
ORIGINAL ARTICLE**A Retrospective Study of Characteristics of HIV Infected Individuals Opting Out from Antiretroviral Treatment under National Programme**

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Abstract:

Background: Retention in care is important for optimal treatment outcomes and effective positive prevention. Reports from India and other countries have mentioned various factors affecting retention but the data on 'opting out' from Antiretroviral Treatment (ART) under the National AIDS Control Programme are scanty. **Aim and Objectives:** To estimate prevalence and predictors for opting out from Antiretroviral Treatment among HIV infected individuals attending ART center at ICMR-National AIDS Research Institute, Pune. **Material and Methods:** In this retrospective study, records of individuals taking ART between January 2006 and May 2017 were reviewed. An individual who no longer wished to continue treatment with the national programme because of his/her personal choice and stopped visiting the centre was reported as being 'opted out' from the programme. **Results:** Of the total 3842 individuals ever initiated on ART, 115 (3%) individuals opted out. The possibility of opting out from ART was 4.9 [95% CI: 1.78-13.6, (p=0.002)] times more in individuals who showed declining trend in their CD4 counts and 8.8 [95% CI: 3.33-23.27, (p<0.001)] times more in individuals who received treatment for less than a year. Sixty four (56%) opted out individuals could not be contacted

telephonically. Of the 51 (44%) individuals that were contacted, 16 replied that they will visit the clinic as per their convenience. The reasons for opting out from ART in remaining 35 patients were inconvenience for coming to the clinic in terms of distance or financial issues (13), taking treatment from private sector (10), side effects of the drugs (5), death (4) and taking treatment from other government programme clinics (3). **Conclusion:** Efforts should be taken to address the issues of individuals not willing to continue ART from the programme clinics (opted out). The counseling should be strengthened to prevent the individuals opting out from the treatment. The national operational guidelines for ART services need to address the issues of these individuals so that they can be brought back into the programme.

Keywords: HIV, AIDS, ART Center, opted out

Introduction:

Over the last two decades, India's National AIDS Control Programme (NACP) has evolved and expanded to provide HIV prevention, testing and treatment services countrywide. Test and treat guidelines have been implemented recently in the country and it is crucial to retain patients at every step of care cascade [1]. Retention in care is

important in preventing HIV-related illnesses and viral transmission. Reports from India and other parts of the world have mentioned various factors affecting retention but the data on 'opting out' from treatment in the national programme are scanty [2-5]. The main reason for lack of data from systematically conducted studies is the universal definition of being 'opted out' from the treatment in the programme. Majority of the reports other than India have used the terms 'disengagement from care' or 'attrition to treatment' but the term for 'opting out' from the treatment was scanty [6-8]. As a part of monitoring and evaluation of the national programme, reports on treatment outcomes are sent every month to the programme managers from the ART centres across the country with HIV infected individuals being classified as ever registered, ever started on treatment, expired, stopped treatment, transferred to another facility, missed visits, opted out, lost to follow-up and alive and on treatment. The national operational guidelines for ART services have defined all above categories except 'opted out' from the treatment [9]. The programme has issued guidelines and taken efforts for tracking back Loss To Follow Up (LTFU) individuals, minimize the loss in the transfer out individuals from one facility to other but the area in retaining the opted out individuals is still grey. In this paper, we report the prevalence and predictors for opting out from ART among HIV infected individuals at ICMR-National AIDS Research Institute ART centre in Pune.

Material and Methods:

The National AIDS Control Organization (NACO) extended free ART roll out programme in December 2005 to ICMR-National AIDS Research Institute, Pune, to provide care and support to HIV infected individuals eligible to receive free ART as

per the national guidelines [10]. In this retrospective study, all individuals who were receiving antiretroviral treatment between January 2006 and May 2017 were included.

When the eligible individuals were initiated on ART, their demographic, biological and clinical details were entered into the white cards provided by the programme. They received drugs for one month and were requested to come back for follow up to collect drugs for the next one month. The data for all visits were entered in the white cards and green booklets with the treatment details of the patients. An individual who no longer wished to continue treatment with the national programme because of his/her personal choice and stopped visiting the centre was reported as 'opted out' [11,12]. This was mentioned accordingly in the programme card and the monthly progress report sent to the national programme. The Institutional Ethics Committee approval was obtained for the data analysis.

Data Collection and Statistical Analysis:

The records of all individuals taking ART between January 2006 and May 2017 were reviewed and data on opted out individuals were considered for analysis. The telephonic calls were made by the counselors to these opted out individuals to know their current treatment status. As the number of individuals opting out from the treatment was small, age and gender matched individuals who visited the clinic regularly were considered in 1:2 proportion for appropriate comparison.

Conditional logistic regression was used to find the predictors of the individuals opting out from ART. The change in CD4 count was calculated as CD4 count at last visit minus the CD4 count at initiation of ART. The factors with association

reaching significance at $p \leq 0.05$ in the univariable analysis were included in multivariable analysis. The data were analyzed by SPSS (22.0 version).

