blood pressure in this high-risk population, Mr. Steinberg, a medical student at Johns Hopkins University, Baltimore, said in an interview.

He analyzed the CardioMonitor database for 1998-2004. The database is an annual survey of outpatients with cardiovascular disease in multiple countries relying on records provided by physicians and cardiologists. For the years 1998-2004, excluding 2002, when the survey wasn't conducted, the database included nearly 155,000 patients with cardiovascular disease in the United States and five European nations, of which 23,139 also had type 2 diabetes.

The prevalence of diabetes in cardiovascular patients rose during the years of the study. For example, the reported prevalence of type 2 diabetes in patients with cardiovascular disease doubled in France and the United Kingdom between 1998 and 2004; in the United States, it climbed from 15.1% to 20.5%. The Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure VII (JNC-VII) goal of a systolic blood pressure below 130 mm Hg was achieved by only 41% of American diabetic cardiovascular patients. European rates were far lower, Dr. Steinberg continued.

—Bruce Jancin