

Short Communication

Control of hypertension in patients with and without HIV

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Abstract

Patients with HIV may have an increased risk of hypertension, metabolic syndrome and cardiovascular disease. The diagnosis and treatment of HIV patients with hypertension can affect a number of other comorbid conditions, including metabolic syndrome, lipid abnormalities, cardiovascular disease, and diabetes. In patients with HIV are at higher risk for CVD and living to an age where CVD is more common, it will be important to identify ways to better manage and control CVD risk factors in this patient population. In HIV patients who are at a higher risk for CVD, it is necessary to implement measures to better manage and control CVD risk factors in this patient population.

Human immunodeficiency virus (HIV)-infected women have a high prevalence of hypertension and other cardiovascular risk factors (E., deposition of abdominal fat, insulin resistance, metabolic syndrome and abnormal lipid levels). Hypertension is a risk factor for cardiovascular, cerebrovascular, and renal disease. Patients with HIV have a 2-fold increased risk for myocardial infarction compared with those without HIV infection [1-3].

HIV infection may involve the pericardium, myocardium, coronary arteries, pulmonary vasculature, valves and the systemic vasculature. The combination antiretroviral therapy has had a significant influence on the prevalence and severity of the effects on each cardiac structure. Aging, antiretroviral therapy, chronic inflammation, and several other factors contribute to the increased risk of cardiovascular disease in patients infected with HIV [4-5].

Ludema and colleagues reported a longitudinal cohort data from the Women's Interagency HIV Study, 1,130 women living with hypertension with (WLWH) and 422 HIV-uninfected participants who had an elevated systolic or diastolic measurement were insured via Medicaid, were mostly African American and Hispanic. Regarding the characteristics of HIV-uninfected participants observed a lower age and diastolic blood pressure level. And a higher level of systolic blood pressure, waist circumference and BMI. The authors examined in a predominantly low-income group the relationship between health insurance and control of hypertension among women living with HIV and women with risk factors for HIV infection. Among participants living with HIV, comparing the uninsured to those with Medicaid yielded an 18-month BP control risk difference of 0.16. This translates into a number-needed-to-treat of 6; to reduce the caseload of WLWH with uncontrolled BP by one case, 5 individuals without insurance would need to be insured via Medicaid [6].

Other authors in the WIHS cohort have shown that hypertension prevalence is similar between participants living with and without HIV. The increasing age, African-American race, BMI >30 kg/m as associated with increasing prevalence of hypertension, and pregnancy as protective [7].

In a HIV cohort, male sex, higher BMI, older age, higher BP at baseline, high total cholesterol and clinical lipodystrophy, and

not antiretroviral drug class, have been associated with incident hypertension [8].

De Socio and colleagues in a prospective cohort study, with sampling 961 HIV patients (29% woman) and follow-up of 3.4 years evaluated predictors of cardiovascular events and of new-onset hypertension. Hypertension remains highly prevalent (41%) in middle-aged HIV patients, and significantly impacts cardiovascular morbidity. Traditional risk factors and advanced HIV disease predict new-onset hypertension, and the CD4 cell count favorably affects future cardiovascular events [9].

Divala and colleagues in a cross-sectional study of adults (≥18 years, 952 patients, 71.7% female, median age 43.0 years, 95.9% on antiretroviral therapy (ART), median duration 47.7 months) at an urban and a rural HIV clinic in Malawi. Hypertension prevalence was 23.7% (rural 21.0% vs. urban 26.5%; p=0.047), of whom 59.9% had stage I hypertension. Diabetes prevalence was 4.1% without significant difference between rural and urban settings. Among patients in HIV care 26.6% had hypertension and/or diabetes, and in all of these patients 13.0% required concomitant drug treatment for hypertension and / or diabetes [10].

In other study the authors assessed the first documented occurrence of type 2 diabetes mellitus, chronic kidney disease and treated hypertension by age, sex, and race within the North American AIDS Cohort Collaboration. Racial disparities in the occurrence of these diseases emphasize the need for prevention and treatment options for these HIV populations receiving care in North America [11].

Ascher and colleagues examined associations of kidney function and injury with incident hypertension in 823 HIV-infected and 267 HIV-uninfected women in the Women's Interagency HIV Study.

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In HIV-uninfected infected patients, there was a higher prevalence of black patients, concomitantly with a lower prevalence of diabetes and a higher systolic blood pressure increase. HIV-infected women, higher urine albumin-to-creatinine ratio was independently associated with incident hypertension (relative risk =1.13), as was lower estimated glomerular filtration rate (relative risk =1.10). No tubular injury and dysfunction biomarkers were independently associated with incident hypertension in HIV-infected women [12].

Njelekela and colleagues investigated prevalence of hypertension and its associated risk factors in a Highly Active Antiretroviral Therapy (HAART_ naïve HIV-infected population. The prevalence of hypertension was found to be 12.5% and risk of hypertension was 10% more in male than female patients. Patients aged ≥ 50 years had more than 2-fold increased risk for hypertension compared to 30-39-years-old patients. Overweight and obesity were associated with 51% and 94% increased risk for hypertension compared to normal weight patients. Low CD4+ T-cell count was associated with 10% lower risk for hypertension [13].

In an ecological study the authors reported a two-fold increase in HIV prevalence was associated with a 9% increase in age, sex and study year-adjusted prevalence ratio for hypertension, which increased to 16% after adjusting for mortality. Countries with a pronounced HIV burden may also have a higher prevalence of hypertension in this population with potential implications in the economic and health systems [14].

Okello and colleagues describe blood pressure (BP) changes after antiretroviral therapy (ART) initiation and evaluate the association of markers of inflammation with incident hypertension in a cohort of HIV-infected individuals in Uganda. The systolic BP increased by 9.6 mmHg in the first 6 months of ART. Traditional factors with male gender, age, overweight and a CD4 count < 100 cells were associated with incident hypertension. D-dimer levels at month 6 were inversely associated with incident hypertension [15].

Hanna and colleagues examined semiannual trends in hypertension treatment and control, diabetes treatment and control, and smoking quit rates in the Women's Interagency HIV Study. The authors evaluated 1636 HIV+ and 683 HIV- women, with a hypertension prevalence of 40% and 38%, respectively; diabetes prevalence of 21% and 22%; and smoking prevalence of 37% and 48%. Hypertension treatment was higher among HIV+ than HIV- women and increased over time with no difference in trend by HIV status. Hypertension control was greater among HIV+ women and increased over time among HIV+ but not HIV- women. Diabetes treatment was similar among HIV+ and HIV- women and increased over time in both groups. Diabetes control was greater among HIV+ women and did not change over time [16].

In conclusion, patients with HIV seem to have better control of hypertension when they are accompanied by health care.

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