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Factors associated with Treatment failure in Adults attending South African public sector antiretroviral services

Background

National antiretroviral treatment (ART) guidelines comprising two first-line regimens (3TC/d4T/EFV (1a); 3TC/d4t/NVP (1b)) and a second-line regimen (AZT/ddI/LPV/r) were introduced in South Africa in 2004. Patients with treatment failure to first-line regimens are subject to intensified adherence counseling, and thereafter changed to second-line regimens if signs of failure continue.

Objective

To investigate key factors associated with treatment failure of first-line ART regimens in the South African public sector.

Method

Records of patients with treatment failure (virologic, immunological and/or clinical) on first-line drug regimens at four public sector ART service points in Durban were reviewed retrospectively in March 2007.

Results

Of 5462 adults commenced on first-line ART, only very few (n=25; 0.46%) experienced treatment failure and were switched to second-line ART. Fifty six percent of these patients had commenced on regimen 1a. The majority of patients with treatment failure were female (68%) with a median age of 36 years (range: 25-52 years). The median CD4 lymphocyte count was 68 x 10^6 cells/l at initiation of treatment (range: 1-199); 135 x 10^6 cells/l at six months (range: 65-563) and 176 x 10^6 cells/l at failure (range: 1-430). The median viral load count was 49500 copies/ml at baseline (range: 400-750000); 45000 copies/ml at 6 months (range: 230-750000) and 33060 copies/ml at failure (range: 1000-280000). The mean length of time from initiation of ART to commencement of second line regimens was 20 months (range: 11-58 months). The proportion of patients on second-line ART at facilities ranged from 0.1-1.4%. Forty eight percent of patients had a history of TB. The most commonly occurring side-effect to first-line ART was peripheral neuropathy (44%). Common factors contributing to first-line failure included non-adherence (56%), treatment interruptions (44%) and incorrect or sub-therapeutic dosing (12%). One patient is currently being monitored for resistance to regimen 2.

Forty four percent of patients (n=11) had been initiated on ART in the private sector which often could not be sustained, hence treatment interruptions occurred in 82% of this group. Eighteen percent of private sector initiated patients had been commenced on dual therapy (d4t/ddi) and twenty seven percent had been commenced on ddi/d4t combinations with either efavirenz or nevirapine.

Conclusions

The South African public sector multi-disciplinary team approach to ART appears to be effective. More stringent control of eligibility for commencement of ART in the private sector together with monitoring of adherence counseling quality and standards for ART patients is indicated in South Africa.

Table 1: Initiation of drug treatment in patients with treatment failure

Drug treatment at initiation	Number of patients (%)	Private/public sector (n)
3TC/d4t/EFV	14 (56%)	Private (2) / public (12)
unknown	4 (16%)	Private (2) / public (2)
d4t/ddi	2 (8%)	Private
ddi/d4t/NVP	2 (8%)	Private
3TC/AZT/NVP	1 (4%)	Private
3TC/AZT/LPV/r	1 (4%)	Private
ddi/d4t/EFV	1 (4%)	Private

