HIV viral load monitoring in four West and Central African Countries: how is virological failure managed by caregivers in the OPPERA project ?

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BACKGROUND

- Since 2013, WHO recommends HIV viral load testing (VLT) as the preferred marker to monitor efficacy of antiretroviral therapy (ART) [1] . Routine VLT is associated with more 2nde line ART switching in comparison with CD4 monitoring [2].
- The OPP-ERA project is funded by UNITAID and conducted by a French consortium (Solthis, ANRS, Sidaction and Expertise France).
- The OPP-ERA project is being implemented in Burundi, Cameroon, Côte d'Ivoire and Guinea since March 2013. It aims to improve the monitoring of people living with HIV/AIDS (PLHIV) through an increased access to viral load testing, with the implementation of open polyvalent platforms (OPP), an innovative system of molecular biology techniques for laboratories.
- Patients on ART need viral load monitoring
  - to check treatment success: undetectability of viral load
  - WHO recommendations include that patients with VL above 1000 copies/mL should be counselled to reinforce ART adherence and VL be retested after 3 to 6 months [1].
  - Patients with a second VL remaining above 1000 copies/mL need a switch to a second line of ART.

OBJECTIVE

The aim of this study is to document the implementation of WHO recommendations for viral load testing in patients with viral load failure.

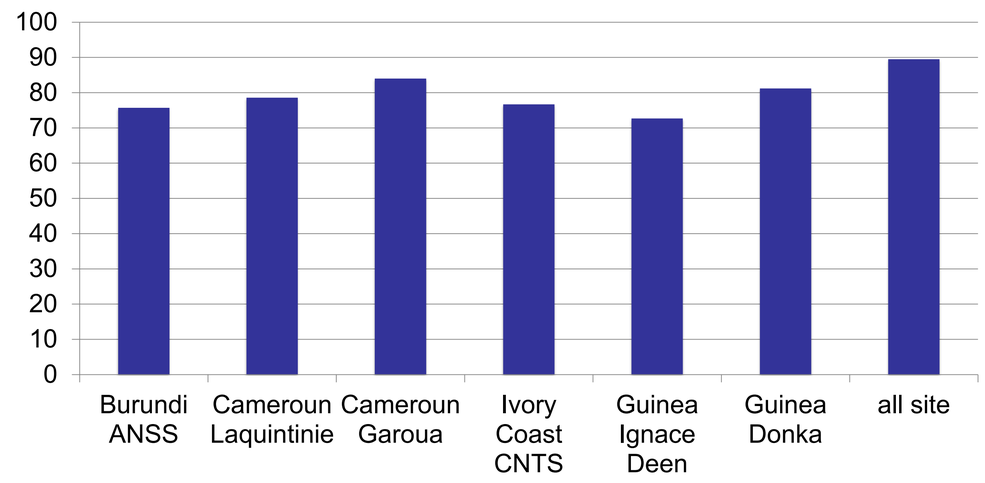
METHODS

- Retrospective analyses of database of 6 laboratories located in Burundi, Cameroon, Ivory Coast and Guinea from August 2014 to March 2016
- All labs are implemented with the same OPP and use the same reagent (Generic HIV®, Biocentric, Bandol, France)
- Each database includes repeated measures of viral load collected during the first 20 months of the project among people living with HIV (PLWH) receiving ART followed in OPP-ERA laboratories. Other information collected: date of sampling, age, gender, ART regimen (1st or 2nd line), date of ART initiation. No clinical data, no data concerning adherence and no data concerning ART switch are available in this database.
- Virological failure was defined by VL>1000 cp/mL.
- The analysis were restricted to patients with first VL measurement > 1000 cp/mL at enrolment in OPP-ERA
- We analysed data from patients followed in the main health care facilities linked to each OPP-ERA laboratory and in other health care facilities
- Stata 11.0 was used for analysis. Chi square test were used for group comparison.

