

# TB co-infection treated at onset of therapy does not affect long-term risk of treatment failure among HIV-1 patients initiating EFV-based combination antiretroviral treatment (cART)

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**Abstract # MOAB103**

# Background

- ❑ TB continue to be one of the commonest infection in HIV infected patients in developing countries
- ❑ Rifampicin (RMP) has significant drug interactions with NNRTI and PI
- ❑ RMP reduces the exposure to efavirenz (EFV) by up to 20%, more marked in individuals with higher body weight

# Background

- ❑ We previously reported that HIV-TB co-infection can be treated by co-administration of RMP and an EFV 600mg based cART without compromising antiviral efficacy: [Patel AK et al. JAIDS 2004](#)
- ❑ Median plasma efavirenz levels were comparable among both (600 & 800 EFV) groups: [W. Manosuthi et al. AIDS 2005](#)
- ❑ Study clearly demonstrates that increasing Efavirenz to 800mg/day when also using Rifampin is not necessary and may increase side effects: [Pedral-Sampaio et al. The Brazilian Journal of Infectious Diseases 2004](#)

# Objectives

- ❑ RMP based TB treatment at the onset of cART may have negative implications for durable response despite initial successful immune reconstitution
- ❑ To study impact of TB treatment on long term response of EFV-based cART

# Methods

- We conducted a prospective, observational, longitudinal cohort study of HIV-1-infected, antiretroviral-naïve patients initiating EFV (600mg)-based cART
  
- Setting: Tertiary referral HIV Clinic
  - Infectious diseases Clinic, Ahmedabad, India

## Methods: Contd.

- ❑ Patients with a minimum of 12 months follow-up were included in our analysis
- ❑ Patients with tuberculosis received 9 months of rifampicin-containing anti-TB treatment in addition to EFV-based cART, while those without tuberculosis received EFV-based cART alone
- ❑ After the first 9 months of therapy, all patients received EFV-based cART alone

## Methods: Contd.

- ❑ All patients were evaluated clinically monthly (or more frequently) for the first three months and thereafter every three months
- ❑ CD4 count was carried out every 3 months
- ❑ Baseline characteristics (age, sex, weight, CD4 cells count) were noted
- ❑ Patients were closely followed up for adverse drug reactions
- ❑ Treatment failure was defined as immunological failure (DHHS guideline)

# Statistical analysis

- ❑ Sex, adherence and adverse reaction data were analyzed by using  $\chi^2$
- ❑ CD4 cell count, age and weight data were analyzed by '*t*' test
- ❑ Statistical analysis was carried out by GB Stat v7.0, dynamic microsystem Inc

