

JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH

How to cite this article:

AKHILA JS, ARBIND KC, CHANDRASHEKAR R, AARATHI A, SATISH R, PRABHA A, JOHN R. Factors affecting adherence to highly active anti retroviral therapy in HIV positive patients - Southern India. Journal of Clinical and Diagnostic Research [serial online] 2010 August [cited: 2010 August 31]; 4:2875-2877.

Available from

http://www.jcdr.in/article_fulltext.asp?issn=0973-709x&year=2010&volume=&issue=&page=&issn=0973-709x&id=822

ORIGINAL ARTICLE

Factors affecting adherence to highly active anti retroviral therapy in HIV positive patients - Southern India

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ABSTRACT

Introduction: According to the National AIDS control organization (NACO) guidelines, the percentage of adherence to the HAART regimen should be >95% in order to get the maximum therapeutic effect and to decrease viral resistance. That means that a patient can miss only a single tablet unexpectedly in the course of one month. The motive behind the present study was to analyse the factors which affect the patient's adherence to Highly Active Antiretroviral Therapy in HIV positive patients in a tertiary care hospital in Southern India.

Methods: A prospective study was conducted after obtaining approval from the institutional ethical committee and after obtaining informed consent from patients in a tertiary care hospital in Southern India from July 2006 till November 2007. Relevant data from HIV positive patients on the HAART regimen for a minimum of 1 month was recorded. Children were excluded from the study. Chi Square test was applied for the statistical analysis of data.

Results: We obtained data from 313 HIV +ve patients on HAART during the study period. The patients consisted of 226 males and 87 females. High adherence was observed in females 64 (73.6 %) $P < 0.02$, $X^2 = 5.18$ as compared to males and this was due to the greater family support offered to them $P < 0.008$, $X^2 = 6.9$. 135 (59.7%) of males showed high adherence due to the presence of a greater degree of health consciousness in them $P < 0.008$, $X^2 = 6.9$. The reasons for low adherence in 91 (40.3 %) males were the social stigma associated with their visit to ART centres in 74 (81.3 %) , lack of family support in 6 (6.5 %) and financial problems in 11 (12 %). 23(26.4%) females had low adherence due to depression, the distance from the ART centers was the reason in 17(73.9%), lack of family support was the reason in 1(4.3%) and financial problems were the reason in 5 (21.7%). Financial problems as the causes for nonadherence have been overcome presently, since the medicines are being given free of cost since June 2007.

Conclusions: In the present study, females showed a higher degree of adherence due to family support and in males, the reason for a high degree of adherence was health consciousness. Time should be spent by the staff on duty at the drug dispensing centres to explain the benefits of adherence and the results of non adherence to the drug regimen to the patients and their caretakers to improve patient compliance. Dispensing the drugs free of cost has improved patient compliance in a vast majority of patients.

Key Words: adherence, HAART

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Introduction

Highly active antiretroviral therapy (HAART) with a combination of 3 or more drugs can replace monotherapy. The most commonly employed initial regimens are 2-Nucleoside Reverse Transcriptase Inhibitors + 1-Protease Inhibitor; 2- Nucleoside Reverse

Transcriptase Inhibitors + 1-Non Nucleoside Reverse Transcriptase Inhibitors or 3-Nucleoside Reverse Transcriptase Inhibitors [1], [2]. The choice has to be made on the basis of efficacy, durability, tolerability, convenience, drug interaction, impact on future options and cost. Initially, anti-HIV drugs were used singly one after the other, as each failed in a patient due to the emergence of resistance. Understanding the biology of HIV infection and the availability of several potent drugs belonging to different classes, has mandated highly active anti-retroviral therapy (HAART) with a combination of 3 or more drugs.

According to the National AIDS control organization (NACO) guidelines, the percentage of adherence to the HAART regimen should be >95% in order to get maximum therapeutic effect and to decrease viral resistance. That means that a patient can miss only a single tablet unexpectedly in the course of one month [3], [4]. If there is low adherence, there is failure to suppress the virus and there is drug resistance and increased morbidity and mortality [4].

The present study was planned to analyse the factors affecting the adherence to the HAART regimen by HIV positive patients.

