HIV & AIDS Review 15 (2016) 55–60

Contents lists available at ScienceDirect

HIV & AIDS Review

journal homepage: www.elsevier.com/locate/hivar

Original Research Article

Efavirenz as component of initial combination antiretroviral therapy – Data from the Polish Observational Cohort of HIV/AIDS Patients (POLCA) Study Group

J. Kubicka [a,*], J. Gizińska [a], J.D. Kowalska [a,b], E. Siwak [a], P. Swiecki [a], P. Pulik [a], B. Szulborska [a], E. Burkacka-Firlag [a], A. Horban [a,b], the POLCA Study Group[1]

[a] Hospital for Infectious Diseases, HIV Out-Patient Clinic, Warsaw, Poland
[b] Medical University of Warsaw, Department for Adult's Infectious Diseases, Warsaw, Poland

ARTICLE INFO

Article history:
Received 11 June 2014
Accepted 18 April 2016
Available online 12 May 2016

Keywords:
HIV
cART
Efavirenz
Late presenters
Efficacy

ABSTRACT

Aim: We have investigated treatment effects among patients from Polish Observational Cohort of HIV/AIDS Patients (POLCA) who started efavirenz (EFV) in their first combination antiretroviral therapy (cART).

Background: Combination antiretroviral therapy has dramatically influenced HIV epidemic and patients outcomes. With wider access to care and treatment and newer forms of cART HIV-positive persons' prognosis continue to further improve, yet still strongly dependent on optimal adherence and virological efficacy.

Materials and Methods: POLCA is an observational cohort where information is collected in real-time from clinic database. Patients were included into analyses, if being naïve prior and starting EFV-based cART regimen and followed until 24 months, treatment modification or death whichever occurred first.

Results: In total 285 patients started EFV-based cART and 55.1% continued the treatment after two years. Majority of patients were male (85.6%) and HIV infected through sexual contacts (97.5%). The median age at starting cART was 31.9 years. Baseline CD4 count was 228 cells/μl. Thirty patients (10.5%) had treatment failure defined as <200 copies/μl in two subsequent measurements and/or viral rebound above 500 copies/μl. In terms of toxicities we have observed continuous increase in proportion of patients with normal urine protein level from 75.3% at baseline to 89.3% after 24 month of treatment. The proportion of patients with normal triglycerides, total cholesterol and LDL cholesterol decreased over time on efavirenz-based treatment, whereas proportion of those with normal HDL cholesterol increased. 16.4% of patients discontinued EFV due to CNS-related toxicities.

Conclusions: EFV-based cART proved to be effective and safe treatment option for HIV-positive patients observed in POLCA study.

1. Introduction

Combination antiretroviral therapy (cART) has dramatically influenced HIV epidemic and HIV-positive patients outcomes [1–3]. However treatment related toxicities significantly decreased the netto benefit received from treatment resulting in life threatening conditions or decreased quality of life [4].

With wider access to care and treatment, as well as newer forms of cART, HIV-positive persons' prognosis continue to further improve, yet still strongly dependent on optimal adherence and virological efficacy [5–7]. With a trend towards earlier treatment initiation a caution choices need to be maid while deciding for antiretroviral groups exposure, aiming in achieving longest possible first regimen duration [8,9].

In addition certain concerns regarding life-long treatment remains, such as bone, renal or metabolic long-term toxicities. This requires cautious treatment planning with taking into account patients' individual risk profiles [10–12]. The most valuable for defining treatment strategy is knowledge gained from post registration drug use and observational studies.

Therefore we have investigated baseline characteristics and treatment effects among patients starting efavirenz in Polish Observational Cohort of HIV/AIDS Patients (POLCA).

* Corresponding author. Tel.: +48 509017398; fax: +48 223358103.
E-mail address: joannakb64@gmail.com (J. Kubicka).
[1] The members of the POLCA Study Group are listed in Appendix A.

http://dx.doi.org/10.1016/j.hivar.2016.04.006
1730-1270/

2. Methods

POLCA is an observational cohort where information is collected in real-time from clinic database. The cohort was established in 2010 with the purpose of observation of HIV-positive, adult patients followed in HIV Out-Patient Clinic, Hospital of Infectious Diseases in Warsaw. Retrospective data were included starting from 1994. In addition to all lymphocyte CD4 cell count and HIV RNA measurements the complete history of antiretroviral treatment, demographic characteristics and results of all tests performed as part of routine clinical care are available for all patient. Since 2005 a CoDe procedure is used for collecting data on death cases in the cohort [13].

All ethical approvals for the study have been obtained according to Polish regulations.

