

Clinical and Immunological Benefits of ART among PLHA Attending ART Clinic, Thiruvananthapuram

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ABSTRACT

Published on 24th September 2009

With the advent of anti-retroviral therapy HIV AIDS has become a chronic manageable disease. It has been shown to be beneficial in many fronts in AIDS management. In Kerala state (S.India), free ART is being provided for the last few years through government medical college hospitals. Around 250 PLHA attend ART clinic at Government Medical College Hospital, Thiruvananthapuram every month. This study looked into the benefits of ART as experienced by PLHA.

Methods: 140 PLHA attending ART clinic were examined and history of illness, ART, side effects, well being and opportunistic infections were taken. Present weight and CD4 counts were compared with previous ones. Analysis was done using epi-info.

Results: Mean duration of infection was 4 years. Mean duration of ART was 6 months. Only 22.9% patients reported any adverse reaction. 41.4% people reported that ART was very much useful. 57.9% people had reduction in opportunistic infections. Mean increase in weight was 3.36 Kg (p value of 0.000). Mean increase in CD4 count was 171 (p value of 0.000).

Conclusions: ART helps in decreasing the morbidity of the disease significantly. It gives the patient a state of well being and protects from opportunistic infections. Adverse effects are minimal.

Keywords: Anti-Retroviral therapy, Side effect, Opportunistic Infection, People Living with HIV AIDS

*See End Note for complete author details

BACKGROUND

In the early years of the HIV epidemic, control programs focused mainly on prevention of infection. Prevention failures of earlier days have now transformed in to care needs of today. Already, there is an urgent need for health care for people living with HIV/AIDS. A large proportion of hospital beds are occupied by patients with HIV infection in many parts of the world and given the chronic nature of the disease and the dynamics of the epidemic, the burden of HIV on the health care system will increase in the future. With the advent of Anti-retroviral therapy HIV/AIDS has become a chronic manageable disease. The anti retro viral drugs are establishing their role as agents which can delay the progression from HIV to AIDS and can give a reasonably good quality of life to AIDS patients. It has been shown to be beneficial in many fronts in AIDS management. 3-drug regimens of highly-active antiretroviral therapy improved virologic and immunologic responses became the standard of care to maintain viral suppression and minimize the

emergence of resistant strains and, thereby, reduce the risk of disease progression and death.¹ The default rate, representing less than 1 percent² of those who started ART, suggests that patients are highly committed to treatment and that ART adherence protocols implemented at the ART Clinics are being rigorously observed. As we enter into second decade of ART, the options available are several, effectiveness has been documented but is limited, and confusion often exist over interpretation of various clinical trials and their translation into effective clinical management. Hopes are high but end of tunnel is still not in sight.

Most countries dream of providing a full range of services from antiretroviral therapy to counseling support for family caregivers, and a few developing countries, come close to doing this for at least part of the population. Rapid expansion of access to antiretroviral therapy (ART) is the best available means to minimize the epidemic's damage to global health. The situation in most high-prevalence countries is far more pathetic. Kerala state in India is the first place in the country

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where the state government started providing free ART to all PLHA. Here, free ART is being provided for the last four years through government medical college hospitals. Around 250 PLHA attend the ART clinic at Medical College Hospital, Thiruvananthapuram every month. This study looked into the benefits of ART as experienced by PLHA attending ART Clinic, Medical College Hospital, Thiruvananthapuram.

OBJECTIVES

1. Study on the Clinical, Immunological and Perceived benefits of ART among PLHA attending ART Clinic, Thiruvananthapuram
2. Study on the epidemiological profile of PLHA Attending ART Clinic

MATERIALS AND METHODS

124 PLHA attending ART clinic were interviewed and history of illness and anti retroviral therapy, its side effects, well being and opportunistic infections after ART were taken. Their present body weight and CD4 counts were compared with previous ones. Analysis was done using Epi-info.

People who receive ART at least for one month are included in the study after getting informed consent. People who are very sick or not willing to participate are excluded from the study.

The epidemiological profile, route of infection and the perceived benefits of ART are measured using a structured questionnaire and clinical and immunological benefits are measured by taking the increase in their body weight and CD4 count.

STUDY SETTING

ART clinic in Government Medical College Hospital, Thiruvananthapuram is the one among five such clinics in the state. It caters to the need of people from three southern districts of Kerala. There are around 10 to 12 persons attending ART clinic every day. Of which new cases are send for CD4 estimation and after getting the results treatment is planned.

RESULTS

Mean duration of infection was 4 years. Mean duration of ART was 7 months. Only 22.9% patients reported any adverse reaction. 41.4% people reported that ART

was very much useful. 57.9% people had reduction in opportunistic infections. Mean increase in weight was 3.36 Kg (p value of 0.000). Mean increase in CD4 count was 171 (p value of 0.000).