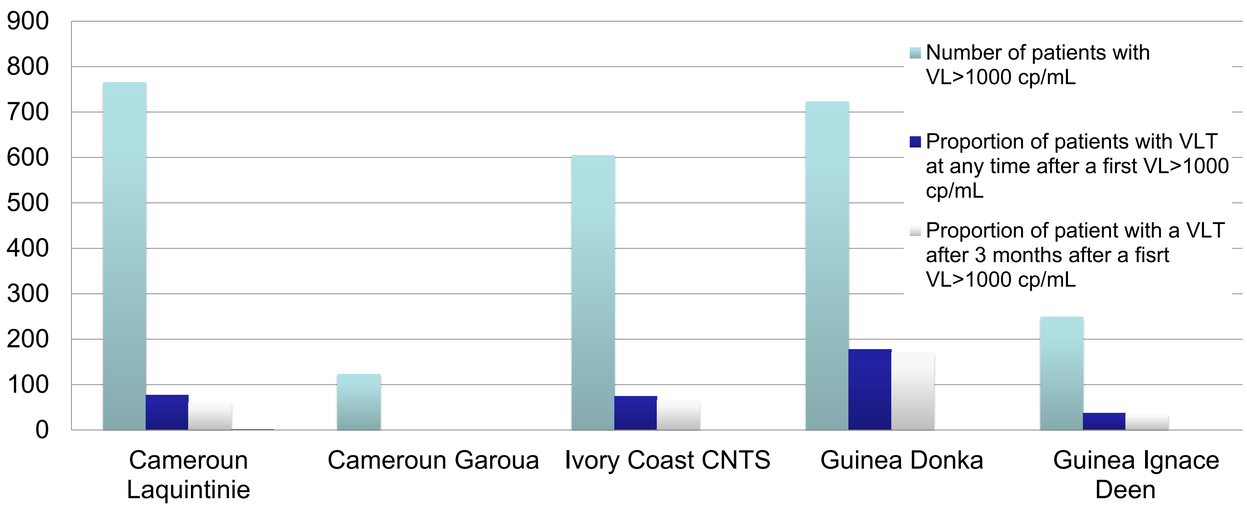
RESULTS

- 31 286 patients, median age 40 (32-49), female 61% with a median duration of 4 (2-7) years on ART (first line ART 89.7%) were analysed.
- Viral success was observed in 79% without significant differences between health care facilities and countries (figure 1).
- Among 6687 patients with VL >1000 cp/mL, 695 (10,4%) have benefited from a second VLT in median duration time of 7.5 months; 1.1%, 2.9% and 6.4% had a second VLT <3 months, 3 to 6 months and >6 months respectively with significant differences between main health facilities and countries (range 0 to 49%, p<0,001) (figure 2a).
- Being followed in a main health facility in comparison with other health facility was associated with a more frequent viral load control after a first VL>1000cp/m: 25% vs 5%, p<0.0001 (figure 2b, table 1)
- Among 620 (9.3%) patients who have benefited from a second VLT more than 3 months after the initial VLT, virological success was observed in 55% of cases (range 33% to 78% between health facilities and countries, p<0,001) (fig 3).

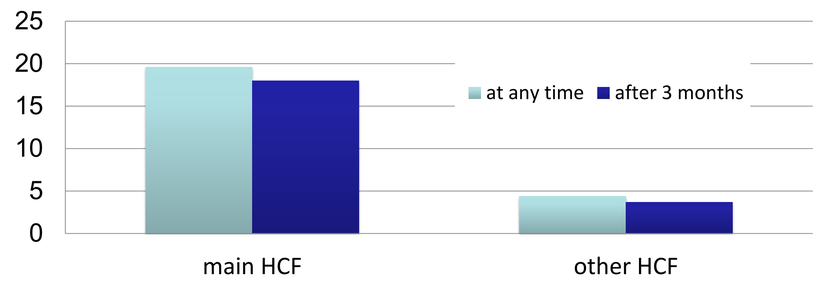
- **Figure 1. Percentage of patients with VL < 1000 cp/mL in OPP-ERA project**



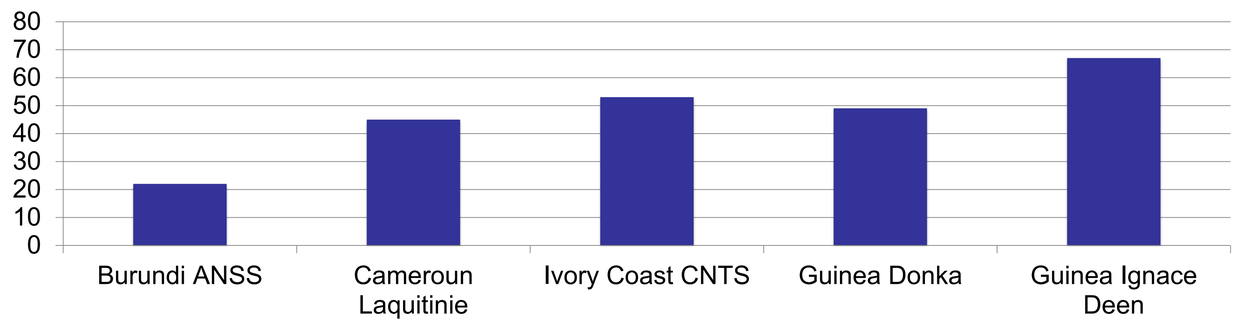
- **Figure 2a. Proportion of patients with VLT after a first VL>1000 cp/mL in main health care facilities**



- **Figure 2b. Proportion of patients with VLT after a first VL>1000 cp/mL according to main or other health care facilities**



- **Figure 3. Percentage of patients with confirmed VL failure in main health care facilities**



- **Table 1. Proportion of patients with VLT after a first VL>1000 cp/mL in health care facilities in Guinea**

Health care facilities	Main Health facilities: Donka, Ignace Deen	Other health facilities: CMC Miniere, CMC Ratoma, CMC Matoto, Asfegmassi	
Nb of PLHIV on ART	10573	6564	p<0.001
% PLHIV with VLT	2958 (28%)	1586 (24%)	p<0.001
% PLHIV with VL>1000 cp/mL	744 (25%)	287 (18%)	p<0.001
% PLHIV with VLT in case of first VL>1000 cp/mL	215 (29%)	28 (10%)	p<0.001

CONCLUSIONS

- We report good results with 79% virological success, in the four countries within the OPP-ERA project, including Burundi and Guinea where VL monitoring were not available before OPP-ERA project. Management of patients with virological failure by caregivers remains challenging. Despite disparity between facilities, less than 1/10 of patients with virological failure has benefited from a VL control according to WHO recommendation.
- Furthermore, our data suggest that with the implementation of VLT and proper appropriation by caregivers, a high number of patients requiring a second line ART is likely to be identified considering the accumulation of HIV drugs resistance following prolonged viral failure observed in sub-Saharan Africa [3]. Therefore strengthening of caregivers skills is recommended for VL scale up, better HIV care management and adequate planning of second line ART needs.

REFERENCE

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