2.1. Patients

Patients were included into analyses if being naïve prior and starting efavirenz based cART regimen and followed until 24 months, treatment modification or death whichever occurred first. All analyses were performed using SAS version 9.1 (SAS Institute, Cary, NC, USA).

2.2. Definitions

Late presenters were defined, according to European Late Presenter Consensus definition, if showing into care with a CD4 count below 350 cells/μl [14].

HIV infection risk groups were specified as injecting drug use (IDU), heterosexual, men having sex with men (MSM) and other, if not provided. If more than one risk for acquiring HIV infection was specified the IDU was chosen over sexual contacts, and MSM over heterosexual contacts.

Time of establishing HIV diagnosis was defined by the date of Western Blot test. cART was defined as three or more antiretroviral drugs from at least two groups. Normal and abnormal ranges of laboratory tests were defined according to local laboratory reference ranges as presented in Table 1. Proteinuria was defined as any presence of protein in urine measured by the dip stick test.

3. Results

3.1. Baseline characteristics

In total 285 patients started efavirenz based cART regimen. Majority of patients were male (85.6%) and HIV infected through sexual contacts (97.5%). In general 96 (33.7%) patients were infected through IDU (22 women and 74 men), 43 (15.1%) through heterosexual contacts (10 women and 33 men) and 102 (35.8%) through homosexual contacts. In 44 (15.4%) cases the risk of acquiring HIV remained unspecified or unknown (7 women and 37 men).

The median age at starting cART was 31.9 (SD 9.5) years and women tend to be younger (29.2) than men (32.7) while starting treatment. The median time from HIV diagnosis to treatment initiation was 1.4 years. It was shorter for women (0.7) than men (1.5).

The median baseline lymphocyte CD4 count at treatment initiation was 228 cells/μl, lower in women (210) than men (238).

Baseline median HIV RNA load was 54,800 copies/μl, lower in women (21,650) than men (61,740) ($p < 0.05$).

3.2. Treatment modifications

One hundred and fifty seven (55.1%) of patients continued to remain on efavirenz containing regiment after two year of observation. The remaining 128 patients discontinued efavirenz. CNS-related toxicities caused treatment discontinuation in 16.4% of patients and majority occurred within first 90 days of treatment. Dyslipidemia was reported as the cause for treatment modification in only one patient from this treatment group (0.8%). Table 2 presents further details on reasons for efavirenz-based treatment

Table 1
Normal and abnormal ranges of laboratory tests.

Parameter	Women	Men	Parameter	Women	Men
Glucose	3.6–5.8	3.6–5.8	Urea	2.5–7.1	2.5–7.1
Total cholesterol	<4.8	<4.8	Creatnine	46–92	58–110
Cholesterol HDL	>0.91		Urine specific gravity	1.010–1.025	1.010–1.025
Cholesterol LDL	<2.6		RBC	3.8–5.8	4.04–6.13
Triglycerides	<1.69		MCV	80–94	80–97
Bilirubin	3–22		PLT	128–348	120–350
ALT	10–52	10–70	WBC	4–10	
AST	10–36	10–59	TLC	0.6–4	
GGTP	12–43	15–73	INR	0.77–1.43	

Table 2
Treatment modifications during first two years of observation in 157 patients starting efavirenz containing regimen.

Reasons for cART modification	*N* (%)	Time from treatment initiation in days			
		≤90	91–180	181–365	366–730
Total	128 (100)				
Patient's choice	16 (12.5)	7 (2.5)	4 (1.4)	3 (1.1)	2 (0.7)
Other	62 (48.4)	27 (9.5)	8 (2.8)	13 (4.6)	14 (4.9)
Lost to follow up	8 (6.3)	2 (0.7)	0 (0)	4 (1.4)	2 (0.7)
Treatment failure	5 (3.9)	2 (0.7)	0 (0)	2 (0.7)	1 (0.4)
Immunological failure	1 (0.8)	1 (0.4)	0 (0)	0 (0)	0 (0)
Virological failure	9 (7.0)	0 (0)	1 (0.4)	4 (1.4)	4 (1.4)
Gastrointestinal tract side effects	2 (1.6)	0 (0)	1 (0.4)	0 (0)	1 (0.4)
CNS side effects	21 (16.4)	12 (4.2)	1 (0.4)	3 (1.1)	5 (1.8)
Death	3 (2.3)	2 (0.7)	0 (0)	1 (0.4)	0 (0)
Dyslipidemia	1 (0.8)	0 (0)	0 (0)	0 (0)	1 (0.4)