Results:

A total of 3842 individuals were ever initiated on ART till May 2017. Of these, 115 (3%) individuals opted out from ART. Among opted out individuals, 57 (49.6%) were females and 26 (22.6%) were illiterate. Seventy six (66.1%) individuals were employed and their average income was Rs. 7715. Their median age at ART initiation was 39 years (IQR: 32-44). Nineteen (16.5%) individuals had tuberculosis at the time of registration and 71 (61.7%), 24 (20.9%) and 20 (17.4%) were initiated on zidovudine, tenofovir and stavudine based regimen respectively.

The median CD4 counts at ART initiation and the last follow up visit among opted out individuals were 224 cells/mm³ (IQR: 126-329) and 289 cells/mm³ (IQR: 155-401) respectively. Among individuals taking regular treatment at the centre, the median CD4 count at ART initiation was 189 cells/mm³ (IQR: 121-304) and 481 cells/mm³ (IQR: 333-680) at last follow up visit.

The conditional logistic regression analysis of individuals who opted out versus those who attended programme clinic regularly showed that the possibility of opting out was 4.9 [95% CI:

1.78-13.6, ($p=0.002$)] times more in individuals whose CD4 showed declining trend and 8.8 [95% CI: 3.33-23.27, ($p<0.001$)] times more in individuals who received treatment for less than a year (Table 1). After the telephonic contact, it was observed that 64 (56%) individuals who opted out could not be contacted due to either wrong numbers or switching off the phones or not receiving the calls. Of the 51 (44%) individuals who could be contacted; 23 (45%) reported that they continued the treatment, 15 (29%) were not taking treatment, 4 (8%) had died and the ART status could not be known in 9 (18%) individuals. The reasons for opting out of the treatment in individuals were inconvenience for coming to the clinic in terms of distance/financial issues/clinic timing (13), taking treatment from private sector (10), side effects of the drugs (5) and taking treatment from other government programme clinic (3). Overall, sixteen (14%) individuals replied and informed that they will visit the clinic as per their convenience for taking the medicines. The data were analyzed based on duration of ART and opting out of the treatment and it was seen that 43 (37%) individuals opted out within 6 months of ART initiation and the number declined as the duration increased.

Table 1: Predictors of Opting Out of the Programme among Individuals on ART in the Programme Clinic at Pune, India

Characteristics	Opted Out (n=115)	Regular (n=230)	Univariable		Multivariable	
			OR (95% CI)	P-value	Adjusted OR (95 % CI)	P-value
Education						
Illiterate	26 (22.6)	42 (18.3)	1.36 (0.75-2.46)	0.309	-	-
Literate	89 (77.4)	188 (81.7)	1			
Employment						
Yes	76 (66.1)	158 (68.7)	0.86 (0.50-1.48)	0.578	-	-
No	39 (33.9)	72 (31.3)	1			
Marital Status						
Not living with partner	48 (41.7)	90 (39.1)	1.16 (0.68-1.98)	0.584	-	-
Living with partner	67 (58.3)	140 (60.9)	1			
Income						
<2000	12 (10.4)	32 (13.9)	0.61 (0.29-1.29)	0.199	-	-
2001-5000	41 (35.7)	92 (40.0)	0.73 (0.45-1.21)	0.223	-	-
>5000	62 (53.9)	106 (46.1)	1			
CD4 at Registration						
<200	58 (50.4)	128 (55.7)	0.99 (0.54-1.82)	0.967	-	-
201-350	36 (31.3)	56 (24.3)	1.41 (0.72-2.74)	0.316	-	-
>350	21 (18.3)	46 (20.0)	1			

Continued...

Characteristics	Opted Out (n=115)	Regular (n=230)	Univariable		Multivariable	
			OR (95% CI)	P-value	Adjusted OR (95 % CI)	P-value
TB at Registration						
Yes	19 (16.5)	34 (14.8)	1.14 (0.62-2.10)	0.673	-	-
No	96 (83.5)	196 (85.2)	1			
ART Side Effects						
Yes	31 (27.0)	52 (22.6)	1.27 (0.75-2.15)	0.366	-	-
No	84 (73.0)	178 (77.4)	1			
ART Initiation Regimen						
Zidovudine based	71 (61.7)	132 (57.4)	0.90 (0.48-1.68)	0.736	-	-
Stavudine based	20 (17.4)	57 (24.8)	0.59 (0.28-1.25)	0.168	-	-
Tenofovir based	24 (20.9)	41 (17.8)	1			
Change in CD4 Count						
Decreased	17 (15.6)	15 (6.6)	5.17 (2.15-12.40)	<0.001	4.93 (1.78-13.60)	0.002
No change	41 (37.6)	14 (6.1)	14.06 (5.98-33.05)	<0.001	2.46 (0.83-7.27)	0.104
Increased	51 (46.8)	199 (87.3)	1	-	1	-
Duration on ART						
<= 1 year	65 (56.5)	22 (9.6)	13.83 (6.60-28.97)	<0.001	8.80 (3.33-23.27)	<0.001
>1 year	50 (43.5)	208 (90.4)	1	-	1	-

Discussion:

As the national programme is scaling up, retention is one of the major challenges in the treatment cascade. Retention in care is necessary to reduce morbidity and mortality by monitoring treatment

adherence, drug toxicities and substitutions and identify the development of treatment failure and initiation of second line regimen [13]. It also provides additional benefits through social

support and secondary prevention messages that can help patients navigate a lifelong and complicated infection [14].

