Cardiovascular Risk Reduction Gains Are Turning Into Setbacks

BY DIANA MAHONEY

The prevalence of a low-risk profile for cardiovascular disease among adults in the U.S. population has decreased in recent years, suggesting the "huge potential" for preventing cardiovascular disease is far from being realized, according to an analysis of NHANES.

Using data from four National Health and Nutrition Examination Surveys, Dr. Earl S. Ford, medical officer of the U.S. Public Health Service at the Centers for Disease Control and Prevention in Atlanta, and colleagues tracked cardiovascular risk data for American adults aged 25-75 years during 1971-1975, 1976-1980, 1988-1994, and 1999-2004, and showed that the prevalence of a low-risk profile increased from 4.4% at the time of the first survey to 10.5% by the third survey, but then decreased to 7.5% in the fourth survey (1999-2004).

The low-risk-factor profile incorporated the following variables: not currently smoking; total cholesterol less than 200 mg/dL without cholesterol-lowering medications; systolic blood pressure less than 120 mm Hg and diastolic blood pressure less than 80 mm Hg without antihypertensive medications; body mass index less than 25 kg/m^2; and not having been previously diagnosed with diabetes, the authors explained (Circulation 2009 Sept. 14 [doi.10.1161/CirculationAHA.108.835728]).

"The limited strides that were made toward achieving low-risk status during the 1970s and 1980s have more recently been negated by the obesity epidemic and increased rates of hypertension and diabetes," Dr. Ford said in an interview. According to the results, "fewer than 10% of Americans are meeting the low-risk goals."

The low-risk factor patterns were similar for men and women, but the prevalence of low-risk profiles was higher in women than in men in each of the surveys, the authors reported. Similarly, the low-risk-factor burden was much higher among survey respondents aged 25-44 years than among those aged 45-64 or 65-74 years in all the surveys, and it was higher among whites than blacks during each survey except 1976-1980. During 1988-1994 and 1999-2004 only, a larger percentage of whites had a low-risk-factor burden compared with Mexican Americans, they wrote.

An analysis of the individual risk categories showed favorable trends for not currently smoking (60% at the time of the first survey and 74% by the fourth survey) and low concentrations of total cholesterol (35% and 43%, respectively). For blood pressure, the low-risk percentage was higher for the period 1988-1994 than for the 1971-1975 period, but it decreased for the period 1999-2004, "which is worrisome," the authors wrote.

Similarly, "the distribution of body mass index progressively deteriorated over time," they reported, adding that the unfavorable trends "argue for vigorous population-based approaches to reverse the unhealthy shift in the distributions of blood pressure and body mass index and to sustain or accelerate the improvement in the distribution of total cholesterol."

Because the NHANES surveyed only noninstitutionalized adults, the true risk-factor burdens "may be even worse" than those reported, which is one of the limitations of the study, the authors noted. Additional limitations include the exclusion of physical activity and a dietary index as part of the risk determination, and changes in the wording of questions for use of current antihypertensive medication and physician-diagnosed diabetes that could potentially have affected the estimates, they wrote.

Despite the possible limitations, "our results clearly demonstrate a great need for prevention; thus, health care providers should have adequate resources, time, and reimbursement to engage in the prevention of cardiovascular disease in individuals," the authors wrote.

In an accompanying editorial, Rob M. van Dam, Ph.D., of the Harvard School of Public Health, Boston, and Dr. Walter C. Willett of Brigham and Women's Hospital in Boston, said that the trajectory of the risk factor trends is even more worrisome considering the analyses "do not yet reflect the effects of the current epidemic of childhood obesity, which causes an early onset of type 2 diabetes, hypertension, and dyslipidemia" (Circulation 2009 [doi:10.1161/CIRCULATIONAHA.109.891507]).

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Hypertension Improved With Interval Workouts

BY BRUCE JANCIN

BARCELONA — Aerobic interval exercise training is a more effective treatment for hypertension than is moderate-intensity continuous exercise, according to a Norwegian randomized trial.

