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## Intensive adherence counselling for HIV-infected individuals failing second-line antiretroviral therapy in Johannesburg, South Africa.

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#### Abstract

**OBJECTIVE:** In resource-limited settings, where genotypic **drug** resistance testing is rarely performed and poor adherence is the most common reason for **treatment** failure, programmatic approaches to handling **treatment** failure are essential. This study was performed to describe one such approach to adherence optimisation.

**METHODS:** This was a single-arm study of patients on second-line protease inhibitor (PI)-based antiretroviral **therapy** (ART) with a HIV-1 RNA  $\geq 400$  copies/ml in Johannesburg, South Africa, between 1 March 2012 and 1 December 2013. Patients underwent enhanced adherence counselling. Those with improved adherence and a repeat viral load of  $>1000$  copies/ml underwent HIV-1 **drug** resistance testing. We describe results using simple proportions and 95% confidence intervals.

**RESULTS:** Of the 400 patients who underwent targeted adherence counselling after an elevated viral load on second-line ART, 388 (97%) underwent repeat viral load testing. Most of these ( $n = 249$ ; 64%, 95% CI 59-69) resuppressed ( $<400$  copies/ml) on second line. By the end of follow-up (1 March 2014), among the 139 (36%, 95% CI: 31-41%), who did not initially resuppress after being targeted, 106 had a viral load  $>400$  copies/ml, 11 switched to third line, 5 were awaiting third line, 4 had died and 13 were lost to follow-up. Among the unsuppressed, 48 successfully underwent resistance testing with some resistance detected in most (41/48).

**CONCLUSIONS:** Most (64%) second-line **treatment** failure in this clinic is related to adherence and can be overcome with careful adherence support. Controlled interventions are needed to determine what the optimal approach is to improving second-line **outcomes** and reducing the need for third-line ART.

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**KEYWORDS:** Afrique subsaharienne; HIV genotyping; antiretroviral **therapy**; fallo en el tratamiento; fallo virológico; genotipaje del VIH; génotypage du VIH; inhibidor de proteasas; inhibiteur de protéase; lopinavir; protease inhibitor; second-line antiretroviral **therapy**; sub-Saharan Africa; third-line antiretroviral **therapy**;

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