EPIDEMIOLOGICAL PROFILE

Age distribution

Table 1. Age distribution of Participants

Age in years	Frequency	Percent
1-14	12	9.7
25-34	39	31.5
35-44	54	43.5
45-54	15	12.1
55-64	3	2.4
75-84	1	.8
Total	124	100.0

A great majority of people (75%) with HIV infection belong to the age group 15-44yrs. Mean age is 35.2 (± 12.5).

Sex distribution

80% of females contracted the infection from their spouse. And 60.8% of males think they get the infection through unsafe sex with CSW.

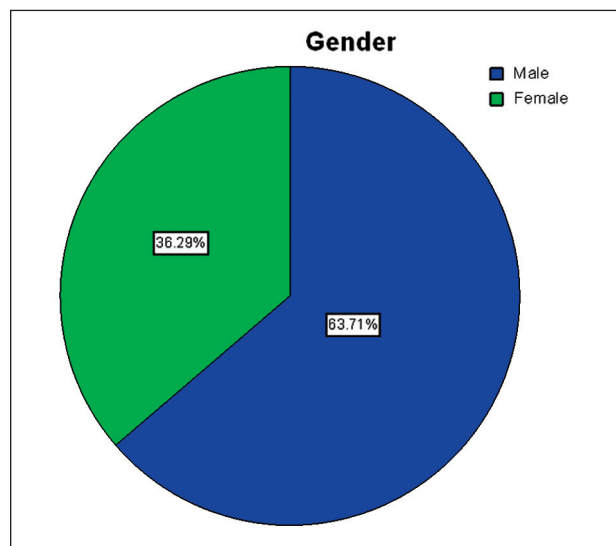


Figure 1. Sex distribution of participants

Socio economic status

Over 70% of the people attending ART clinic were belong to low socio economic group. No persons belong to high SES. Only 2.4% were illiterate and majority (62%) educated up to secondary school. Also majority (50%) were having no regular job at present.

Present Occupations	Frequency	Percent
Children	12	9.7
Unemployed	62	50.0
Unskilled	16	12.9
Semiskilled	10	8.1
Skilled	12	9.7
Clerk / Shop / Farm worker	10	8.1
Semiprofessional	2	1.6
Total	124	100.0

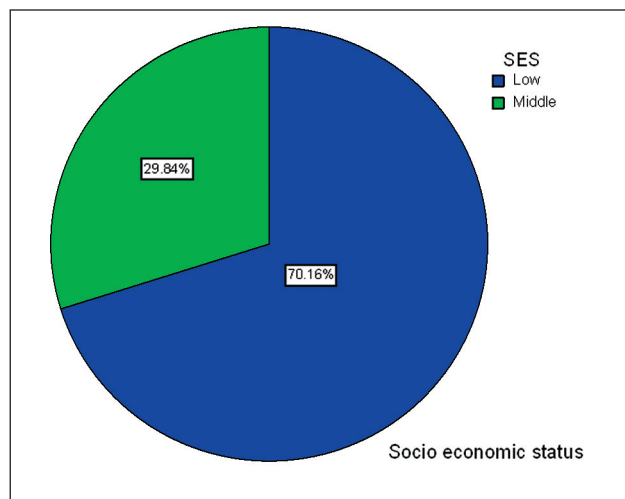


Figure 2. Socio Economic Status

HIV detection

For 56% of participants HIV was detected during investigation for other illnesses.

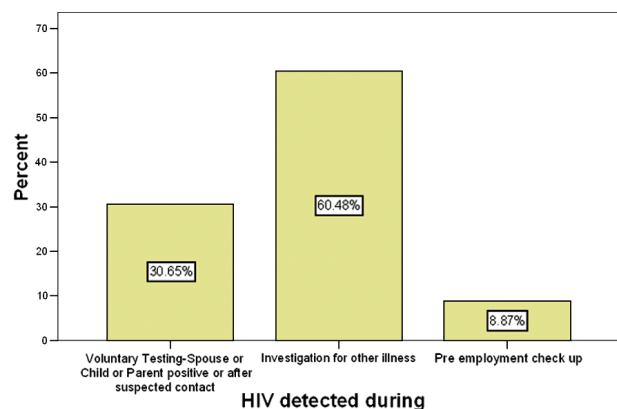


Figure 3. Mode of detection of HIV

Adverse effects

Adverse reactions	Percent
Nil	72.7
Nausea and or Vomiting	7.5
Rashes	10.7
Others (Head ache, giddiness, constipation etc)	9.1
Total	100.0

A majority of participants (72.7%) did not report any immediate adverse reactions to ART. The commonest adverse reaction reported was rashes (10.7%) followed by nausea and vomiting (7.5%).

