POSTER P 034

Rescue therapy with Ibalizumab in HIV MDR patient

Martini, Salvatore[1]; Cuomo, Nunzia[2]; Pisaturo, Mariantonietta[3]; Coppola, Nicola[1]

[1]University of Campania Luigi Vanvitelli, Infectious Diseases Unit, Napoli, Italy ;
[2]Aorn dei Colli, Infectious Diseases Unit, Naples, Italy

BACKGROUND

Advances in antiretroviral therapy have optimized efficacy, tolerability and adherence, but some patients remain more difficult to manage. These are patients who have changed many regimens developing multi drug resistances(MDR).
The guidelines in this case suggest setting up a therapy that contains new generation drugs associated with residual ones that are still effective[1].
One of this new generation drugs, is Ibalizumab. It is a monoclonal antibody that blocks the CD4 cellular receptor thus preventing the interaction and contact with the viral gp120[2].

AIM

The aim of our study is to evaluate, in a case report, the role of ibalizumab in a salvage therapy for a multifailed HIV patient

MATERIAL & METHODS

The patient has performed several resistance tests over the years on plasma and HIV-DNA showing a range of multiple mutations to all classes of antiretrovirals (Fig. 1,2,3). On the basis of these tests, a rescue therapy was set up with the association of Entecavir + Tenofovir + Dolutegravir + Ibalizumab. At the time of the introduction of this therapy, the patient had HIVRNA of 37.800 copies/ml and CD4+ of 147 cells/µL. He started therapy with Ibalizumab, first as monotherapy with a loading dose of 2000 mg, then after 7 days a dose of 800 mg associated with 3 drugs chosen on the resistance test.

FIGURE 1

HIV-DNA: Genotypic Resistance Interpretation Algorithm INI

Summary Data

Sequence includes IN: codons: 1 - 288

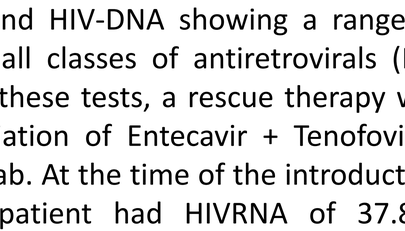
There are no insertions or deletions

Subtype and % similarity to closest reference isolate:

1. *IN: B (94.8%)*

Sequence Quality Assessment

Gene	QA Problem	Codons
IN	Stop Codons, Frame Shifts:	*None*
IN	Ambiguous Positions:	*None*
IN	Unusual Residues:	*None*



Blue lines indicate differences from consensus B; tall blue lines indicate sites associated with drug resistance. Red lines indicate QA problems.

Drug Resistance Interpretation: IN

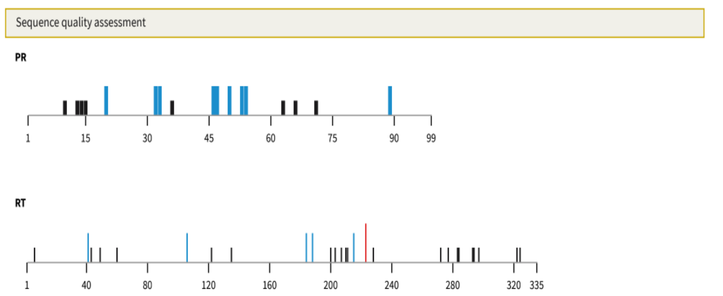
Major Resistance Mutations: Q148H
Accessory Mutations: G140S
Other Mutations: K14R, S17N, A21S, L28I, V32I, I72V, L101I, S119P, T122I, T124N, I135V, F181L, V201I, I208M, Q216HQ, T218S, K219N, N222K, S230N, V259I

Integrase Inhibitors	
dolutegravir (DTG)	Intermediate resistance
elvitegravir (EVG)	High-level resistance
raltegravir (RAL)	High-level resistance

FIGURE 2

HIV-RNA: Genotypic Resistance Interpretation Algorithm PI

Sequence quality assessment



Drug resistance interpretation: PR

PI Major Resistance Mutations: **V32I, M46I, I47V, I50V, I54L**
PI Accessory Resistance Mutations: **K20T, L33F, F53L, L89V**
Other Mutations: L10V, I13V, K14R, I15IV, M36I, L63P, I66F, A71V

Protease Inhibitors	
atazanavir/r (ATV/r)	High-Level Resistance
darunavir/r (DRV/r)	High-Level Resistance
lopinavir/r (LPV/r)	High-Level Resistance

FIGURE 3

HIV-RNA: Genotypic Resistance Interpretation Algorithm NRTI/NNRTI

Drug resistance interpretation: RT — HIVDB 9.0 (2021-02-22)

NRTI Resistance Mutations: **M41L, M184V, T215Y**
NNRTI Resistance Mutations: **V106I, Y188L**
Other Mutations: E6D, K43E, K49R, V60I, K122E, I135T, T200E, E203K, Q207E, L210F, R211K, K223KAET, L228LR, A272P, K277R, L283I, R284K, I293V, P294T, E297R, S322A, D324E

Nucleoside Reverse Transcriptase Inhibitors		Non-nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	Intermediate Resistance	**doravirine (DOR)**	High-Level Resistance
zidovudine (AZT)	Intermediate Resistance	**efavirenz (EFV)**	High-Level Resistance
emtricitabine (FTC)	High-Level Resistance	**etravirine (ETR)**	Low-Level Resistance
lamivudine (3TC)	High-Level Resistance	**nevirapine (NVP)**	High-Level Resistance
tenofovir (TDF)	Low-Level Resistance	**rilpivirine (RPV)**	High-Level Resistance

RESULTS

Viro-immunological data were progressively evaluated and rapid efficacy of salvage therapy was noted. After 7 days, Ibalizumab alone had already reduced HIV viral load by 2 log. After 3 weeks it was reduced by 1 more log and after 4 weeks, viral suppression was achieved. CD4 progressively improved from 147 to 254 cells/µL. (Fig.4-5)The patient experienced no adverse events other than a rise in blood pressure after the first infusion of the loading dose of ibalizumab.

