Better to know: the importance of early HIV diagnosis

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Early diagnosis is key to successful treatment of HIV. Before the advent of highly active antiretroviral therapy (HAART) in 1996, HIV infection almost always resulted in a decline in immune function leading to opportunistic infections and early death from AIDS. The situation now is very different for people living with HIV who are on HAART. One pill a day can suppress the virus and near normal life expectancy is possible.[1] However, this biomedical success story has many caveats. Findings of the START trial[2] showed that morbidity and mortality is high when treatment is delayed. In recognition of this, the UK and other international HIV treatment guidelines recommend that ART be started immediately after diagnosis.

The study by Sara Croxford and colleagues[3] reported in *The Lancet Public Health* documents mortality and causes of death in people diagnosed with HIV in the UK between 1997 and 2012. This study is important because it is based on national surveillance of people diagnosed with HIV who accessed care in the UK National Health Service (NHS). Previous studies in high-income countries reported mortality in the HIV positive population to be between 1·2 and 4·2 times higher than in the general population, but results were based on clinical cohorts of treated patients. Croxford and colleagues[3] included people from diagnosis and therefore counted deaths in people who did not start treatment and noted nearly six times higher mortality in the HIV-positive population compared with the general UK population. The investigators explored two important explanations for this high mortality: the effect of late diagnosis and the causes of death.

With regards to late diagnosis, until 2015 UK HIV treatment guidelines recommended that ART be started in HIV patients who had CD4 counts, a marker of immune function, lower than 350 cells per mm^3. Therefore, late diagnosis was defined as having a CD4 count lower than 350 cells per mm^3 within 3 months of diagnosis. During the study by Croxford and colleagues,[3] 61% of women and 51% of men were diagnosed late. Mortality was 24 times that of the UK population in the first year after diagnosis, dropping to 2·8 times thereafter.[3] There is an urgent need to increase testing rates to reduce late diagnosis, especially in primary care settings where opportunities might be missed to detect primary infection as a flu-like illness or to screen for HIV when other blood tests are being done.[4] General practitioners are advised to test for HIV if patients have an HIV indicator disease (a list of 39 disorders associated with HIV infection listed in the British HIV Association guidelines); however, barriers have been reported to implementing this guideline.[5] High-risk individuals, such as men who have sex with men, are recommended to test frequently. Evidence suggests that proactive recall can increase re-testing rates for HIV in both heterosexuals and men who have sex with men attending clinics for sexually transmitted disease screening.[6] Home testing using kits supplied via the internet might afford more opportunities for early diagnosis.[7] Research is needed to investigate ways of optimising linkage to care after a positive result. Among those who died in the reported study, nearly a quarter were not linked to HIV outpatient care, and a third of those who did link to care never received ART.[3] Linkage to care is a crucial step in the cascade of care and needs to be made as easy as possible with good communication between place of diagnosis, which is often a sexual health clinic, and HIV clinic. Retention in care can be enhanced by reminders to attend clinic, adherence counselling, and addressing mental health, psychosexual and social care needs, as well as physical care.

Second, the causes of death shed light on the problems faced by people living with HIV. Perhaps unsurprisingly the major cause of death is still AIDS. Excess of deaths classified as non-AIDS infection likely reflects the imperfection of the list of AIDS defining disorders; these bacterial infections thrive in people with immune deficiency and are directly HIV-related. Deaths due to suicide and overdose are potentially avoidable and suggest the need for improved mental health care, de-stigmatisation of HIV infection, and harm reduction programmes for those who use recreational drugs. Excess liver-related mortality in people who inject drugs (currently or historically) might be due to the recreational drugs themselves or alcohol, but in many cases is caused by co-infection with hepatitis C. Testing for hepatitis C and treatment with very effective new direct acting antivirals should be standard of care for HIV-positive individuals to ensure reduction in liver-related morbidity and mortality.

In the UK, HIV care after diagnosis is provided for free and is excellent as assessed by Public Health England.[8] Much progress has been made, with mortality in 2008–12 half that in 1998–2002,[3] but further improvements in testing and prevention are needed to reduce undiagnosed infection, incidence, late diagnoses, and ultimately deaths due to HIV. The public health community must also be mindful that immigrant populations, especially those from countries where HIV is endemic, experience a disproportionate burden of HIV, delayed diagnosis, and poorer access to ART throughout Europe.[9] Preventive measures targeting these vulnerable populations are important as a substantial proportion of HIV acquisition occurs after their arrival in Europe.[10] Ongoing monitoring of the public health response to national HIV epidemics using surveillance data from routinely collected laboratory and clinic data and linkage to death registries remains very important.[11]

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