In the study, 89 patients with grade 1 or 2 hypertension who were not on medication were randomized to one of three exercise training regimens carried out three times per week for 12 weeks. The three study arms consisted of supervised aerobic interval exercise with a target intensity of 90%-95% of maximum heart rate, supervised isocaloric continuous exercise at 70% of maximum, or, as a control, standard medical advice about the importance of physical activity but no supervised training.

Mean 24-hour BPs went from a baseline of 154/94 to 141/87 mm Hg in the aerobic interval group and from 151/92 to 147/88 mm Hg in the continuous exercise group.

After 12 weeks, mean 24-hour blood pressures in the aerobic interval training group had improved from a baseline of 154/94 mm Hg to 141/87 mm Hg. Moreover, their maximal oxygen uptake (VO_{2max}) increased by about 15%, from 36.3 to 41.7 mL/kg per minute. Those were significantly greater improvements in blood pressure and VO_{2max} than noted in the moderate-intensity–exercise group, which in turn did better than the unsupervised controls, Dr. Harrald E. Moelmen-Hansen reported at the annual congress of the European Society of Cardiology.

Twenty-four-hour blood pressures in the moderate-intensity continuous exercise group, for example, went from 151/92 to 147/88 mm Hg, while VO_{2max} improved from 34.0 to 35.8 mL/kg per minute.

Mean heart rate decreased significantly in the aerobic interval group, from 73 to 69 bpm, but remained unchanged over time in the others. Similarly, nighttime blood pressures improved significantly, from 140/84 to 129/79 mm Hg, with interval training but were unchanged in the other two patient groups, according to Dr. Moelmen-Hansen of the Norwegian University of Science and Technology, Trondheim.

Endothelial function measured as flow-mediated dilation of the brachial artery increased from 6.12% to 10.07% in the high-intensity exercise group but was unaffected in the others.

HDL cholesterol increased from 54.5 to 57.2 mg/dL with aerobic interval training, and from 57.6 to 58.6 mg/dL in the continuous exercise group. It was unchanged in the unsupervised controls.

This randomized controlled trial was conducted because even though major guidelines recommend regular exercise for the prevention and control of hypertension, the optimal exercise dose and intensity have been unclear, Dr. Moelmen-Hansen explained. ■

Mortality Varies by Gender in Those With Heart Failure, ICD

BY MARY ANN MOON

Implantable cardioverter defibrillators do not reduce all-cause mortality in women who have advanced heart failure, unlike in men, according to a meta-analysis.

"In other words, ICDs are being implanted in hundreds of thousands of women without substantial evidence of benefit, apparently based on the assumption that, to paraphrase the old saying, 'What's good for the gander is good for the goose,'" Dr. Rita F. Redberg said in an editorial comment accompanying the report.

This finding is particularly concerning because a "recent analysis of the National Cardiovascular Data Registry found that women have a 70% higher risk of major adverse events after ICD implantation than do men," noted Dr. Redberg, editor of the journal and director of women's cardiovascular services at the University of California, San Francisco.

Dr. Hamid Ghanbari and his associates at Providence Hospital Heart Institute and Medical Center, Southfield, Mich., performed the meta-analysis because most of the patients in clinical trials of ICDs have been male. It has never been established whether women with advanced heart failure receive the same benefit from ICD placement for the primary prevention of sudden cardiac death.

The investigators pooled data from five randomized, controlled clinical trials that compared ICD implantation with medical therapy and included 934 women along with 3,810 men. Men who had heart failure with reduced left ventricular ejection fraction showed a significant decrease in all-cause mortality when they were given an ICD rather than medical therapy to prevent sudden cardiac death.

In contrast, women did not show a mortality benefit, either in the combined data or in any of the five individual trials, Dr. Ghanbari and his colleagues said (Arch. Intern. Med. 2009;169:1500-6).

The reason for this discrepancy is not yet known, and further study of the issue is warranted. One possible explanation is that women who receive ICDs are known to have more severe comorbidities than men who receive them, and thus may have more competing causes of death compared with men, the researchers said.

In her editorial comment, Dr. Redberg concurred that further study of this surprising finding is warranted (Arch. Intern. Med. 2009;169:1460-1).

Neither Dr. Ghanbari nor Dr. Redberg reported any financial conflicts of interest. ■