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Progress in Prevention:

Improving Cardiovascular Risk Management Among Human Immunodeficiency Virus–Positive Individuals

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Cardiovascular disease (CVD) is the leading cause of morbidity and mortality in men and women in the United States. Human immunodeficiency virus (HIV) and/or Acquired Immune Deficiency Syndrome (AIDS) as comorbid conditions require special attention by cardiovascular nurses and other clinicians.^{1,2} Recent reports have indicated that the incidence of HIV/AIDS among adults in the United States has increased, although there has been a concurrent decrease in mortality associated with progression to AIDS, associated with effective medication regimes. With the introduction and widespread use of antiretroviral therapy (ART), persons with HIV are living longer, and subsequently the occurrence of CVD is increasing. Moreover, there may be increased risk of CVD in HIV-infected versus uninfected populations.³ In persons with HIV/AIDS, CVD results from a complex interplay of traditional lifestyle factors, metabolic changes associated with highly active ART, and inflammatory responses associated with chronic viral infection.³

The prevalence of CVD among HIV-positive persons has been estimated to range from 28% to 73%, and untreated HIV has been directly linked to atherosclerosis and cardiomyopathy.^{3,4} The clinical cardiovascular consequences of HIV treatment are numerous. Antiretroviral therapy contributes to central adiposity and visceral fat accumulation, insulin resistance, diabetes mellitus, metabolic syndrome, dyslipidemia, atherosclerosis, and myocardial infarction.^{3–5} Recent epidemiological studies have demonstrated a higher incidence of acute myocardial infarction in HIV-positive individuals than among uninfected patients.⁵ Long-term ART use recently has been demonstrated to increase risk of both calcified and noncalcified coronary plaques in asymptomatic patients.⁶

In addition to the direct influence of HIV infection and its associated treatment, modifiable and nonmodifiable risk factors associated with CVD are highly prevalent in the HIV-positive community. The average age of HIV-infected individuals is increasing, and there is a documented higher prevalence of smoking, substance abuse, inadequate or unbalanced nutrition, homelessness, and lack of access to routine primary health care among those

infected with HIV.^{1,5} Risk factors associated with CVD are highly prevalent among HIV-infected populations receiving ART and those not receiving ART. It is important to note that, despite increased risk, CVD can be limited in HIV-infected patients by controlling or modifying the traditional modifiable risk factors.²

Recently published recommendations offer evidence-based guidelines for enhancing screening for CVD risk factors in persons with HIV/AIDS.¹ Recommendations for screening include obtaining family history of CVD, fasting lipid and glucose levels before and during ART, screening for tobacco use at each visit or annually, and obtaining routine measurements of body mass index, body shape changes, waist circumference, and blood pressure. Fasting lipid levels should include high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, and triglycerides. In addition, clinicians are encouraged to use the Framingham Risk Score to calculate global coronary heart disease (CHD) risk.

Prevention strategies for this population also have been published.² Recommendations include use of antihypertensive agents for blood pressure control (noting drug interactions between calcium-channel blockers and protease inhibitors); use of statins, fibrates, fish oil, and niacin for dyslipidemia (noting multiple drug interactions with ART); and use of antidiabetic agents to improve glycemic control, along with lifestyle counseling regarding cigarette smoking, diet, and physical activity. Recommendations are less clear for the use of aspirin, however, despite the increased incidence of thromboembolic events after initiation of ART in this population.

The importance of CVD risk management among those with HIV/AIDS has been emphasized by the recent American Heart Association (AHA) Initiative to Decrease Cardiovascular Risk and Increase Quality of Care for Patients Living With HIV/AIDS.⁷ An online course, offered by the AHA, provides a comprehensive overview of CVD in HIV. The agenda includes the following topics: (1) overview of CVD and HIV infection, (2) CVD risk assessment and diagnosis in HIV infection, and (3) CVD risk management in HIV infection. In spring 2010, the initiative also will kick off a patient education phase to bring awareness and education to HIV patients on their risks for CVD. Cardiovascular nurses will play a leading role in spreading the word about the AHA Initiative to Decrease Cardiovascular Risk and Increase Quality of Care for Patients Living With HIV/AIDS and in improving the cardiovascular care of HIV-positive patients.

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