FIGURE 4

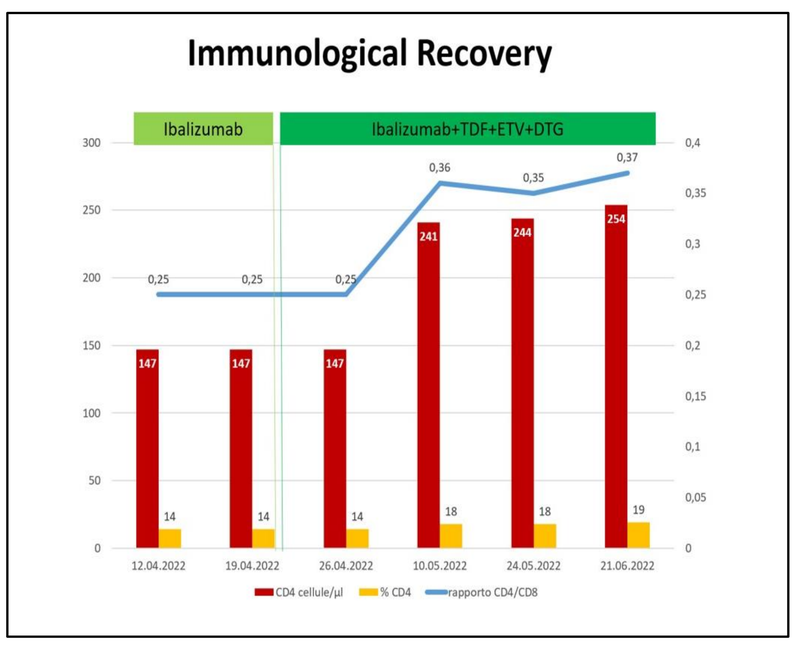
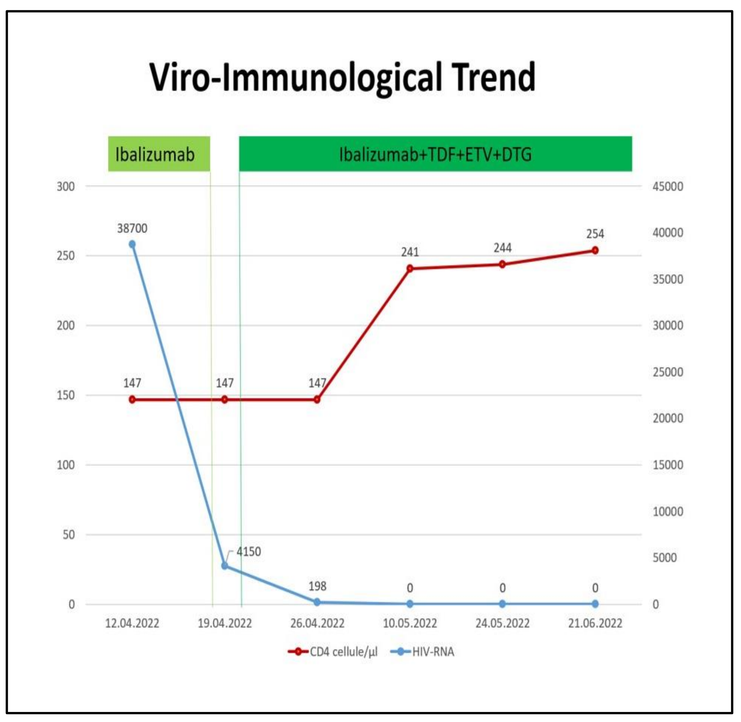


FIGURE 5



CONCLUSIONS

In conclusion, our case report shows that ibalizumab has been extremely effective in lowering the viral load, both alone and subsequently in combination with 3 other antiretrovirals. Virological suppression was accompanied by good immunological recovery. The overall tolerability profile was good, despite the onset of hypertension after the first infusion of the drug. Our data corroborates the efficacy of Ibalizumab in rescue therapies of MDRs.

REFERENCES

1. EACS Guidelines version 11.0, October 202110.1007/s40265-020-01258-3.
2. Blair HA. Ibalizumab: A Review in Multidrug-Resistant HIV-1 Infection. Drugs. 2020 Feb;80(2):189-196. doi: 10.1007/s40265-020-01258-3.

DISCLOSURES

The authors declare to have no conflicts of interest.

CONTACS

•Nicola Coppola, MD, PhD, Assistant Professor of Infectious Diseases;
e-mail: nicola.coppola@unicampania.it

•Salvatore Martini, MD, PhD;
e-mail: salvatore.martini@policliniconapoli.it