

CD4 count at time of diagnosis improves retention in care

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Patients attending an urban primary health care clinic in the inner city of Johannesburg who got a CD4 cell count at the time of HIV diagnosis and were eligible for ART were more than twice as likely to start treatment within 3 months of diagnosis as those who received their results 1 week after diagnosis. However, among patients not yet eligible for treatment, having to return to the clinic for a CD4 count 1 week later resulted in significantly better retention in care.

Furthermore, even with immediate provision of CD4 results, one-third of those eligible for treatment did not come back to the clinic to start treatment within 3 months.

Mamsallah Faal and colleagues report their findings from a randomised study published in the advance online edition of the *Journal of Acquired Immune Deficiency Syndromes*.

South Africa, with close to six million people living with HIV, now has the largest antiretroviral treatment programme in the world, with an estimated 1.4 million on treatment by May 2011.

Achieving the government's goal of providing comprehensive care to 80% of people living with HIV and their families by the end of 2011 necessitates a service that includes early diagnosis of HIV, enrolment and retention in care with prompt access to ART for those who need it.

The continued loss to follow-up from pre-ART care and poor retention in care before starting ART makes meeting these targets especially challenging for health planners. People present late for treatment with low CD4 cell counts, resulting in high death rates within the first year.

Other factors contributing to loss to care include distance to the health centre, a history of TB treatment, being male, stigma and denial of HIV status.

The process of getting treatment further contributes to the loss. The authors cite a study where only 45% of (7 005) newly diagnosed patients presented for CD4 testing, of which 50% were eligible for ART but only a third started.

In South Africa CD4 testing is done through centralised laboratories and results are available within a week.

In inner-city Johannesburg approximately 1 300 people go for HIV testing every month,

of whom 30% test positive. However, only 55 - 65% return for their CD4 results.

Getting a CD4 result immediately after HIV diagnosis has been proposed as a means to simplify the process and reduce the time lag between diagnosis and treatment, so improving enrolment in care and treatment outcomes.

The authors undertook a three-arm study at the Esselen clinic, an urban primary health care clinic in the inner city of Johannesburg. Patients who were undergoing HIV testing and counselling were randomised to one of three care pathway arms if their test result was positive:

- a CD4 cell count result delivered immediately after the HIV diagnosis
- a leaflet explaining the care pathway given at the time of diagnosis, with a request to return for the CD4 cell count result 1 week later
- standard of care: request to return for the CD4 cell count result 1 week later.

Patients were considered eligible for immediate antiretroviral treatment if they had a CD4 count at or below 215 cells/mm³, since a count at this level would imply that the CD4 cell count would fall below 200 (the threshold for treatment initiation in South Africa at the time the study was conducted) by the time pre-ART preparation had been completed.

Of the 344 HIV-infected patients in the study 65% were female, median age 30, over a third reported full-time employment and over three-quarters lived locally (within a 10-km radius). Over 60% were first-time testers, of whom 84% were self-referrals (walk-in and not referred by a health care worker).

The median baseline CD4 cell count for the cohort was 300 cells/mm³ (IQR: 168 - 473) and for the third eligible for ART the median CD4 cell count was 122 cells/mm³ (IQR: 60 - 174).

Forty-seven per cent of those who received an immediate CD4 result and who were eligible for treatment reported for further care, compared with 33% of those who followed the standard care pathway ($p=0.011$). Patients who received an immediate result were 2.6 times more likely to start antiretroviral treatment within 3 months of diagnosis ($p=0.0004$).

However, in those not eligible for ART, receiving a CD4 result immediately after HIV diagnosis did not increase the numbers in pre-ART care. Indeed, among those not yet eligible for ART, the patients in the standard of care arm who had to return for their results were almost twice as likely to seek further care (RR 1.98, 95% CI: 1.42 - 2.7, $p=0.0002$).

As in other studies, reporting for continued care increased with age.

Close to one in two patients (49%) did not collect their CD4 results 1 week after HIV diagnosis, underscoring the extent of pre-ART losses.

Nonetheless, even when knowing their CD4 count at the time of testing, only 65% of those eligible for ART presented for treatment, and for those not eligible, only 40% enrolled for monitoring at the pre-ART site.

Limitations include patients lost to follow-up who may have accessed care elsewhere since newly diagnosed patients are not assigned unique identifiers so cannot be traced.

The cost-effectiveness of providing CD4 counts immediately after HIV diagnosis was not assessed since the focus was the effect of this intervention on patient care. Such an analysis is essential for effective decentralisation of CD4 diagnostics.

The authors conclude 'with the likely expansion of HIV-infected numbers after the HIV counselling and testing campaign [in South Africa], research priorities will need to be targeted at understanding factors that can improve engagement in pre-ART care as well as developing evidence-based models for pre-ART care. Underpinning all ... is the urgent need for unique identifiers for HIV-infected patients so monitoring efforts of how and when patients are accessing care are better informed.'

Faal M, et al. Providing immediate CD4 count results at HIV testing improves ART initiation. *JAIDS* advance online edition, doi: 10.1097/QAL.0b013e3182303921, 2011.