AIDS BRIEF

Point-of-care CD4 test improves retention and treatment initiation in Mozambique

Keith Alcorn

The use of a point-of-care CD4 cell count test dramatically reduced the rate of loss to follow-up among patients diagnosed with HIV at clinics in Mozambique and doubled the number of patients who started treatment, according to findings from an observational study recently published in *The Lancet*.

The loss from care of patients diagnosed with HIV in sub-Saharan Africa is alarmingly high. A systematic review of losses to follow-up has estimated that up to two-thirds of patients diagnosed with HIV fail to stay in care long enough to start antiretroviral treatment. High rates of loss to follow-up have also been observed in the first year after starting treatment.

A number of research groups have reported that losses to follow-up are particularly high between diagnosis with HIV and staging for treatment eligibility, based on the results of a CD4 cell count. For example, a study from South Africa showed that almost half of patients diagnosed with HIV disappeared from care before they received the results of a CD4 cell count.

Once these patients are lost to care they tend not to return to the health care system until they are seriously ill, by which time the human and financial resources required to treat them will have grown enormously. Late presentation for care greatly increases the risk of death.

One approach to reducing loss to follow-up is to try to identify patients in immediate need of treatment at the time of their HIV diagnosis, and to fast-track these patients into care.

A study in South Africa found that among those eligible for treatment, receipt of a CD4 count at the time of HIV diagnosis doubled retention in care when compared with returning for a CD4 test result one week later. But in patients not yet eligible for treatment, it was the group who had to return for their CD4 test result one week later who had better retention in care.

Point-of-care CD4 tests which can give results within half an hour are being developed, both to expand access to CD4 testing and to speed up processes within clinics.

UNITAID, the international drug purchase fund for HIV, sponsored an observational study to determine the impact of a promising point-of-care CD4 test on retention in care. The study was carried out at four primary health care clinics in Mozambique which reflected a cross-section of urban and rural health care facilities. The study was also supported by Absolute Return for Kids.

The study recruited 1 021 patients in two waves of approximately equal numbers. The first wave received CD4 test results according to standard procedure, with patients asked to return to the clinic when the results were available. After installation of point-of-care testing equipment and training of staff the second wave of participants received results of a point-of-care CD4 test at the same visit at which they were diagnosed with HIV.

After the introduction of point-of-care CD4 tests, the proportion of patients lost to follow-up declined significantly, from 64% to 33% (adjusted odds ratio 0.27, 95% confidence interval (CI) 0.21- 0.36). This reduction was attributable to a reduction in losses prior to staging people for treatment eligibility; once patients had been assessed for treatment eligibility, there was no significant difference between CD4 testing methods in the rate of loss to follow-up.

Patients also started treatment quicker after point-of-care CD4 testing was introduced. The median time from enrolment in care to starting treatment fell from 48 days to 20 days ($p<0.0001$). However, this decline was largely driven by the reduction in time between enrolment and CD4 staging rather than any speedier access to treatment once a CD4 count had been given.

Although point-of-care testing was intended to be done at the same clinic visit as HIV diagnosis, only 30% of tests actually took place on the same day; 22% took place the following day and 90% of all tests had taken place within five days of diagnosis. Altogether, only 21% of patients were diagnosed with HIV and staged for treatment eligibility on the same day, in part because HIV diagnosis, testing and staging were carried out at three different locations within the clinic site, leading some patients to defer their CD4 test owing to the waiting time involved. However, same-day staging did not significantly improve the retention rate.

The lack of effect of earlier CD4 staging on treatment initiation rates is hard to explain, but the authors note that after receiving a CD4 test result, patients eligible for antiretroviral treatment were expected to visit the clinic several times for counselling and laboratory tests before they received any medication.

Indeed, it is clear that investments of time and money for improvements at one stage of

the cascade from HIV diagnosis to treatment initiation may have limited impact if the whole chain of care is not addressed.

The authors stress that the generalisability of their findings are limited by the observational and non-randomised nature of the study, and by potential differences in clinic practice and record keeping over time.

A related study presented at the 2011 International AIDS Society conference showed that for Mozambican clinics with a large number of patients, especially those which do not have any laboratory access, the point-of-care CD4 test would be cost-effective.

Jani IV, et al. Effect of point-of-care CD4 cell count tests on retention of patients and rates of antiretroviral therapy initiation in primary health clinics: an observational cohort study. The Lancet, advance online publication, 26 September 2011, doi:10.1016/SO140-6736(11)61052-0.

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