HIV-Related Kidney Troubles Linked to Age, Race, CD4 Count and Tenofovir

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A new study has found that the overall rate of kidney dysfunction was only 3 percent in a group of HIV-positive military personnel, but several factors including older age, African-American race and the use of tenofovir (found in Viread, Truvada and Atripla) increased the risk of developing the condition. The study was published in the June issue of AIDS Patient Care and STDs.

The introduction of potent antiretroviral (ARV) combination therapy in the late 1990s caused a precipitous plunge in the rate of opportunistic infections (OI) and death in people with HIV. Those reductions in OI rates have been sustained, yet during the last decade researchers have noted a rise in diseases not typically associated with HIV, including cardiovascular, liver and kidney diseases.

Before combination ARV treatment was introduced, most HIV-associated chronic kidney problems were tied to low CD4 counts and African-American race. In recent years, other factors, including older age, co-occurring conditions—such as diabetes and high blood pressure, and uncontrolled HIV reproduction—have all begun to be associated with kidney problems.

To assess the prevalence of kidney disease and the factors associated with it in the modern HIV treatment era, Nancy Crum-Cianflone, MD, from the HIV clinic at the Naval Medical Center San Diego, and her colleagues assessed the medical records of 717 HIV-positive military personnel being cared for at naval clinics in San Diego or Bethesda, Maryland.

Most of the study participants were male, and roughly 40 percent were African American. The vast majority, 77 percent, were taking ARV therapy. Of those, 44 percent were on a regimen that included tenofovir. Kidney function was assessed by measuring the estimated glomerular filtration rate (eGFR). An eGFR rate of 60 or greater was considered functional, and an eGFR of less than 60 was considered dysfunctional—the lower the number, the poorer the kidney function.

Crum and her colleagues found several factors associated with kidney dysfunction. These included older age, African American race and tenofovir use. Having a low CD4 nadir, which refers to a person's lowest ever CD4 count, was also associated with a greater risk of kidney dysfunction. Among tenofovir users, African-American race, female gender and a lower CD4 nadir were all associated with a drop in eGFR.

“Further studies are needed to determine if differential guidelines on kidney function monitoring in select HIV populations would be beneficial,” conclude the authors.

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