Addressing Disparities in HIV Mortality: Antiretroviral Therapy Is Necessary but Not Sufficient

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(See the HIV/AIDS Major Article by The Antiretroviral Therapy Cohort Collaboration (ART-CC) on pages 1800–9.)

In this issue of Clinical Infectious Diseases, authors from the Antiretroviral Therapy Cohort Collaboration (ART-CC) have published an important article that examines the influence of geographic origin and race/ethnicity on mortality in patients on antiretroviral therapy (ART) in Canada, Europe, and the United States. The authors focused on each region separately and did not specifically make comparisons between regions. There were 3 key findings reported in the article that warrant further discussion. First the authors found that in the European cohort, immigrants from sub-Saharan Africa, Asia, and non-European Western countries had significantly lower mortality (primarily non-AIDS mortality) compared to native Europeans. The authors concluded that this might result from the “healthy immigrant” effect wherein individuals from developing countries who travel to industrialized countries for work are generally healthier than the general population. This theory assumes that these individuals come from environments where healthy lifestyles habits are common and that these individuals maintain the lifestyles of their country of origin rather than acclimate to the lifestyles of their new home. The validity of these assumptions likely differs based upon the emigrants’ region of origin. For example, whereas emigrants from some parts of Asia may come from environments where healthier lifestyles predominate, sub-Saharan African (SSA) migrants often come from areas with high rates of poverty, obesity, alcohol abuse, and smoking, and may be relegated to similar environments in their new country; thus it is uncertain if their new environment leads to improvement in these factors or deterioration [1, 2]. Additionally, the authors do not explore the impact of other differences between the SSA migrants and Europeans in their cohort. Most notably, the majority of SSA migrants are female (61%), whereas the European group is predominantly male (77%). Males are at higher risk of cancers and accidental death compared to females; thus, this factor should be considered. The SSA group is younger than the European group, a fact that could also contribute to a mortality advantage. In addition, injection drug use as the human immunodeficiency virus (HIV) transmission factor was much higher (17%) among Europeans compared to SSA migrants (<1%). Past data from the ART-CC study and others have documented that injection drug use poses increased risk of both AIDS-related and non-AIDS-related death [3]. Furthermore, the SSA emigrant population is quite heterogeneous, including individuals with varying amounts of financial resources and health challenges [2]. The assumption that the SSA emigrant population is in general “healthier” than the European population seems unlikely. Thus, while the “healthy immigrant” theory is interesting and may partially explain the difference in mortality between the Europe group and the Asia/West group, a deeper dive into this cohort might reveal a clearer picture of the true causes of lower mortality among SSA migrants compared to native Europeans.

More compelling is the second major conclusion from the authors that focuses on the Canadian cohort. The group finds that mortality among First Nations Canadians is higher than that of white Canadians for both AIDS and non-AIDS mortality. The authors conclude that socioeconomic factors and health inequalities are major contributors to this difference. The First Nations community is the largest of several Aboriginal groups in Canada. According to 2006 Canada Census data, 1.2 million people identified themselves as “Aboriginal,” constituting 3.8% of the Canadian population, yet in 2008 they accounted for 8.0% of all prevalent HIV infections [4, 5]. The First
Nations community in Canada has a great deal in common with several US minority populations. Like African Americans, Hispanic Americans, and Native Americans in the United States, First Nations Canadians have disproportionately high rates of HIV disease, drug and alcohol use, poverty, diabetes, and cardiovascular disease compared to white Americans and Canadians. These factors unquestionably contribute to excess mortality in the population in general and in the population of persons living with HIV disease. The inclusion of the Canadian First Nations population in this article is of great importance because it raises the profile of this important group and demonstrates that even in environments with universal access to healthcare services, health disparities remain. Access to healthcare may reduce but certainly does not eliminate the devastating impact of poverty and discrimination on health outcomes.

The final major conclusion from the authors is that African Americans have higher AIDS and non-AIDS-related mortality compared to US whites. This finding is consistent with 2009 data from the Centers for Disease Control that reported a 10-fold difference in HIV mortality comparing US black men to non-Hispanic white men and a 22-fold difference between black women and non-Hispanic white women [6]. Moreover, the ART-CC findings reaffirm the findings from several other studies that have reported persistent racial disparities in HIV mortality in the United States in the ART era [7, 8]. Finally, the notable finding that the US white/African American mortality difference actually increased with increasing time on ART also warrants comment, as one might hope that ART would serve to reduce HIV outcome disparities. Unfortunately, this is not the case. The introduction of ART has served to change a disease that was almost uniformly fatal into a disease that is treatable for those who have consistent access to care and ART, who can consistently stay in care and maintain high levels of adherence, and whose health is not negatively impacted by poverty and/or comorbid conditions. What is clear is that African Americans (and other communities of color and indigent populations) have consistently drawn the short straw in each of these areas. Levine et al demonstrated that the gap in HIV-related mortality between blacks and whites widened after the introduction of highly active ART in 1996 [9]. In that study, socioeconomic status and race were the major determinants of mortality. A recent article by Simard et al examined the influence of sex, race/ethnicity, and education on HIV rates among US adults from 1993 to 2007 [10]. They reported that widespread use of ART has resulted in dramatic declines in HIV-related mortality, but not all groups have benefited equally from the advances in treatment. Absolute declines in HIV mortality were the largest for nonwhites as a result of higher baseline rates, but mortality rates remained significantly higher among blacks compared to whites, particularly in the groups with the lowest levels of educational achievement. Importantly, mortality rates were virtually unchanged for the least educated black women (1993–1995, 29 per 100,000; 2005–2007, 27 per 100,000).

Taken together, the results of this ART-CC analysis remind us that while ART can be life saving, its benefits are often not distributed evenly across racial/ethnic groups in various geographic regions. These data add to the literature documenting widening health disparities in HIV outcomes in the ART era and underscore the need for comprehensive efforts that address healthcare access, ART access, poverty, and racism. Efforts that provide access to HIV treatment without addressing underlying inequalities will continue to fall short of our goal to optimize outcomes in all persons living with HIV disease.

Note

Potential conflicts of interest. The author serves on advisory boards for Bristol-Myers Squibb, Gilead, Merck, Janssen, GlaxoSmithKline, and Viiv Healthcare.

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References