Hypertension Algorithm Boosts Control Rate

BY MITCHEL L. ZOLER
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ORLANDO — A simple hypertension-treatment algorithm was more effective than was guideline-led practice for controlling blood pressure in a controlled study involving 45 family practices in southern Ontario.

The cornerstone of the algorithm was initial, low-dose treatment with a fixed-dose combination of a diuretic and an angiotensin-controlling drug. After the first 6 months of treatment, practices that used the algorithm to treat patients achieved a 65% control rate, compared with a 53% rate in practices that used standard approaches based on official Canadian recommendations, a 12% absolute difference in control that was statistically significant, Dr. Ross Feldman said at the annual scientific sessions of the American Heart Association.

"This simple, back-to-the-future, stepped-care approach may lead to better blood pressure control rates," said Dr. Feldman, deputy scientific director at the Robarts Research Institute in London, Canada.

"Improving care by simplifying the [antihypertensive] regimen in routine clinical practice is a substantial accomplishment," commented Dr. John Spertus, director of cardiovascular education and outcomes research at the Mid-America Heart Institute in Kansas City, Mo.

The Simplified Therapeutic Intervention to Control Hypertension (STITCH) trial randomized 45 family practices in southern Ontario. Most were single-physician practices. The physicians in 27 control practices were encouraged to manage their patients with treated but uncontrolled hypertension following guidelines from the Canadian Hypertension Education Program, recommendations that are similar to those from the Joint National Committee in the United States, Dr. Feldman said. Physicians in the 18 intervention practices were asked to manage uncontrolled hypertension by following a specific treatment algorithm. (See box.)

The average age of the 2,048 patients in the study was 62 years, and average blood pressure at the start of the study was about 154/88 mm Hg. To start treatment according to the algorithm, which called for a low dose (half tablet) of a marketed formulation that combined a diuretic with either an angiotensin-converting enzyme inhibitor or an angiotensin-receptor blocker, physicians could choose among 11 formulations that were on the Canadian market at the time the study began. Physicians in control practices could choose among more than 100 possible two-drug combinations for initial therapy based on what was on the Canadian market.

Patients were considered to have reached their goal pressure if it was less than 140/90 mm Hg, or less than 130/80 mm Hg if the patient also had diabetes.

The STITCH algorithm led to an average 22.9-mm Hg drop from baseline in systolic blood pressure, compared with an average fall of 17.2 mm Hg in the control patients, a 5.7 mm Hg absolute difference that was statistically significant. This difference in blood pressure reduction is comparable with what is often achieved by adding an additional drug to an antihypertensive regimen, Dr. Feldman noted. Diastolic pressure fell by an average of 2.4 mm Hg more in the patients treated by the STITCH algorithm, compared with control patients.

But the total number of standard drug doses received by patients in the two treatment groups was very similar, about two doses per day, indicating that patients in the algorithm group were not receiving more drugs than were control patients; they were simply receiving more effective regimens.

The major difference between the algorithm and standard-care groups was that the prespecified algorithm was simpler, Dr. Feldman said in an interview.

The STITCH algorithm had several other attractive features, commented Dr. Elijah Saunders, professor of medicine and head of the section of hypertension at the University of Maryland, Baltimore. Its simpler regimens with fewer pills for patients to take may have improved compliance. The fixed-dose combinations also reduced costs to patients by eliminating some copays, and the formulations may have improved tolerability and produced quicker blood pressure control, Dr. Saunders said.

The major limitation to using a similar strategy in the United States is that fixed-dose, combination-drug formulations of the type used in the study have not been approved by the Food and Drug Administration for initial treatment of hypertension. Despite this, "it's only a matter of time before we have support for a STITCH-like study in the United States," Dr. Saunders said.

In Canada, Dr. Feldman said he is hopeful that the STITCH treatment algorithm can be officially endorsed by 2009, he said in an interview. ■

Algorithm Used In STITCH

1. Start patients on a half tablet daily of the lowest dose available for a fixed-dose combination of a diuretic plus either an angiotensin-converting enzyme inhibitor or angiotensin-receptor blocker.
2. If patient fails to reach goal, gradually raise dose, titrating to a whole tablet daily and then progressing to higher fixed-dose combinations of the same formulation until maximum dose for formulation is reached.
3. If patient is still not at goal, add a calcium channel blocker.
4. If patient is still not at goal, add an α-blocker, β-blocker, or spironolactone.

