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Case Study
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Use of Rifabutin for Drug-Sensitive Tuberculosis Therapy in HIV/TB Co-Infection: A Case Report

Herbertson EC, Ekama SO and Onwujekwe DI*

Department of Medicine, Nigerian Institute of Medical Research, Nigeria

Abstract

This is a case report person living with HIV, who became co-infected with Tuberculosis (TB) and was treated with rifabutin-based anti-TB regimen while on protease-inhibitor-based ART (September 2015 to March 2016). The treatment site was a busy out-patient HIV clinic in Lagos, Nigeria.

There was no report of adverse drug reaction and no treatment interruption in this reported case, this is consistent with the report of less than 5% treatment interruption and no serious ADR among patients. Both antiretroviral and anti-TB therapy outcomes were good with rifabutin in a case of HIV/TB co-treatment for a patient on protease inhibitor-based antiretroviral therapy.

Keywords: Rifabutin; Tuberculosis; Antiretroviral; Anti-TB therapy; Co-Infection

Case Study

This is a case report on a person living with HIV, who became co-infected with Tuberculosis (TB) and was treated with rifabutin-based anti-TB regimen while on protease-inhibitor-based ART (September 2015 to March 2016). The treatment site was a busy out-patient HIV clinic in Lagos, Nigeria.

Patient's date of birth is April 28th, 1980, Sex is female and weight was 45 kg as of September 2015. She was enrolled into HIV care on the May 31st, 2006 and commenced Antiretroviral Therapy (ART) on the March 30th, 2007. She presented to the clinic on the July 31st, 2015 with complaints of cough of about 2 months duration, productive of sputum associated with chest pain, drenching night sweats, moderate to high grade fever, poor appetite, generalized weakness and weight loss of about 5 kg. She had been in and out of hospital admission following the onset of symptoms and she had no history of TB prior to this complaint.

Medication history

She had been given antibiotic and antimalarial medications over the two-month period prior to presentation to the out-patient clinic. Her ART regimen was modified from a combination of Nevirapine/Zidovudine/Lamivudine, to Efavirenz/Tenofovir/Lamivudine (Table 1).

Her adherence to ART was poor following her placement on ART in 2007 and was put through adherence counseling sessions. She was admitted on September 10th, 2015 into a Teaching Hospital with the clinical features of oral candidiasis and genital candidiasis in addition to the background tuberculosis, consequently, her CD4+ cell count further dropped to 74 cells/mm^3. These were highly suggestive of clinical, immunological, and virological failure of ART and she was therefore switched to second-line ART regimen of boosted atazanavir + Zidovudine+ TDF/3TC on the September 15th, 2015. She was discharged from hospital admission on Saturday, September 19th, 2015 following clinical improvement and her follow-up continued at the out-patient clinic.

The physician's impression was that the patient would benefit from rifabutin as part of her anti-TB regimen. She was consequently placed on anti-TB regimen consisting of rifabutin + Pyrazinamide + Ethambutol + Isoniazid (INH) for 2 months, followed by rifabutin + INH for four months, TB treatment ended in March 2016.

TB Treatment Outcome

Sputum AFB - negative after six months of anti-TB therapy. HIV Treatment outcome for one month, six months and nine months post TB treatment are shown in the Table 2.

Discussion

The patient was cured of TB, having tested negative to three samples of sputum Acid Fast Bacilli

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Correspondence:
Herbertson EC, Department of Medicine, Nigerian Institute of Medical Research, Yaba, Lagos, Nigeria, E-mail: ebiereh@yahoo.com

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Table 1: Patient's laboratory test results at presentation and year earlier.

	July 31st, 2015	July 25th, 2014
CD4	74	218
Hb	13.0	9
Cr	49	47.73
ALT	50	14.5

Table 2: HIV treatment outcome after anti-TB therapy.

Date	Viral load (cells/mm^3)	CD4 Count	ALT	Hb	Body weight (Kg)
15-Apr-16	424	177	20	10.5	48
2-Aug-16	192	283	15	10.8	-
14-Dec-16	119	375	13	10.3	-

(AFB) after 6 months of rifabutin-based anti-TB therapy. This case highly supports reports by Rawizza et al. [1] and Horne et al. [2] in which TB cure rates with Rifabutin-based anti-TB treatment was 85% and 81% respectively.

The HIV treatment outcome was also excellent in this case because there was sustained improvement of immunological outcome. The CD4+ cell count increased from the pre-treatment value of 74 to 177 at the end of the anti-TB treatment. It continued to increase to 375, more than five times the pre-treatment value, by 9 months post TB-treatment, as shown in the Table 2. This result is consistent with findings from the study by Rawizza et al. [1] which reported sustained increase in CD4 cell count between 6 and 12 months after Rifabutin-based anti-TB treatment among Nigerian children on protease-inhibitor based ART.

There was no report of adverse drug reaction and no treatment interruption in this reported case, this is consistent with the report of less than 5% treatment interruption and no serious ADR among patients co-treated with Rifabutin-based anti-TB therapy and PI-based ART, reported by Schmaltz et al. [3]. There was however, a gradual drop in liver enzymes between one and nine months post-TB treatment, an indication that there might have been slight elevation of ALT during the Rifabutin-based anti-TB treatment, a finding consistent with several reports of elevation of liver enzymes as side effect of Rifabutin [4-6].

Conclusion

Both antiretroviral and anti-TB therapy outcomes were good with rifabutin in a case of HIV/TB co-treatment for a patient on protease inhibitor-based antiretroviral therapy.

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