HIV, ART, and the Problem of Treatment Failure Detection in Ethiopia - An Example from Ayder Referral Hospital of the Mekelle University

Amir Adem¹, Sintayehu Abebe¹, Norbert Brockmeyer², Anja Potthoff², Adrianne Skaletz-Rorowski², Judith Coenenberg²
and the Competence Network for HIV/AIDS
¹ Ayder Referral Hospital, Mekelle University
² Clinic for Dermatology, Venereology and Allergology of the Ruhr-Universität Bochum, Competence Network for HIV/AIDS

1. Aim/Objective

- Giving an overview about the HIV epidemic in northern Ethiopia
- Analysing therapeutic options and reasons for regimen changes, which are difficult due to the basic laboratory possibilities without viral load measurement
- Focusing on the main challenges of antiretroviral therapy (ART) in Ethiopia – the detection of treatment failures (TF) by using the example of the data of 9 patients who were shifted to a second-line regimen

2. Background

HIV IN ETHIOPIA

- Estimated HIV prevalence in Ethiopia: 2.8 % (9.3 % urban areas, 1.4 % rural areas)
- Total number of people living with HIV (PLWH): 1.5 million
- Due to the developing health system and services there is a slow but gradual decline since 2001

HIV IN TIGRAY capital city: Mekelle
- with ~220,000 inhabit.
- The Tigray Region, a northern Ethiopian federal state, is one of the most affected regions in Ethiopia by HIV/AIDS
- HIV prevalence: 3.1% in 2010 (urban areas up to 15% in females and 11.6% in males)
- PLWH in Tigray: ~100,000; nearly 28,000 of them are in need of ART

3. Data Source

THE PATIENT COHORT, AYDER REFERRAL HOSPITAL, MEKELLE
contains data of 749 HIV-positive patients of the last 4 years
- 491 of them ever started ART; 476 patients are active on ART
- The number of the patients enrolled under ART was rising each year from 65 (2008) to 396 new patients under ART in 2011

Most common first-line treatment regimens are AZT-3TC-NVP (31%) and TDF-3TC-EFV (29%)

In total there are 8 antiretroviral drugs available:
- NRTIs: AZT, d4T, TDF, ABC, 3TC; NNRTIs: NVP and EFV; PI: Kaletra

STI and other Co-Infections do play a major role in conjunction with HIV-positive patients, but due to the lack of diagnostic options (syndromic approach is standard), there are no data about STI-co-infection available at this time

HIV/TB co-infection rate: ~2%

4. Methods

ANALYSIS OF TREATMENT FAILURES (patient cohort, Ayder Hospital)

- Only 42 patients (out of 749) were ever switched to a second-line treatment
- 33 of them were lost to follow up, transferred to other facilities, death etc
- 9 of them are on follow up in the Ayder hospital

Documented data of this 9 patients:
- 1) timelines (start of the ART, months until switching) ; 2) WHO stages ; 3) CD4 basal and actual CD4 count after switching ; 4) ART regimes and reason for treatment change

5. Findings / Results

- Mean age of patients who were shifted to the second-line regimens was 42,7 years
- Average time until ART was started after HIV-infection was 5 months
- Mean CD4 count was 117/µl only (2 patients under 28 cells /µl)
- Shifted patients were at WHO stage 3 or 4
- 5 patients were switched because of an immunological failure with or without concomitant clinical failure (2 patients with later TB and 3 due to NVP toxicity and one because of other drug toxicities)
- No patient was given a first-line regimen with a PI, but all of them were shifted to regimes using Kaletra as a PI
- Mean time until switching to second-line therapy was 14 months; but if we concentrate of the 4 patients who had therapy side effects, ART was shifted after 1 to max. 4 month
- Mean CD4 count after switching: CD4 count of 6 patients were increasing after switching ART above >340/µl. Only the CD4 level of one patient, who had NVP toxicity, was decreasing on second-line treatment

6. Conclusion

- Due to the lack of viral load measurement it is difficult to detect treatment failures as early as necessary, and perhaps misdiagnosed in some cases. This is aggravated by the fact that CD4 counts are generally only measured after 6 months which can be problematic and delay the detection of treatment failures.
- It is recommendable to test the viral load of every patient before and after switching ART. Due to limited treatment options it would be optimal to do resistant testing even before switching ART. In case that the second-line treatment doesn’t take effect, resistance tests would be the next necessary step.
- Shifting to second-line treatment could be realised earlier, if diagnostic options could be enhanced in the near future.

Contact
Amir Adem, MD
E-Mail: amiradem@gmail.com
Judith Coenenberg, MA
E-Mail: j.coenenberg@klinikum-bochum.de