TDF/3TC/EFV regimen-related renal and neuropsychiatric toxicity in Vietnam HIV-infected patients

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Objectives

- TDF/3TC/EFV is recommended as a first-line regimen for naïve HIV-infected patients by WHO.
- Limited data on EFV-associated neuropsychiatric adverse effects and TDF-associated renal dysfunction in low body weight patients.

1. To determine the incidence of neuropsychiatric and renal adverse events of TDF/3TC/EFV regimen.
2. To identify possible risk factors associated with adverse effects

Methods

Study design: a prospective cohort study including HIV-infected patients in 10 clinics in 7 cities in Vietnam from 16/3/2015 to 15/7/2016

Inclusion:

- age ≥18 years old
- antiretroviral naivety
- initiation of ARV between 16/3/2015 and 15/1/2016
- non-pregnant during monitoring period.

Exclusion:

EFV cohort:

- No follow-up visits.

TDF cohort:

- Missing baseline weight or serum creatinine
- No data on follow-up serum creatinine results

Methods

Basic demographic data and baseline laboratory parameters were recorded within 90 days prior to initiation of ART

Adverse effects were monitored and reported by trained healthcare professionals at clinics.

- EFV-related neuropsychiatric disorders: by interviewing patients
- TDF-related renal toxicity: defined as a 25% decline in CrCl from the baseline level by follow-up body weight and serum creatinine.

