

Background

WHO clinical staging contributes to antiretroviral (ARV) initiation decisions in resource poor settings, particularly those without access to facilities to perform CD4 counts. South African and WHO guidelines on the provision of ARVs refer to clinical staging when determining eligibility for ARVs. Both sets of guidelines recommend adults in stage 4 should receive ARVs irrespective of CD4 count. In addition, WHO guidelines recommend that patients with advanced stage 3 disease should be started on ARVs.

We compare CD4 count with routinely performed clinical staging in patients attending two primary care clinics, one in Soweto and the other in rural Limpopo Province. Care is provided by nurses with assistance from doctors.

Components of care include:

- Screening and preventive treatment for TB
- Cotrimoxazole preventive treatment
- Symptom screening for STIs and RPR test
- Family planning and cervical cytological screening
- CD4
- Treatment of HIV related ailments
- Referral for ARVs

Aims

To assess:

1. Whether WHO Clinical Staging identifies all patients who should be accessing ARV treatment
2. Predictors for clinical stage 1 and 2 in adults with CD4 counts of less than 200

Methods

- Cross-sectional study enrolling participants attending primary care HIV clinics in Soweto and Tintswalo Hospitals
- Clinical stage and demographics, collected at a baseline visit were linked with CD4 count performed within 90 days of the baseline visit
- In Soweto, staging is performed exclusively by primary health care nurses (PHCN) and at Tintswalo hospital by PHCNs and doctors
- Clinical data is abstracted from medical records and from an electronic laboratory database
- IRB approval obtained from the University of Witwatersrand

Results

All patients at both sites N=2072

WHO Clinical stage	Median CD4 (IQR)	% ≤200
One (790)	344.5 (208 - 552)	23.9
Two (380)	223.5 (129 - 382)	46.1
Three (836)	152.5 (62 - 279)	62.2
Four (66)	110.5 (34 - 351)	59.1

Urban Site N=1509

WHO Clinical stage	Median CD4 (IQR)	% ≤200
One (707)	339 (199 - 525)	25.0
Two (248)	194 (123 - 370.5)	50.4
Three (527)	154 (67 - 279)	62.4
Four (27)	176 (28 - 450)	51.8

Rural site N=563

WHO Clinical stage	Median CD4 (IQR)	% ≤200
One (83)	413 (267 - 615)	14.5
Two (132)	270 (143 - 420.5)	37.8
Three (309)	147 (56 - 279)	61.8
Four (39)	105 (51 - 327)	64.1

Multivariate analysis for CD4<200 (stage 1 or 2 only)

	Adjusted OR (95%CI)
Age (years)	1.2 (1.04-1.5)
Gender (Female v Male)	0.5 (0.4-0.9)
Site (Rural v Urban)	0.7 (0.4-1.1)
Smoker (Yes v No)	0.9 (0.7-1.3)
Income (ZAR/100)	0.99 (0.98-1.01)

In addition a weak experience/learning effect was found when earlier time periods during which participants were enrolled were compared with later time periods.

Conclusions

- Approximately half of patients, in this operational study, judged to be in WHO clinical stage 2 and a quarter of stage 1 patients would qualify for ARVs based on low CD4 counts but would not receive them if WHO staging 3 and 4 were used exclusively to determine ARV eligibility
- Males have difficulty in accessing care and when they do, it appears that they are more likely to be in stage 1 or 2 with a CD4<200
- It appears that CD4 counts are a valuable adjunct to clinical staging when determining who should receive ARVs

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- Staff at Rixile and Tshisimane wellness clinics who treated the patients and collected the data.
- Patients whose data was used in the study