Persistent reaction after ART (>1 month duration)

	Frequency	Percent	Valid Percent
No reaction	120	85.7	98.4
Reaction present	2	1.4	1.6
Total	122	87.1	100.0
Missing System	18	12.9	
Total	140	100.0	

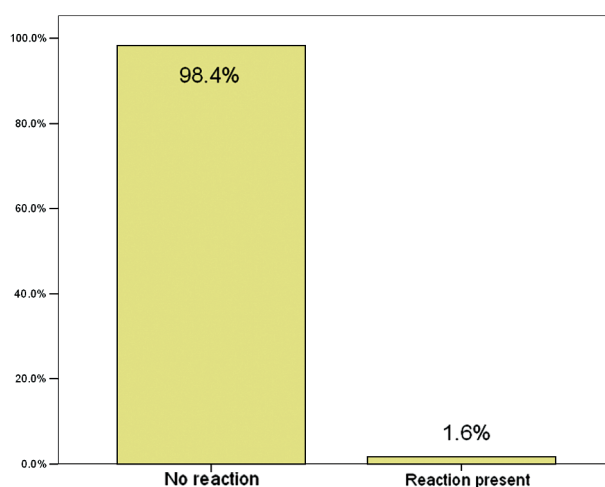


Figure 4. Persistent Reaction after ART

Perceived benefits of ART

Benefits of ART were measured in terms of the perception of people who received ART for at least one month. The clinical and immunological benefits were measured by taking their body weight and CD4 count and comparing it with pre-ART values. The perception

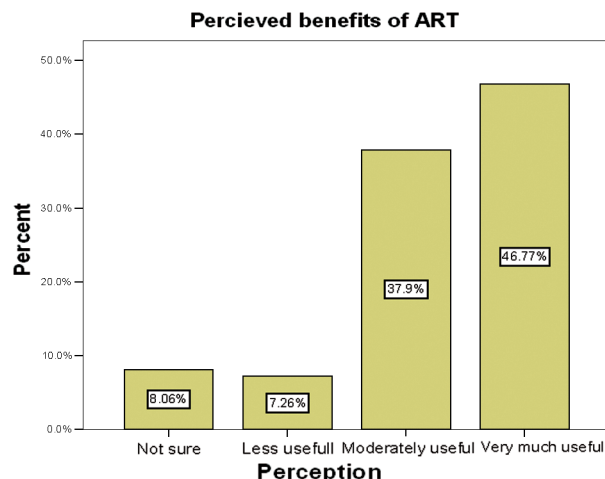


Figure 5. Perceived benefits of ART

score will be high when they consider ART as a very much useful therapy. We ask them whether they feel any difference after starting ART. If the answer is that they can work normally, attend family/public functions and enjoy life as before getting contracted with HIV/AIDS; we give the highest score (very much useful). And if they feel a sense of well being and they do not get other infections frequently and the symptoms are relieved, we group them under “useful”. The third group feels that there is no benefit at all. The fourth group is not sure.

Overall, immunologic (CD4 count) and clinical responses (weight gain, reduction in opportunistic infections) have been positive, here we have studied a subset of patients who had completed at least six months on ART to assess immunologic and clinical responses. In some studies, the median CD4 count increased from 108 at baseline to 234 at Ghana,³ and it in Rwanda, the median CD4 increased from 134 to 225. Clinical responses have also been encouraging. Median weight of patients increased from 51 to 58 kilograms in Ghana, from 56 to 62 kilograms in Kenya, and from 53 to 56 kilograms in Rwanda. For another major indicator of clinical response, the incidence of opportunistic infections, the percentage of patients on ART with candidiasis, chronic diarrhea, herpes zoster, Kaposi’s sarcoma and tuberculosis dropped sharply between baseline and the six-month clinical follow-up. The slight increases reported in cryptococcal meningitis and pneumonias are likely attributable to improved clinical diagnosis. Identification and treatment of patients earlier in the course of their illness and increased use of ART could improve probability of survival and decrease drug resistance.⁴