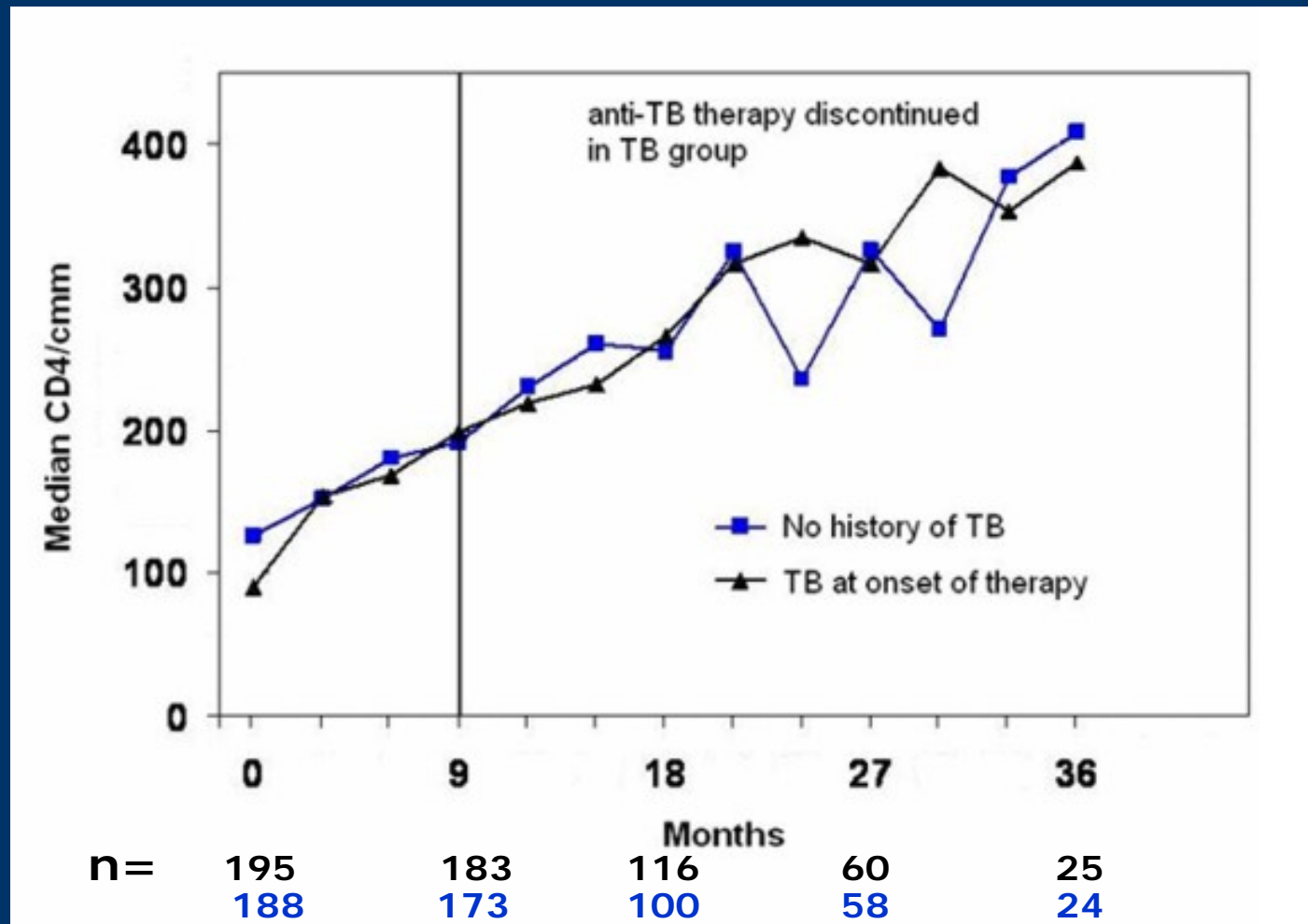
# Results

- 383 subjects had follow-up of more than 12 months on efavirenz based cART
- 195 (50.91%) patients were TB co-infected (TB group)
- 188 (49.09%) patients were not TB co-infected (Non TB group)

# Results: Baseline characteristic

Parameters	TB group	Non TB group	<i>P</i> value
Age in years Median (range)	36 (17-65)	36 (17-72)	0.0105
Sex: Male Female	153 42	140 48	0.4232
Weight in Kg Median (range)	54 (35-84)	56 (38-88)	0.6695
Baseline CD4 count {median (range)}	90 (5-586)	126 (1-914)	0.0005
9 month CD4 count {median (range)}	289 (10-839)	317 (21-874)	0.1395

# CD4 response at various time point



$$\chi^2=3.652, p=0.056$$

## Follow up: Adherence

Parameter	TB group (n=195)	Non TB group (n=188)
Regular	120 (61.53%)	123 (65.42%)
Irregular	62 (31.79%)	58 (30.85%)
Lost	13 (6.66%)	07 (3.72%)

Overall adherence compared between two groups: ***P= 0.494***

**Treatment was changed to nevirapine regimen in 7 patients in Tb group and 2 patients in non TB group**

## Follow-up: Treatment Failure

Parameter	TB group (n=195)	Non TB group (n=188)	<i>P</i>
Treatment failure	23 (11.79%)	19 (10.10%)	0.715
Lost to FU as failure	36 (18.46%)	26 (13.82%)	0.275

## Follow-up: Time to failure

Months at time of failure	TB group (n=23)	Non TB group (n=19)
12	6	6
15	3	5
18	3	3
24	3	1
27	3	3
30	2	0
33	3	1

## Results: Adverse reactions

Parameters	TB group	Non-TB group	<i>P</i> value
GI disturbances	19 (9.74%)	13 (6.91%)	0.4148
<b>Hepatitis</b>	<b>26 (13.33%)</b>	<b>4 (2.12%)</b>	<b>0.0001</b>
CNS disturbances	27 (13.84%)	33 (17.55%)	0.3913
Skin rash	5 (2.56%)	4 (2.12%)	0.9557
Peripheral neuropathy	26 (13.33%)	24 (12.76%)	0.9896
Gynecomastia	7 (3.58%)	5 (2.65%)	0.8189

## Results: contd.

- IRIS was seen in 29 (14.87%) & 17 (9.04%) patients in TB & non-TB group respectively ( $p=0.0749$ )
- None of the patient in TB group had relapse while on cART
- None of the patient in non-TB group developed TB while on cART

# Conclusions

RMP based TB treatment at the onset of EFV based cART didn't predict or increase risk for EFV based treatment failure among HIV-1 infected patients, up to three years of follow up

## Limitations of Study

- ❑ Selection bias
- ❑ Treatment failure was defined by immunological failure
- ❑ Plasma HIV viral load were not done to monitor treatment

Thank You