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Letter to the Editor

Viral Load for HIV Treatment Failure Management: A Report of Eight Drug-Resistant Tuberculosis Cases Co-Infected with HIV Requiring Second-Line Antiretroviral Treatment in Mumbai, India

Dear Sir:

We read with great interest the report by Satti H, McLaughlin MM, and Seung KJ describing six HIV/drug-resistant tuberculosis (HIV/DR-TB) co-infected patients who failed first-line antiretroviral treatment (ART) in Lesotho.[1] We would like to share an experience treating similar patients in Mumbai, India. Although having a lower HIV prevalence compared with many African countries, India has the third largest population living with HIV, after South Africa and Nigeria, with an estimated 2,090,000 people affected in 2011.[2] Furthermore, India has the highest burden of TB in the world, representing one-fifth (21%) of the global incidence. Unfortunately, India does not have national data on DR-TB prevalence, but a survey conducted in the States of Gujarat and Maharashtra in 2007 estimated the prevalence of DR-TB to be 3% in new cases and 12–17% in retreatment cases.[3]

Between October 2006 and July 2013, Médecins Sans Frontières (MSF) treated 129 DR-TB patients co-infected with HIV at a clinic in Mumbai. The patients were referred to us from government ART centers, public-private ART centers, and a network of community non-governmental organizations. All HIV patients were monitored with viral load (VL) testing at least every 6 months, as recommended by Satti. Patients identified as having virological failure received adherence counseling and subsequently had the VL test rechecked at 3–6 months. Those in whom the VL test did not re-suppress were switched to a second-line ART regimen consisting of a protease inhibitor (PI) and suitable nucleoside(tide) reverse transcriptase inhibitors (NRTIs), based on genotype HIV resistance testing when necessary.

Of the 129 DR-TB patients co-infected with HIV, 8 patients required second-line ART[4]; the median baseline CD4 count of the 8 patients before DR-TB treatment initiation was 102.5 cells/μL. Three of the 8 patients were on first-line ART at the time of DR-TB treatment initiation and had to be switched to second-line ART during the course of DR-TB treatment (Table 1). All 3 had a VL result > 5,000 copies/mL before the switch; subsequent VL testing showed a 2-log decrease in the two patients in whom a result was available.

In the six patients having a CD4 count available at the end of DR-TB treatment, five had an increase compared with baseline. Five out of eight patients had successful outcomes: 3 were cured and 2 successfully completed DR-TB treatment. Two patients were unfortunately lost to follow-up, and there was one death (Case 5). In this latter case, there was extensive pulmonary involvement and additional resistance of the TB strain to fluoroquinolones.

We agree with the recommendation of Satti that VL testing be performed routinely in DR-TB patients co-infected with HIV. It allows for early detection of ART adherence problems, which has been shown in other reports to prevent an unnecessary switch to a second-line regimen with enhanced adherence support.[5] In those in whom the VL result cannot be re-suppressed (i.e. caused by development of HIV drug resistance), an early switch to a second-line regimen is likely to increase the chances of a more successful outcome. We would like to reinforce an additional point that was implied in their Short Report, that DR-TB and HIV management be integrated in co-infected patients. Such patients are complicated and ideally should be managed in the same health facility by the same team of health care providers.

At present, HIV VL testing is reserved only for suspected cases of treatment failure attending public ART centers in Mumbai and is not used for routine monitoring. Such an approach is likely to delay early detection of ART failure and contribute to the poor outcomes being seen in DR-TB patients co-infected with HIV.[6] In this and other national HIV/ART programs not yet implementing routine VL testing, we ask that this be prioritized in HIV patients being treated for DR-TB. We also hope to see stronger collaboration between all HIV/ART and DR-TB programs with

TABLE 1
CD4 count, viral load, and TB treatment response of patients on second-line ART

Case	Age/sex	TB resistance pattern	Baseline CD4 count	ART regimen		CD4 count at the end of DR-TB treatment	Time to TB culture conversion (months)	Present outcome
				At initiation of DR-TB treatment	Switch to second-line ART during DR-TB treatment			
1.	34/Male	MDR PTB	62	TDF, AZT, 3TC, LPV/r (second-line)	N/A	256	6	Cured
2.	39/Male	MDR PTB	95	AZT, 3TC, LPV/r (second-line)	N/A	N/A	No conversion	Lost to follow-up
3.	40/Male	MDR EPTB	97	D4T, 3TC, EFV (first-line)	TDF, 3TC, LPV/r	137	3	Completed
4.	47/Male	MDR PTB	32	TDF, 3TC, LPV/r (second-line)	N/A	147	2	Cured
5.	37/Female	Pre-XDR PTB	165	D4T, 3TC, EFV (first-line)	ABC, 3TC, ATV/r	127	24	Died
6.	50/Male	MDR EPTB	108	AZT, 3TC, EFV (first-line)	TDF, 3TC, LPV/r	N/A	N/A	Lost to follow-up
7.	52/Male	MDR PTB	122	D4T, 3TC, LPV/r (second-line)	N/A	437	2	Cured
8.	51/Male	MDR EPTB	161	TDF, AZT, 3TC, LPV/r (second-line)	N/A	211	N/A (empiric DR-TB treatment)	Completed

a view toward eventual integration of services for these complicated patients, to allow for better management.[7]

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