Prevalence and Incidence of Cardiovascular Disease in 1160 Older Men and 2464 Older Women in a Long-term Health Care Facility

Wilbert S. Aronow,1,2 Chul Ahn,3 and Hal Gutstein1

1Hebrew Hospital Home, Bronx, New York.
2Department of Geriatrics and Adult Development, Mount Sinai School of Medicine, New York, New York.
3Division of Clinical Epidemiology, University of Texas Medical School at Houston, Houston, Texas.

Background. We report the prevalence and incidence of cardiovascular disease in older men and women in a long-term health care facility.

Methods. The prevalence of hypertension, chronic atrial fibrillation, pacemaker rhythm, coronary artery disease (CAD), thromboembolic stroke, and symptomatic peripheral arterial disease (PAD) and the incidence of new coronary events, thromboembolic stroke, and congestive heart failure (CHF) were investigated in 1160 men, mean age 80 ± 8 years, and in 2464 women, mean age 81 ± 8 years, in a long-term health care facility. Mean follow-up was 46 ± 30 months.

Results. The prevalences of hypertension, pacemaker rhythm, CAD, and thromboembolic stroke were similar in men and women. The prevalence of atrial fibrillation was higher in men (16%) than in women (13%; p = .019). The prevalence of PAD was higher in men (32%) than in women (26%; p = .0001). At the 46-month follow-up, the incidences of new coronary events, thromboembolic stroke, and CHF were similar in men and women.

Conclusions. Older men and women in a long-term health care facility have a high prevalence and incidence of cardiovascular disease. The prevalences of hypertension, pacemaker rhythm, CAD, and thromboembolic stroke and the incidences of new coronary events, thromboembolic stroke, and CHF were similar in men and women. However, the prevalences of atrial fibrillation and of PAD were higher in men than in women.

Cardiovascular disease is the most common cause of death in older persons in a long-term health care facility (1). We report data from a prospective study investigating the prevalence of cardiovascular disease and the incidence of cardiovascular disease at 46-month mean follow-up in 1160 older men and 2464 older women in a long-term health care facility.

Methods

In a prospective study, we investigated the prevalence and incidence of cardiovascular disease in 1160 men, mean age 80 ± 8 years (range 60 to 100 years), and in 2464 women, mean age 81 ± 8 years (range 60 to 103 years), in a long-term health care facility. The 3624 persons were unselected persons 60 years of age and older who were not terminally ill at admission. Of the 3624 persons, 2162 (60%) were white, 950 (26%) were African American, 503 (14%) were Hispanic, and 9 (<1%) were Asian. Follow-up was 46 ± 30 months (range 1 to 196 months).

All 3624 persons had 12-lead electrocardiograms with 1-minute rhythm strips taken at entry into the study, routinely every year, and whenever clinically indicated. Atrial fibrillation was diagnosed from the baseline 1-minute rhythm strips of the electrocardiograms (2). The prevalence of a pacemaker rhythm was also investigated in all 3624 persons (3). Systemic hypertension was diagnosed according to the criteria of the Sixth Joint National Committee (JNC VI) Report on the Detection, Evaluation, and Treatment of Hypertension (4).

Coronary artery disease (CAD) was diagnosed if the person had a documented clinical history of myocardial infarction or electrocardiographic evidence of Q-wave myocardial infarction (n = 1483) or typical angina pectoris without previous myocardial infarction (n = 38). Sixteen of the 38 persons with typical angina pectoris without prior myocardial infarction also had coronary artery bypass graft surgery or percutaneous transluminal coronary angioplasty. New coronary events were diagnosed if the person developed nonfatal or fatal myocardial infarction or sudden cardiac death. Myocardial infarction was diagnosed as previously described (5). Sudden cardiac death was defined as an unexpected cardiac death in a person with heart disease found dead within 1 hour of being clinically stable (6). Persons with fatal primary ventricular fibrillation documented by electrocardiogram were classified as having sudden cardiac death. All coronary events were reviewed by the senior investigator with the physician taking care of the person.

Previous thromboembolic stroke was diagnosed by a neurologist (2). New thromboembolic stroke was diagnosed by a neurologist if a focal neurological event occurred suddenly but without prolonged unconsciousness, nuchal rigidity, pronounced leukocytosis, or bloody spinal fluid (2). The
focal neurological signs of ischemic stroke were explained by loss of function in a restricted area of the brain corresponding to a particular vascular territory. Ischemic stroke was also confirmed by computerized axial tomography in 766 of 787 persons (97%) with thromboembolic stroke.

Symptomatic peripheral arterial disease (PAD) was diagnosed if the person had a documented history of surgery for PAD or if the person had ischemic pain at rest, ulceration or gangrene in an extremity, intermittent claudication, numbness, coldness, cyanosis, or pallor in an extremity, or trophic changes with dry, scaly, and shiny atrophic skin, diminished hair growth, thickened, brittle toenails, or subcutaneous atrophy in an extremity associated with absent or weak arterial pulses (7). Congestive heart failure (CHF) was diagnosed if two criteria were satisfied: (1) pulmonary basilar rales were heard by at least two physicians, including the senior investigator, and (2) pulmonary vascular congestion was present on the chest x-rays interpreted by both an experienced radiologist and the senior investigator (8).

For analyses comparing the two groups of men versus women, chi-square tests were used.

RESULTS

Table 1 shows the prevalences of hypertension, atrial fibrillation, pacemaker rhythm, CAD, prior thromboembolic stroke, and PAD in older men and in older women and, at the 46-month mean follow-up, the incidences of new coronary events, thromboembolic stroke, and CHF. Table 1 also lists levels of statistical significance.

DISCUSSION

The data from the present prospective study showed that the prevalence of hypertension was 60% in women (39% with isolated systolic hypertension and 21% with systolic and diastolic hypertension), mean age 81 years, and 57% in men (37% with isolated systolic hypertension and 20% with systolic and diastolic hypertension), mean age 80 years, in a long-term health care facility. This difference is not significant. The prevalence of a pacemaker rhythm was 5% in the men and 5% in the women in this study. However, the prevalence of chronic atrial fibrillation was significantly higher in the older men (16%) than in the older women (13%) ($p = .019$). The higher prevalence of chronic atrial fibrillation in older men than in older women was present at all ages $\geq 60$ years of age.

CAD is the leading cause of death of older persons in a long-term health care facility (1). The data from the present study showed that the prevalence of CAD was 43% in men and 41% in women and the incidence of new coronary events at the 46-month follow-up was 46% in men and 44% in women. These differences are not significant. There was no significant difference in prevalence or incidence of angina pectoris or myocardial infarction between older men and older women.

Our study also showed that the prevalence of prior thromboembolic stroke was 33% in men and 31% in women and the incidence of new thromboembolic stroke was 23% in men and 21% in women. These differences are not significant. The incidence of CHF was also not significant between older men (29%) and older women (26%). However, older men had a significantly higher prevalence of symptomatic PAD (32%) than older women (26%; $p = .0001$). The significantly higher prevalence of current cigarette smoking in older men (21%) than in older women (9%; $p < .0001$) contributed to the significantly higher prevalence of symptomatic PAD in older men than in older women.

Address correspondence to Wilbert S. Aronow, MD, CMD, Department of Medicine, New York Medical College, 23 Pebble Way, New Rochelle, NY 10804. E-mail: WSAronow@aol.com

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