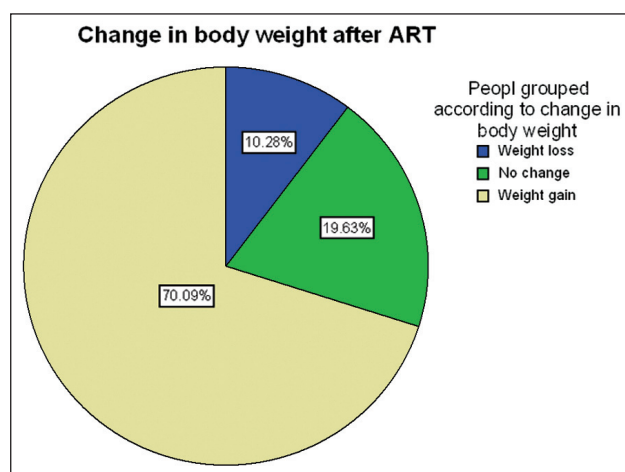


Figure 6. Perceived benefits of ART in managing Opportunistic Infections

Benefits of ART in managing Opportunistic Infections

The benefits of ART are perceived to be very much useful in managing OI. There is significant reduction in OI after the ART. Over 78.2% persons who had at least one OI before getting ART and OI persisted only in 20.16% after ART for at least one month. 58.06% had managed to cure the OI (Chi-square value = 8.716, df=1 and p value = 0.003).

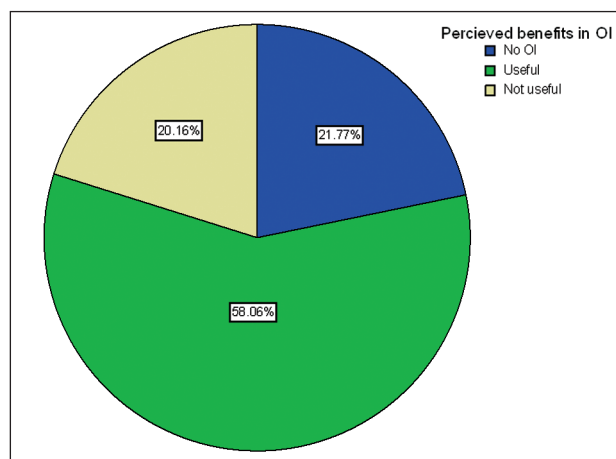


Figure 7. Change in body weight after ART

There is significant weight gain noticed in 70.09% of people (Chi-square = 2369.413 df=1890 p value=0.000). Mean weight gain is 4.15Kg (± 5.78).

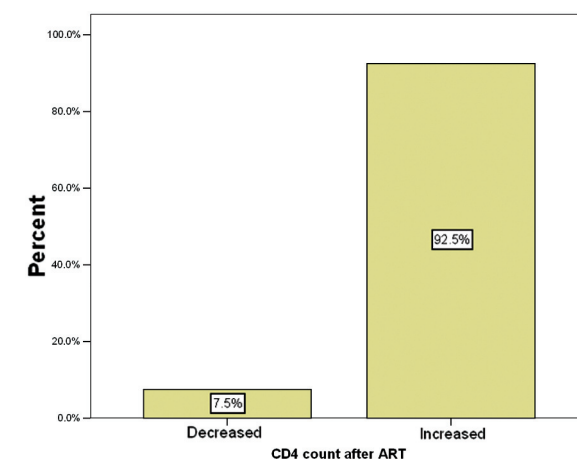


Figure 8. CD4 count after ART

Change in CD4 count

CD4 count is increased in 92.5% people. Mean increase is 175.73 (±133.5). There is no significant association between the duration of ART and increase in CD4.

STRENGTHS AND LIMITATIONS

Strengths

There are only 1500 patients registered and receiving ART in the total five ART Clinics of the state. Of which around 250 from three southern districts of Kerala are attending in the ART clinic, Thiruvananthapuram regularly. Their adherence to treatment is reported to be >95%. Body weight is measured and recorded every month and the CD4 count is done every six months. Opportunistic infections are diagnosed and treated at the Infectious disease OP of MCH and TB is treated at the DOTS centre there itself. So the PLHA persons attending ART clinic will get all necessary medical care under one roof. So all the variables required for the study could be accurately measured from hospital records and documents available with the patients.

High prevalence of adult literacy even among poor socio economic groups made it easy to assess perceived benefits through the interview method.

Limitations

As the people belonging to high socio economic category rely on private institutions than the government medical college, our study group comprised only of middle and low socio economic categories. This might have excluded the effects that the high SE group might have had on the results. The long term side effects ART on all subjects could not be explored due time constraints.

CONCLUSION

ART helps in decreasing the morbidity of the disease significantly. It reduces the virus load in the body, improves health significantly, protects from opportunistic infections and reduces the risk of becoming seriously ill at least in the short term. Even though the drugs have not worked so well on all, their adverse effects are minimal.

END NOTE

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Conflict of Interest: None declared

Cite this article as: Althaf Ali, Anoop Lal Amrith Lal, Suni KA, Saroush Kumar, Josna KJ. Clinical and Immunological Benefits of ART among PLHA Attending ART Clinic, Thiruvananthapuram. Kerala Medical Journal. 2009 Sep 24;2(3):76-80

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