Underutilization of Aspirin, Beta Blockers, Angiotensin-Converting Enzyme Inhibitors, and Lipid-Lowering Drugs and Overutilization of Calcium Channel Blockers in Older Persons With Coronary Artery Disease in an Academic Nursing Home

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Background. We report the prevalence of use of aspirin, beta blockers, angiotensin-converting enzyme (ACE) inhibitors or angiotensin II type 1 receptor blockers, statins, and calcium channel blockers in older persons with coronary artery disease (CAD) in an academic nursing home.

Methods. We investigated the prevalence of use of aspirin, beta blockers, ACE inhibitors or angiotensin II type 1 receptor blockers, lipid-lowering drugs, and calcium channel blockers in older persons with a mean age of 77 ± 9 years, in an academic nursing home with documented CAD and no contraindications to the use of aspirin, beta blockers, ACE inhibitors or angiotensin II type 1 receptor blockers, and lipid-lowering drugs.

Results. CAD was documented in 77 of 255 persons (30%). Of 77 persons with CAD, 48 persons (62%) were treated with aspirin, 45 persons (58%) with ACE inhibitors or angiotensin II type 1 receptor blockers, 44 persons (57%) with beta blockers, 21 persons (27%) with calcium channel blockers, and 16 persons (21%) with statins. Of the 61 persons with CAD not treated with statins, serum low-density lipoprotein (LDL) cholesterol was measured in only 22 persons (36%) and was increased in 14 of the 22 persons (64%).

Conclusions. These data show underutilization of aspirin, beta blockers, ACE inhibitors, lipid-lowering drugs, and measurement of serum LDL cholesterol and overutilization of calcium channel blockers in older persons with CAD in an academic nursing home.

OLDER persons with coronary artery disease (CAD) should be treated with aspirin, beta blockers, angiotensin-converting enzyme (ACE) inhibitors, and statins if necessary to reduce the serum low-density lipoprotein (LDL) cholesterol to <100 mg/dl (1,2). The American Heart Association/American College of Cardiology guidelines also state that there are no Class I indications for the use of calcium channel blockers in treating persons with CAD (3). We are reporting data from an analysis of charts from all persons aged 59 years or older currently residing in an academic nursing home affiliated with Westchester Medical Center/New York Medical College investigating the prevalence of use of aspirin, beta blockers, ACE inhibitors or angiotensin II type 1 receptor blockers, lipid-lowering drugs, and calcium channel blockers in persons with documented CAD and no contraindications to the use of aspirin, beta blockers, ACE inhibitors or angiotensin II type 1 receptor blockers, and lipid-lowering drugs.

METHODS

All charts of persons aged 59 years or older currently residing in an academic nursing home affiliated with Westchester Medical Center/New York Medical College were analyzed by two geriatrics fellows according to a protocol designed by WS Aronow. The study population included 96 men and 159 women with a mean age of 77 ± 9 years (range 59 to 100 years).

RESULTS

CAD was documented in 77 of 255 persons (30%) with no contraindications to the use of aspirin, beta blockers, ACE inhibitors or angiotensin II type 1 receptor blockers, and lipid-lowering drugs. Of the 77 persons with CAD, 12 persons had prior coronary artery bypass graft surgery, two persons had prior percutaneous transluminal coronary angioplasty, three persons had coronary angiographic evidence of significant CAD without coronary revascularization, 58 persons had a documented myocardial infarction, and two persons had typical angina pectoris without prior myocardial infarction.

Table 1 shows the prevalence of use of aspirin, beta blockers, ACE inhibitors or angiotensin II type 1 receptor blockers, statins, and calcium channel blockers in older persons with CAD currently residing in an academic nurs-
ing home. None of the 49 postmenopausal women (0%) with CAD were receiving hormonal therapy. Of the 61 persons with CAD not treated with statins, only 22 persons (36%) had measurements of serum LDL cholesterol. Fourteen of these 22 persons (64%) had elevation of serum LDL cholesterol that needed treatment with lipid-lowering drug therapy.

**DISCUSSION**

Aspirin is underutilized in older persons with CAD (4–6) and was administered to only 62% of older persons with CAD in the present study. Beta blockers are underutilized in older persons with CAD (7–10) and were administered to only 57% of older persons with CAD in the present study. ACE inhibitors or angiotensin II type 1 receptor blockers (if intolerant to ACE inhibitors) are underutilized in older persons with CAD (11,12) and were administered to only 58% of older persons with CAD in the present study. Lipid-lowering drugs are also underutilized in older persons with CAD (13–15) and were administered to only 21% of persons with CAD in the present study.

Although the American Heart Association/American College of Cardiology guidelines (1) and the Third Report of the National Cholesterol Education Program Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (2) recommend lowering the serum LDL cholesterol in persons with CAD to below 100 mg/dL irrespective of age, serum LDL cholesterol was measured in only 22 of the 61 persons (36%) with CAD not treated with lipid-lowering drugs in the present study. Fourteen of these 22 persons (64%) had elevated serum LDL cholesterol levels that should have been treated with lipid-lowering drug therapy according to recent guidelines (1,2).

Although the American Heart Association/American College of Cardiology guidelines state that there are no Class I indications for treating persons with CAD with calcium channel blockers (3), calcium channel blockers are overutilized in the treatment of older persons with CAD (8,9,16) and were administered to 27% of persons with CAD in the present study. A retrospective analysis of the use of beta blockers after myocardial infarction from 1987–1992 in a New Jersey Medicare population demonstrated that use of a calcium channel blocker instead of a beta blocker doubled the risk of mortality (8).

The data from the present study show that, despite excellent guidelines (1–3), older persons with CAD in an academic nursing home are not receiving appropriate cardiac drugs in 2001. Physician education in journal articles, non-biased lectures, and audits with physician feedback need to be intensified to provide better medical care to older persons with CAD through the use of optimal doses of drugs found to be effective and safe by evidence-based studies.

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