Commentary: Decline of HIV-2 prevalence in West Africa: good news or bad news?

Serge Eholie and Xavier Anglaret

The HIV pandemic is a continuing global health emergency. At the end of 2005, WHO and UNAIDS estimated that ~40 million people are infected with HIV, with >60% of infections affecting people living in sub-Saharan Africa. The epidemic is very much dominated by infections with HIV type 1 (HIV-1), which was discovered in 1983. In 1987, a second type of virus was identified: HIV type 2 (HIV-2). It rapidly became clear that the epidemic of HIV-2 is limited to relatively few areas, mainly in the Portuguese-speaking part of Africa. The epicentre is located in West Africa, in and around Guinea Bissau.

This second HIV epidemic never developed into a pandemic, and an increasing body of evidence indicates that the epidemic is now on the decline: in the countries that were affected most in the beginning, the prevalence of HIV-2 is decreasing, and this is happening even where HIV-1 is on the increase.1 The article by Schim van der Loeff et al.2 in this issue of the journal adds to this body of evidence by documenting the decline in HIV-2 in The Gambia, a country in the vicinity of Guinea Bissau. During an observation period of 16 years in the sexually transmitted infections (STI) research clinic of the Medical Research Council (MRC) Laboratories near the capital Banjul, the prevalence of HIV-2 infections decreased from 7 to 4% among clinic attendees, while the prevalence of HIV-1 increased from 4 to 18% and that of dual infections remained stable at ~1%. Importantly, these discordant trends do not appear to be explained by changes over time in the population attending the clinic. The study is a good example of the use of prevalence data in high-risk populations to examine trends over time when the prevalence of the infection is low in the general population. In The Gambia, during the period Schim van der Loeff et al.2 studied these patients, sentinel surveys among pregnant women showed only a very slight decrease in the prevalence of HIV-2, from 1 to 0.8% and a slight increase in the prevalence of HIV-1 from 0.7 to 1%. The STI clinic of the MRC in The Gambia has, thus, played the role of a magnifying glass.

A continued decline in HIV-2 would be both bad and good news for Africa. Bad news, because it is preferable to be infected with HIV-2 rather than HIV-1, and, compared with HIV-1, the HIV-2 virus is both less transmissible through the sexual route, less transmissible vertically from mother to child, and less pathogenic, with a slower progression to AIDS.3 In the 1990s, there was controversy over whether infection by HIV-2 would protect against HIV-1 and whether the HIV-1 epidemic would, therefore, slow down in the regions affected by HIV-2.3,4 Unfortunately, the study by Schim van der Loeff et al.2 indicates that this will not be happening. The good news relates to antiretroviral therapy: the presence of the two viruses in the same region complicates therapy. Even if those infected by HIV-2 progress more slowly towards AIDS, they develop the same opportunistic infections and cancers as those infected by HIV-1 as soon as their immune system becomes compromised.1 These patients also eventually reach the stage when they need highly active antiretroviral therapy (HAART). However, HIV-2 is naturally resistant to non-nucleoside reverse transcriptase inhibitors (NNRTIs), the class of drugs that plays a key role in HAART regimens in sub-Saharan Africa. Regimens based on NNRTIs are easier to take, less expensive, and better suited to a context where tuberculosis is the most common opportunistic illness than their competitors, the protease inhibitors (PIs). The fact that NNRTIs cannot be used in patients infected with HIV-2 has two harmful consequences: first, the need to discriminate between the two viruses before prescribing a treatment calls for more complicated and more costly testing algorithms, and second, the need for more expensive regimens that are more difficult to manage. From this point of view, the gradual disappearance of HIV-2 will simplify the task of HIV treatment programmes in the affected areas.

The good news at the level of treatment programmes should not, however, be allowed to translate into bad news for the individuals infected with HIV-2. These patients suffer from a terrible handicap: they are in the minority. The small number of people infected with HIV-2 globally, and their concentration in Africa where cohort studies and clinical trials are more difficult to conduct than elsewhere, has immediate consequences: a limited amount of clinical data on the response to and long-term outcome of antiretroviral treatment of HIV-2.

For example, the mechanisms of acquisition of resistance to antiretroviral drugs differ between HIV-1 and HIV-2.5,6 The NNRTIs might not be the only drugs that one should avoid in patients infected with HIV-2. Indeed, serious doubts exist regarding the efficacy of certain drugs from other classes.5,7–9 However, there is a lack of data that would allow us to translate these doubts into much-needed evidence about the most appropriate HAART regimens for patients with HIV-2 and patients dually infected with HIV-1 and HIV-2. Independently of future trends in the epidemiology of HIV-2, efforts should continue to establish cohort studies and conduct clinical trials in HIV-2-infected patients with the aim of improving the prognosis of patients who have the same right to evidence-based health care as other patients.
References