Methods

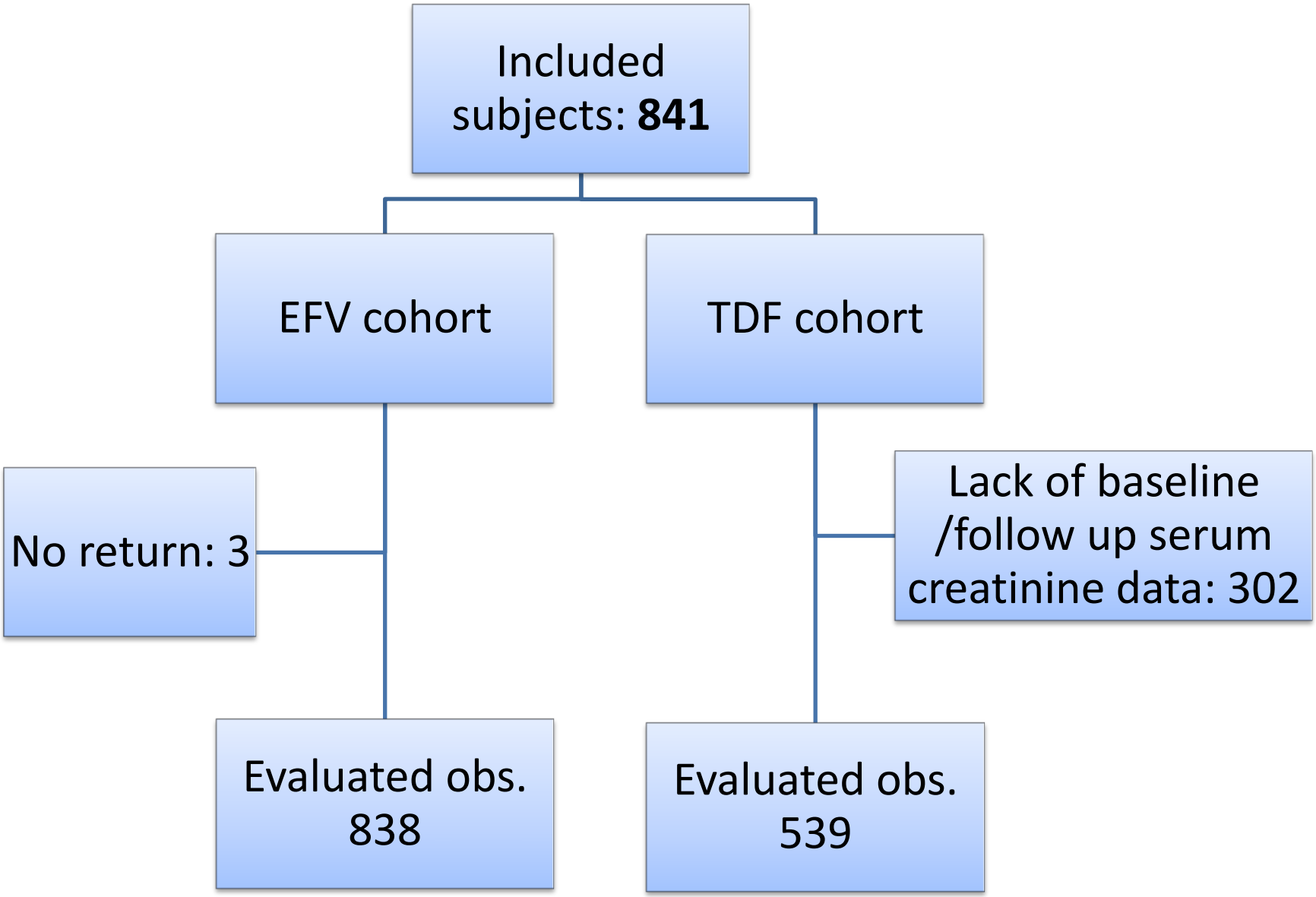
Statistical analysis

Statistical analyses were performed by the RStudio.

Risk factors indentification: multivariate analyses by Bayesian Information Criterion (BIC) to find the most appropriate model

The Predictive Mean Matching (PMM) method was used to deal with missing values of continuous variates.

Results


Included subjects: **841**
EFV cohort
TDF cohort
No return: 3
Lack of baseline /follow up serum creatinine data: 302
Evaluated obs. 838
Evaluated obs. 539

Results

Baseline characteristics and laboratory investigations

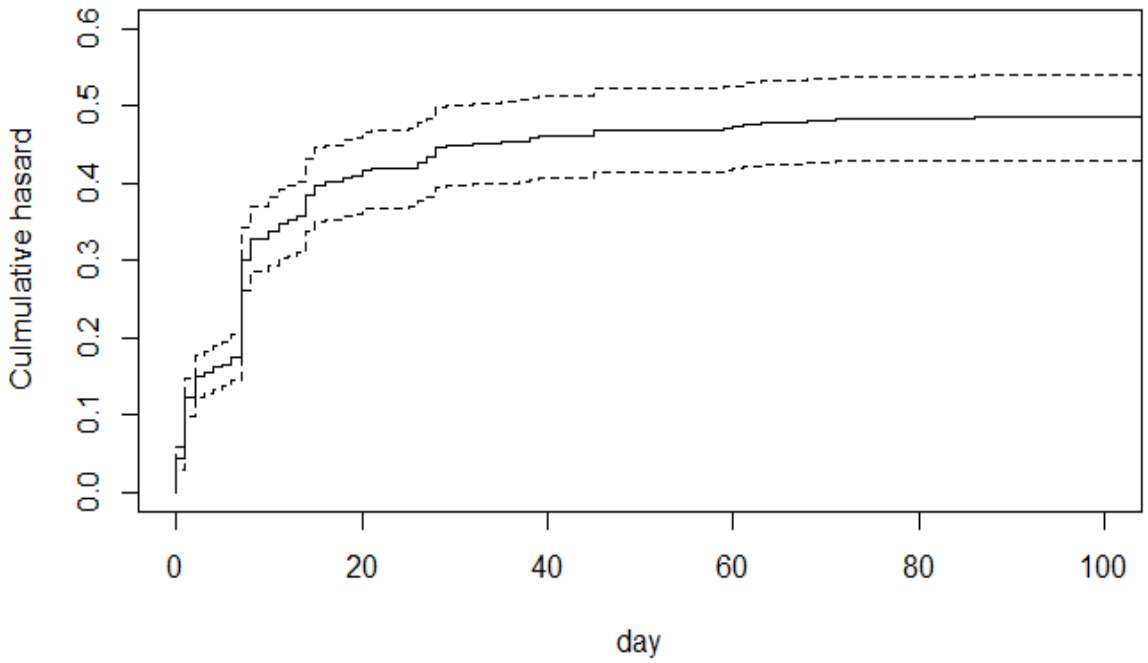
		EFV cohort	TDF cohort
Number of patients		838 (100.0)	539 (100.0)
Age	Median (IQR)	33 (29, 38)	34 (29, 39)
Gender	Male	561 (66.9)	365 (67.7)
	Female	277 (33.1)	174 (32.3)
Weight	Median (IQR)	53 (48, 59)	53 (48, 59)
CrCl	Median (IQR)	86.0 (72.5-101.0)	86 (72-102)
Follow-up time, months	Median (IQR)	10.4 (7.9-12.8)	11.1 (8.7-13.0)

Results

Neuropsychiatric adverse events:

- 38.7% (324 patients) experiented psychiatric disorders
- 94.5% experienced AEs in the first month of treatment
- 76.9% experienced only mild or moderate symtomps
- Most common: dizziness, headache and fatigue (>50.3%)

