Ischemic Heart Disease in the Older Hypertensive Patient
Evaluation and Management

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INTRODUCTION

Ischemic heart disease (IHD) is characterized by an imbalance between myocardial blood flow supply and metabolic demand. In Westernized society, this is found principally in the setting of atherosclerotic coronary artery disease (CAD), also known as coronary heart disease (CHD), but is also present in other disease states commonly found in the hypertensive elderly patient, including valvular heart disease, dilated cardiomyopathy, atrial fibrillation (AF), metabolic disorders such as hypothyroidism, left ventricular hypertrophy (LVH), and diastolic dysfunction. In patients with CAD, supply is limited by the degree of luminal narrowing in epicardial coronary vessels. In those with hypertension with or without LVH, excess demand is present owing to increases in wall stress and in metabolic demands of the hypertrophied myocardium. In both of these disorders, there is associated endothelial dysfunction in
the coronary microvasculature, which can also limit supply to the myocardium (1). When CAD and hypertension with or without LVH coexist, both supply and demand are adversely affected, thus worsening the degree of expected ischemia.

In our society, about 50% of men and women ultimately die of cardiovascular disease (CVD) (2). CHD is the leading cause of morbidity and mortality among the elderly. Of all CHD deaths on a yearly basis, 85% occur in those aged 65 years and older (3). In the Framingham cohort, among hypertensive subjects aged 65 to 89 years, approximately 50% of both men and women had a history of CVD, including angina pectoris and myocardial infarction (MI) (4). This review of IHD in the elderly hypertensive patient discusses current recommendations for evaluation and management of coronary risk factors, subclinical CHD, chronic stable angina, and the spectrum of acute coronary syndromes (ACS), which includes unstable angina (UA), non-ST-segment elevation MI (NSTEMI), and ST-segment elevation MI (STEMI). In the spirit of evidence-based medicine, whenever possible, studies in elderly patients have been utilized for recommendations.

However, elderly people and women have been underrepresented in randomized clinical trials. Between 1966 and 1990, published trial enrollment of patients aged 75 years and older averaged 2% (5). This increased to 9% during 1991 through 2000. Similarly, among women, enrollment rose slightly from 20% to 25%. Both represent significant underenrollment when compared with prevalence of disease. For this reason, recommendations are extrapolated from randomized clinical trial data observed in younger patients when necessary. In addition, registry and observational databases, which often contain a wealth of information regarding patients of all ages, are used to support certain recommendations. Finally, although geriatric is a term generally used to define those 65 years and older, further age partitioning is frequently seen in the literature; for example, the youngest-old are defined as those between 65 and 74 years. If clinically important, any differences across “old age” are addressed.

RISK FACTORS IN THE ELDERLY

The elderly continue to comprise a larger and larger segment of the American population as people live longer and the birth rate drops. In the 2000 US Census, nearly 35 million Americans aged 65 years and older (12.4%) were counted (6). By the middle of the 21st century, it is projected this group will number 80 million or 20% of the total population. As the geriatric population grows, an important and controversial issue