Source: Dr. Feldman

Expand Subclinical CVD Testing to Close the Detection Gap

BY DOUG BRUNK
San Diego Bureau

SAN DIEGO — Consider expanding subclinical cardiovascular disease testing to include asymptomatic high-risk patient populations, Leslee J. Shaw, Ph.D., advised attendees at the annual meeting of the American Society of Nuclear Cardiology.

Primary care physicians considering which patients to refer for evaluation should ask themselves in which of their appropriate patients they can identify risk of cardiovascular disease, suggested Dr. Shaw, professor of medicine at Emory University, Atlanta. "The goal is to expand cardiovascular testing to improve the detection gap. But we have to do it appropriately, without excessive cost."

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One ideal population to target with subclinical testing is the high-risk elderly. A recent study found that 1 in 5 people aged 65 years and older has an ankle brachial index of less than 0.9, yet only 1 in 10 peripheral artery disease patients will have classical symptoms of intermittent claudication (Atherosclerosis 2004; 172:95-105). "If one relies solely on classical symptoms of intermittent claudication, you will underappreciate the prevalence of peripheral artery disease," said Dr. Shaw, who is also an outcomes research scientist for the Emory Program in Cardiovascular Outcomes Research and Epidemiology. "So in this population of patients, perhaps ankle brachial index or some other modality may be good at identifying asymptomatic patients who are at risk of worsening outcome."

Other populations to target include:

▶ **High-risk functionally impaired patients.** Patients who can't achieve 5 METs on the treadmill test "are functionally impaired and have a high risk for cardiovascular events," she said. "We need to do a better job of not only identifying the degrees of comorbidity, but treating their comorbidities, perhaps getting them to improve their exercise abilities to lessen that risk. There [are] a lot of data showing that these patients can improve their exercise tolerance and can have an improved outcome following cardiac rehabilitation."

▶ **High-risk smokers.** Smoking is a leading cause of acute coronary thrombosis. Dr. Shaw and her associates showed in a recent study that patients who smoke and have coronary calcification have a worsening mortality, compared with nonsmokers (Eur. Heart J. 2006;27:968-75). "Young smokers with a lot of coronary calcification have an anticipated loss in life expectancy of 4-5 years," she said. "This is a good message for young smokers, especially patients in their 40s who have children. Five years is a lot to lose of your life."

▶ **Asymptomatic diabetics.** Diabetes patients who are candidates for subclinical cardiovascular disease testing include those with poorly controlled diabetes, those who have not achieved their LDL cholesterol goal, those with multiple cardiac risk factors, and those who have had diabetes for more than 5 years.

In this population of patients "you might want to think about assessing the baseline cardiovascular risk, consider ischemia testing in those with a high-risk scan, and look for disease progression downstream," Dr. Shaw said.

She called coronary calcification "an amazing prognostic test." The overall rate of perfusion abnormalities is high in diabetic patients with a calcium score of 100 or higher.

▶ **Patients with metabolic syndrome.** The National Cholesterol Education Panel Adult Treatment Panel III defines the criteria for metabolic syndrome as three or more of the following: abdominal obesity (a waistline greater than 102 cm in men and greater than 88 cm in women); triglyceride levels of 150 mg/dL or greater; HDL cholesterol levels of less than 40 mg/dL in men and less than 50 mg/dL in women; a systolic blood pressure of 130 mm Hg or greater or a diastolic blood pressure of 85 mm Hg or greater; and a fasting glucose level of 110 mg/dL or greater.

A recent study showed that the prevalence of inducible ischemia is increased among patients with metabolic syndrome who do not have diabetes, as well as in those who have diabetes, when their calcium scores exceed 100 (Diabetes Care 2005;28:1445-50).

In these patients, "think about retesting with perfusion imaging," Dr. Shaw advised.

▶ **High-risk women.** This includes those with early menopause, those with autoimmune disease, and those with polycystic ovary syndrome. All conditions confer an increased risk of coronary artery disease.

Dr. Shaw emphasized that by targeting high-risk patient populations, you are not screening, you are testing. "So in discussions with payers, tell them that you are trying to identify appropriate testing candidates and minimize inappropriate testing in your testing practice," she explained. "The goal is to identify patients who require more intensive management and thereby decrease the detection gap of high-risk patients with a resulting … improvement in cardiovascular mortality." ■