HIV clinical trial looks at potential benefits of treating recently-infected patients

November 30 2010

These are AIDS ribbons marching. Credit: Stevie Taylor, Wellcome Images

For most people in high-income countries HIV is considered a chronic illness which can be managed with medication. But the virus still causes extensive damage to the immune system, and treatment with antiretrovirals is a lifelong commitment. Once started, usually within three to five years following infection, the course of treatment needs to be strictly followed and taken for life.

A Wellcome Trust-funded clinical trial is examining whether it is possible to limit damage to the immune system by treating people soon after they are infected with HIV with a short course of antiretroviral drugs and therefore delay the time to commencing long-term

antiretroviral treatment.

The clinical trial study, known as SPARTAC (Short Pulse Anti Retroviral Therapy at HIV Seroconversion), is following 371 individuals, recruited in eight countries across four continents. The trial, which began recruiting at the end of 2004, is due to be completed this month, with the results announced in 2011. If positive, the findings could have a major impact on how HIV is managed worldwide.

During the first few months following infection, the immune system recognises the infection and produces antibodies in an attempt to eliminate the virus. Unless tested, most people will be unaware that they have been infected. However, the immune system never successfully clears the HIV virus. Instead, the virus hides away, slowly weakening the body's defences and destroying CD4 cells, which play a key role in the infected person's immune response.

When the number of remaining CD4 cells falls below a certain level – 350 cells per cubic millimetre – an individual needs to begin treatment with antiretroviral drugs. These drugs prevent the virus from doing further damage to the immune system. Without antiretrovirals, the immune system becomes so compromised that the individual is at high risk of developing life-threatening infections.

Several small studies have suggested that treatment during the first few months of infection could potentially alter the rate of immune damage and so delay the need to go onto lifelong treatment. This hypothesis has not yet been tested in a large enough study to definitively answer this question.

Researchers at Imperial College London, together with colleagues from the Medical Research Council Clinical Trials Unit and the University of Oxford, have been conducting the SPARTAC trial to test this

hypothesis. The trial has been conducted in collaboration with investigators across the UK and Ireland, Uganda, South Africa, Australia, Brazil Italy and Spain.

"Antiretroviral drugs are effective at treating HIV, but can have unpleasant side effects, and once started must be taken for life," explains Dr Sarah Fidler, who leads the Imperial College London research trial. "From the patient's perspective, the longer we can postpone life-long treatment, the better. Plus, it could also mean a more cost-effective treatment over a person's lifetime so it would be a win-win situation."

If the findings prove positive, it will be crucial for doctors to treat the disease at this early stage even if only for a short time. This means, however, that an individual would need to be tested and diagnosed within weeks of infection. Dr Fidler believes that this approach will strengthen the call for more widespread testing for HIV. But even if the trial shows that a short course of antiretrovirals has no effect, she says, routine testing would still be beneficial.

"Around one in four infected people in the UK do not know they are infected, and will seek care and start treatment, at a later time than that recommend by the treatment guidelines. Routine testing, for example when a person is admitted to hospital, would help us diagnose the disease earlier, offering better treatment options.

"What's also particularly important about diagnosing people at this early stage when their viral load is at its highest making them highly infectious, is that it gives the infected individual a chance to modify their sexual behaviour to help prevent the spread of HIV to others."

The trial has been undertaken in both high-income and resource-poor settings and across all the key different risk groups: heterosexuals, men who have sex with other men, and African women. If shown to have an

impact, the findings will therefore be acceptable and feasible globally, although conflicting health care pressures may make implementation variable.

Provided by Wellcome Trust