There are reports from ART centers in India on outcomes of patients taking antiretroviral therapy that include prevalence and reasons for loss to follow up [4, 15, 16]. The reports on prevalence of transfer out and opted out individuals have been published in the treatment cascade [3, 17], but the data on predictors of 'opted out' individuals with universal definition is scanty. This study reported the prevalence and predictors of opted out individuals and has highlighted an important issue regarding requirement of guidelines on them for improving the retention.

Studies from developed and developing countries have mentioned that the terms 'loss to follow up' and 'disengagement from care' are used as synonym for individuals who are taking ART from the clinics and have not reported to the clinics for 180 days but the clarity on the definition of 'opted out' is lacking [6-8]. Our national operational guidelines for ART Centres lack the clarity in defining opted out individuals who no longer wish to continue their treatment from the programme clinic and the efforts that need to be taken for retaining these individuals. The average reported prevalence of opted out individuals from programme clinic ranges around 0.2% [3]. So this results in a sizable number if the total population on ART in the country is considered.

Our analysis showed that the individuals with declining CD4 counts were more likely to be opting out of the programme though they were not eligible for switching to second line treatment as per the programme criteria of immunological failure [18]. This highlights the fact that the counseling at every visit needs to be strengthened

to prevent patients from opting out from treatment. Also, this could be minimized by introducing routine viral load monitoring in the national programme which can help to discriminate between treatment failure and non-adherence. Viral load monitoring will give a measure of understanding, control and motivation to adhere to treatment and understand HIV infection to the individuals [19]. Subsequent to this, it is expected that the number of individuals opting out of the programme will be minimized based on changes in the CD4 counts.

Our findings showed that the individuals who are initiated on ART within a year are more likely to be opted out as compared to others. The published reports lack the data on 'opted out' that can be compared to these results. But the data on early loss to follow up in a study conducted in Togo has mentioned that around 23% patients among loss to follow up were within a year and factors associated with the early loss to follow-up were age, sex, clinical WHO stage III or IV, presence of opportunistic infection, and type of HIV care center [20]. A study conducted in Nigeria has reported that in settings with limited resources, early adherence patterns as well as CD4 counts and unsuppressed viral load, at any time point in treatment are predictive of loss and serve as effective markers for developing targeted interventions to reduce rates of attrition [21]. Our national counseling guidelines on antiretroviral drug adherence need revision based on the duration of ART instead of having it uniform irrespective of the treatment period. This will help to address various issues in the course of treatment and prevent patients from opting out or being lost from the treatment cascade.

When HIV TB programmes are going hand in hand and the ART centres across the country have started providing antitubercular treatment and INH prophylaxis, strengthening the retention strategies will not only help in preventing drug resistance to ART but also to antitubercular drugs. The data from telephonic contacts among opted out individuals showed that majority of them had difficulties in being contacted due to various reasons. However, it was important to note that some of them informed that they would visit the centre. This indicates that the efforts need to be taken for retaining individuals who were not willing to continue their treatment in the programme but may change their opinions after certain duration. The interventions can be planned after conducting systematic multicentre studies to improve the retention of opted out patients. The counselors and the clinic staff should address important issues like inconvenience in approaching the programme clinic and side effects of the drugs leading to opting out from the treatment. The counselors should inform all the individuals about the availability of the cost concession in public transport so that financial burden can be reduced. The possibility of side effects should be explained prior to ART initiation and more time should be given for management and counseling related to the side effects of the ART.

This study has some limitations. The opted out number was small and the study was conducted among individuals in one centre so the results cannot be extrapolated to a larger population. Also, adequate power to identify predictors in our study could not be stated.

This is the first report on opted out individuals to the best of our knowledge. If sizeable number of opted out individuals are not taking treatment, it has a ramification for the program. With test and treat antiretroviral treatment guidelines, it is essential to study the factors that predict opting out from the treatment in addition to loss to follow up.

Conclusion:

The counseling should be strengthened among individuals initiated on antiretroviral therapy within one year and those who show decline in CD4 counts. The efforts should be taken to address the issues of individuals not willing to continue treatment from the programme clinics (opted out). It is important to incorporate these in the national operational guidelines for ART services. It is also essential to strengthen the system of tracking the opted out individuals in the programme which will help in retaining the patients in the treatment.

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