Primary Prevention of Heart Failure in Older Adults*

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Heart failure is increasing in frequency and is associated with substantial morbidity and mortality. The incidence of heart failure is highest among older adults (1,2). Treatment of heart failure, a leading cause of hospitalization for people older than 65 years of age, costs more than $30 billion per year in the United States (3,4). It follows that identifying modifiable risk factors for primary prevention of heart failure is an important public health goal to reduce both the burden of disease and health care costs.

In this issue of JACC: Heart Failure, Del Gobbo et al. (5) report on an analysis from the Cardiovascular Health Study, a community-based cohort of adults ≥65 years of age, to determine the relative contribution of major lifestyle factors to the development of heart failure in older adults who did not have heart failure at the onset of data collection. At baseline, they measured self-reported patterns of eating, level of physical activity, alcohol intake, smoking, and obesity. There were 1,380 incident cases of heart failure among 4,490 men and women who were followed for up to 21.5 years. They found that walking at a pace of at least 2 mph, expending >845 calories per week in leisure activity, drinking at least 1 alcoholic beverage per week, avoiding obesity, and not smoking were all independently associated with a lower risk of incident heart failure. There was a dose-response relationship between the number of these factors and the reduction in heart failure risk. Participants with ≥4 of these lifestyle factors had one-half the risk of developing heart failure than those without these factors. Surprisingly, no dietary pattern was associated with incident heart failure, although higher intake of sodium was associated with increased risk.

This type of analysis has been done before, and the findings were anticipated except for the lack of association between dietary patterns and incident heart failure. The investigators performed extensive analyses using different methods and models to try to detect a relationship with dietary pattern without success. Their findings differed from those reported in the Swedish Mammography Cohort (6) and the Cohort of Swedish Men (7), in which adherence to the Dietary Approaches to Stop Hypertension diet was associated with a significantly lower risk of heart failure. In the Physicians’ Health Study 1, eating breakfast cereals and fruits and vegetables was also associated with a significantly lower lifetime risk of heart failure (8). The reason for the lack of association of diet with incident heart failure in the current study is unknown. It is possible that an association exists but that it was mediated through obesity, hypertension, and/or coronary disease.

Although much public attention has been placed on the primary prevention of coronary artery disease, little has been directed toward the primary prevention of heart failure, so this is a welcome study. Imagine the impact of discovering a new drug that lowered the risk of heart failure by 50%! Unfortunately, as an observational study, it is not possible to attribute a cause-and-effect relationship between the favorable lifestyle variables identified and reducing the risk of heart failure. However, the findings are concordant with Class I recommendations from the American College of Cardiology Foundation/American Heart Association heart failure guidelines,
which state that hypertension and lipid disorders should be controlled and other conditions that may lead to or contribute to heart failure, such as obesity, diabetes, and tobacco, should be controlled or avoided for the prevention of heart failure (4). These guidelines are general and nonspecific. More detailed recommendations have been published in the American Heart Association/American College of Cardiology lifestyle management guideline to reduce cardiovascular risk, but they are not targeted specifically to prevent heart failure.

Because of the magnitude of the morbidity, mortality, and cost caused by heart failure, more effort should be invested in its prevention, especially with the potential that simple, inexpensive lifestyle interventions may have a large impact. Randomized controlled trials that test the effectiveness of lifestyle interventions are difficult to conduct because of the large sample size needed and the challenge of achieving and documenting adherence to behavior change over an extended period of time. In the meantime, it makes sense for us and our patients to walk briskly, drink modestly (and responsibly), avoid obesity, and not smoke. We already know that these behaviors have ample health benefits, and prevention of heart failure may be an additional advantage.

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