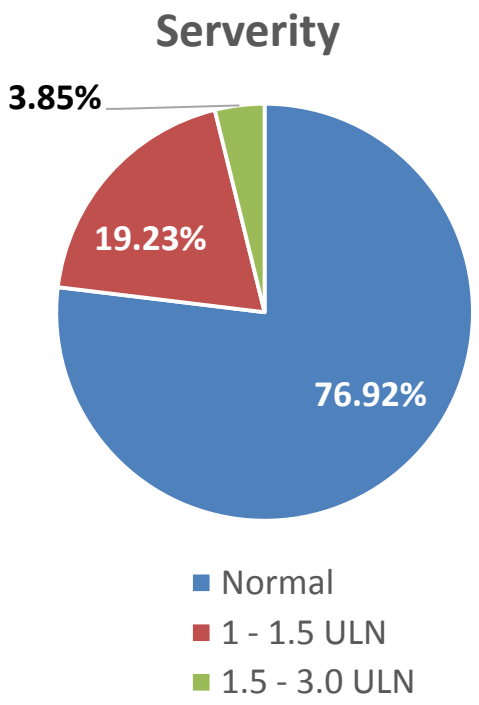
Adjusted HR EFV-related events with CI 95%

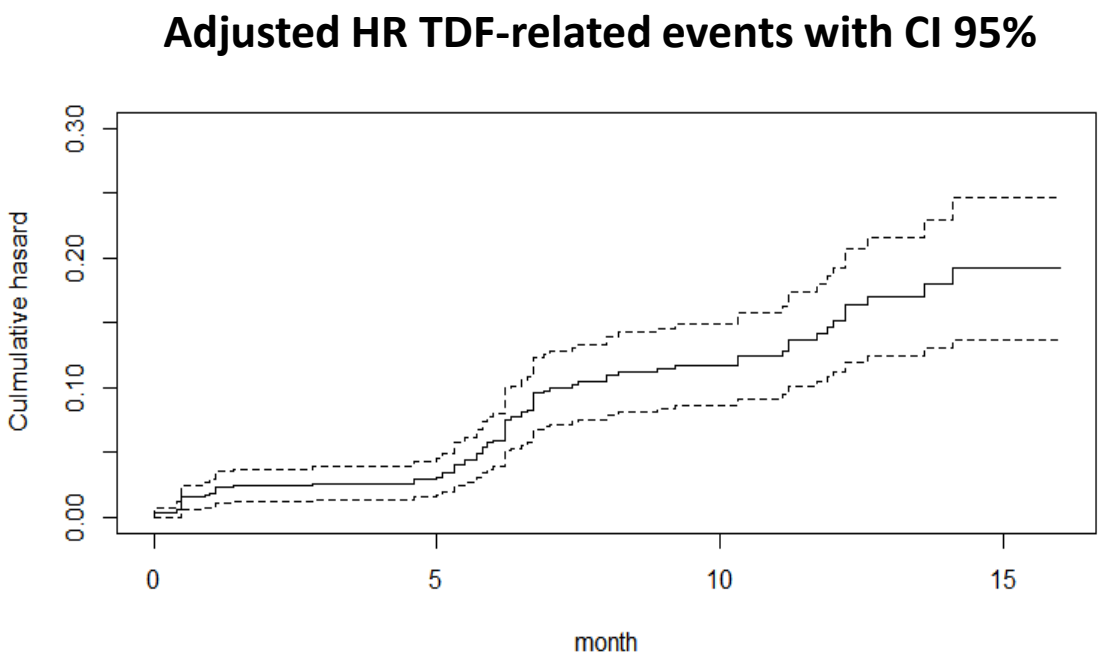


Results

Renal dysfunction events

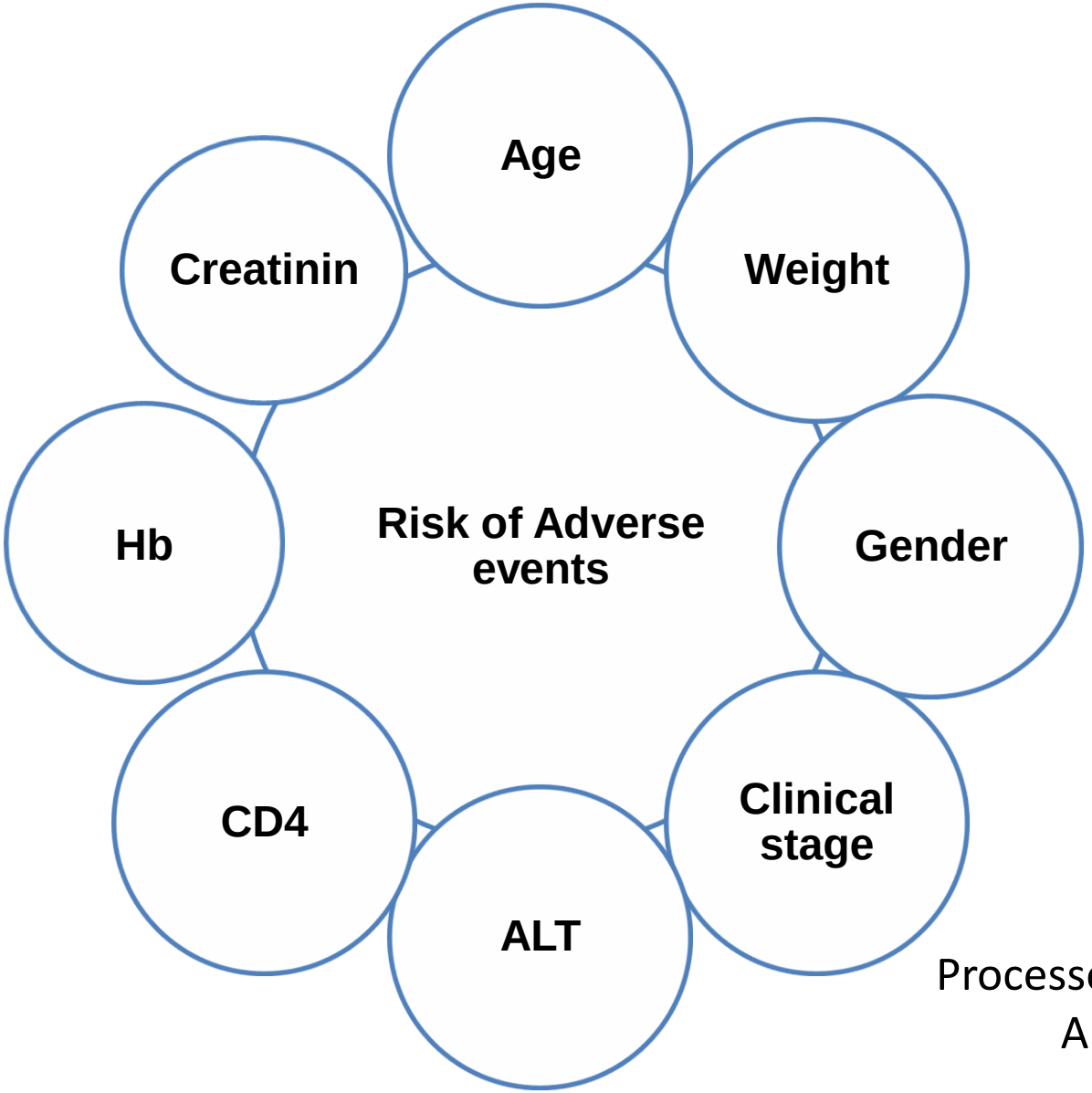
- Median (IQR) of monitoring: 11.1 (8.7-13.0) months.
- 78 (14.5%) patients had a 25% decrease in CrCl.





Results

Multivariate logistic analysis



Processed missing values:
ALT, CD4, Hb.

Results

Multivariate logistic analysis

Risk factor	HR (CI 95%)	p
EFV cohort		
Weight (per 10kg)	0.822 (0.686– 0.959)	0.011
Hb (per 1g/dL)	1.111 (1.055-1.168)	<0.001
Age (per 10 years)	1.218 (1.076-1.363)	0.003
TDF cohort		
Hb (per 1g/dL)	0.846 (0.745 – 0.948)	0.003
Age (per 10 years)	1.363 (1.062 – 1.672)	0.018
CrCl (per 10ml/min)	1.177 (1.140 – 1.214)	<0.001

Conclusions

324 (38.7%) patients experiencing neuropsychiatric adverse events.

- Appear mainly in the first month of initiation (94.5%).
- Most of the adverse effects were mild; Dizziness, headache and fatigue was the most common

78 (14.5%) patients had renal dysfunction.

- creatinine level remain normal in 60 (76.9%)

Risk factors:

Neuropsychiatric toxicity

- higher age
- lower weight
- higher baseline hemoglobin

Renal dysfunction

- higher age
- higher baseline CrCL
- Lower baseline hemoglobin

Thank you, questions?