HIV, cardiovascular disease, and stroke in sub-Saharan Africa

Sub-Saharan Africa is facing a growing burden from non-communicable and infectious diseases including HIV infection.1 The therapeutic success permitting people living with HIV to live longer on combination antiretroviral therapy (ART) is being challenged by reported increases in adverse cardiovascular and metabolic disease profiles in these patients.2-5 The growing burdens of cardiovascular diseases and stroke are already beyond the capacities of most health-care systems in Africa.3,6 7–45% of patients with HIV have metabolic syndrome and coronary heart disease.4,5 HIV infection can result in stroke via several mechanisms, including opportunistic infection, vasculopathy, cardioembolism, and coagulopathy.2,4,7 Benjamin and colleagues,9 in a recent study in Malawi, have identified HIV as a significant risk factor for stroke, especially individuals aged 45 or younger. This double burden of disease in the context of limited resources calls for urgent attention in either reinforcing preventive measures to reduce HIV transmission or measures to reduce HIV transmission. In people living with HIV, cardiovascular risk assessment is becoming an important element of care.4

Periodic measurement of fasting blood glucose concentrations and lipid profiles in patients on ART is common practice in most clinical settings. Doing so permits early identification of worsening cardiovascular risk profiles, which ideally would permit easy switching to less aggressive regimens. In resource constrained settings with a significant HIV burden such as sub-Saharan Africa, switching therapies to options with few adverse effects on cardiovascular risk profiles presents challenges on two major fronts. First, the risk benefit-to-ratio in which the general benefits of being on ART outweigh cardiovascular or metabolic risk, and safer drug options generally not always available. Second, trained personnel and resources needed to appropriately identify these risks remain scarce. The ideal management plan is proper coordination of care between HIV specialists and cardiovascular disease specialists.10 This goal is elusive in most health-care facilities in sub-Saharan Africa. Increasing access to drugs with little or no effect on lipid profiles and blood glucose have been proposed.10,11 Though most new ART drugs introduced into the market together should have a favourable metabolic outcome (lipid profiles and blood glucose concentrations), the outcomes or long-term effects of these drugs remain unknown.5 Lake and colleagues1 and Bozzette10 have proposed appropriate lifestyle and behavioural change (exercise, diet, alcohol use, and smoking cessation) and statin use as more realistic and cost effective measures to counteract this increased HIV associated burden of disease in resource constrained regions of the world.10 These lifestyle changes are not always as easy to implement as they might sound.

Evidence supporting increased risk of thromboembolic events in patients with HIV is enormous.2,21 Most young people admitted for stroke are HIV positive.2,21 Systematically screening for HIV in all patients admitted for stroke, especially the young, could be important in making a diagnosis and preventing recurrence. Investigation of the role of low-dose aspirin in people living with HIV might be needed.
Because HIV infected individuals are at increased risk of cardiovascular disease, timely initiation of ART is key in reducing direct HIV related cardiovascular events. Most countries in sub-Saharan Africa might not benefit from the advantages of early initiation of ART because of funding gaps, with most country guidelines still requiring biological thresholds of CD4 counts less than 500 cells per μL to initiate ART. As we enviably await antiretroviral drugs that have little or no long-term effect on metabolic profiles of people living with HIV, education, behavioural change, expansion of HIV screening, early initiation of treatment, and monitoring of cardiovascular and metabolic markers could be the most effective options for now. Early initiation of ART reduces HIV viraemia and associated cardiomyopathy.11

Destigmatisation of HIV screening, early initiation of ART among the infected, and measures to ensure compliance to therapy must continue as public health priorities. Continued efforts by funding bodies and health systems to put all HIV infected people on treatment, or as early as possible, must remain at the top of the agenda for HIV management. Physical exercise, proper diet, stopping smoking, decreasing excessive alcohol should be central to the information, education, and communication packages of clinicians treating HIV/AIDS.5,10 Specific clinical guidelines might be needed on the use of low-dose aspirin and statins (generally unaffordable in sub-Saharan Africa) to reduce the burden of stroke and other cardiovascular diseases like myocardial infarction in people living with HIV.

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Corrections
Ananworanich J, Abrams EJ. Time to prioritise the UNAIDS 90-90-90 targets for infants. Lancet HIV 2016; 3: e241–43—In this Comment, the first line should have read “Progression to AIDS for adults typically takes 5 years in the absence of treatment, but one in three infants will die by age 1 year if untreated.” Reference 1 has also been updated. These corrections have been made as of July 26, 2016.