Figure 1: Median CD4 of patients with treatment failure

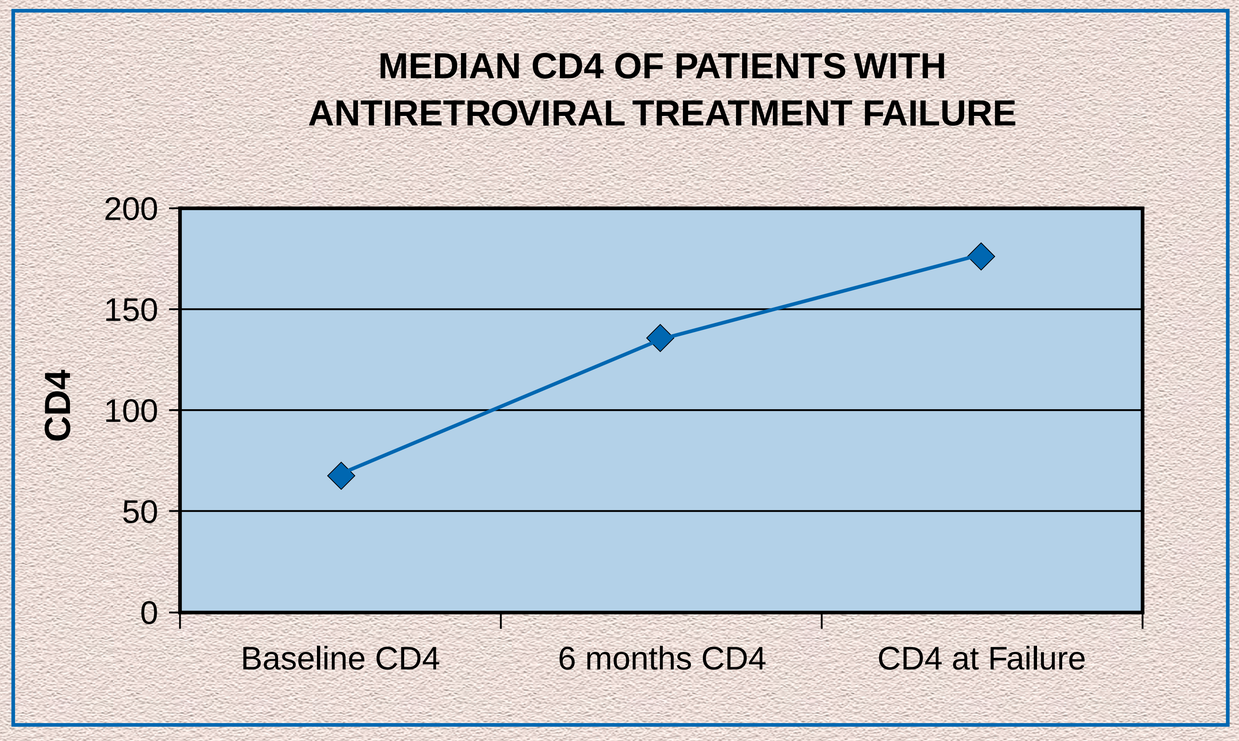
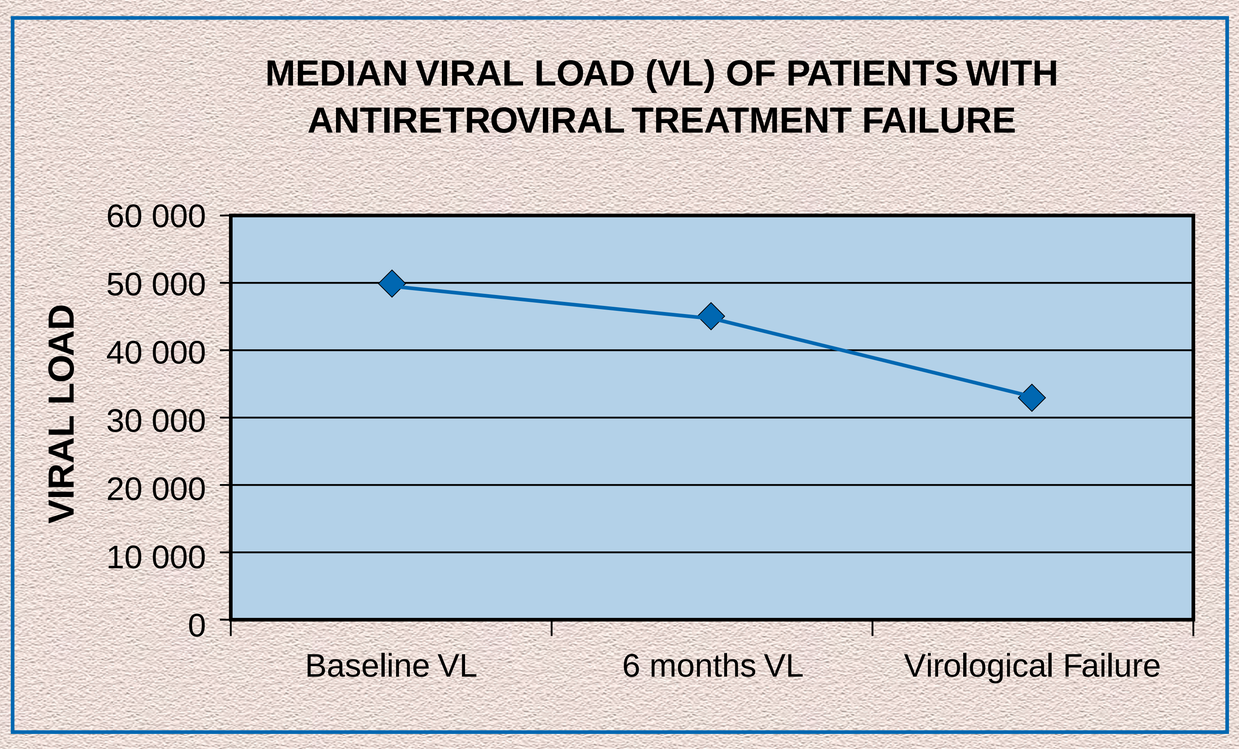


Figure 2: Median viral load of patients with treatment failure



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