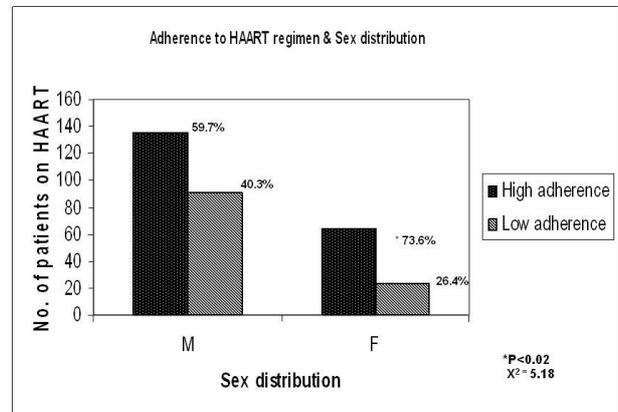
Methods

A prospective study was conducted at a tertiary care hospital in southern India from July 2006 – November 2007 after obtaining approval from the institutional ethical committee and after obtaining informed consent from the patients. Sex difference in the number of patients who were adherent and non-adherent and the reasons for the same were noted down and they were analysed statistically using the Chi-square test.

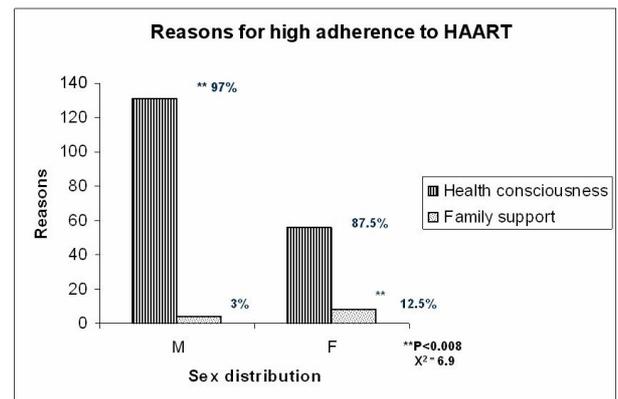
Results

The total no. of HIV positive patients on the HAART regimen were 313. There were 226 males 87 females. All of them were literate. High adherence was seen in females as compared to the males $P < 0.02$, $\chi^2 = 5.18$ [Table/Fig 1]. The reason for high adherence in 73.6 % of the females was the greater degree of family support (12.5%) ($P < 0.008$, $\chi^2 = 6.9$) and the reason for high adherence in 59.7% males was the higher degree of health consciousness, since they were informed about

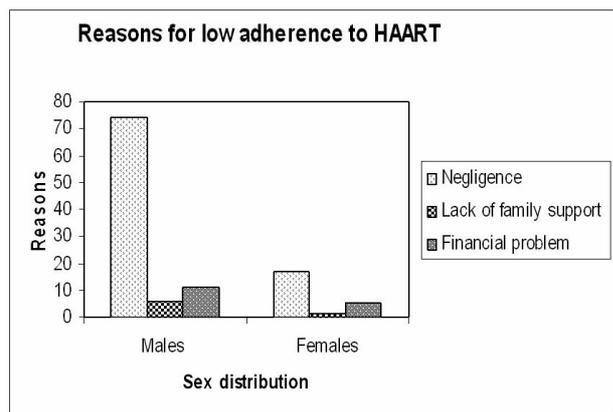
the advantages of high adherence $P < 0.008$, $\chi^2 = 6.9$ [Table/Fig 2]. The reasons for low adherence in 91(40.3 %) males were the social stigma associated with the visit to ART centres in 74 (81.3 %), lack of family support in 6 (6.5 %) and financial problems in 11 (12 %). In the 23(26.4%) females who had low adherence, the reasons were depression and lack of motivation to travel the distance to reach the ART centers in 17(73.9%), lack of family support in 1(4.3%) and financial problems in 5 (21.7%) [Table/Fig 3]. Financial problems as the causes for nonadherence have been overcome presently, since the medicines are being given free of cost since June 2007.



(Table/Fig 1) Adherence to HAART regimen and sex distribution



(Table/Fig 2) The reasons for high adherence to HAART



(Table/Fig 3)The reasons for low adherence to HAART

Discussion

With the HAART regimen, HIV replication is inhibited, the plasma level of HIV-RNA is reduced to undetectable levels and patient survival is prolonged. But the regimen is complex and lifelong because the HIV virus can lie latent in the memory T-cells, can be integrated into the host genome and can form a source of potential reactivation if the drugs are stopped [2]. According to the Government of Karnataka, Department of Health and Family Welfare [4], the predictors of high adherence are the availability of emotional and practical life support, the ability to fit medication into the daily routine, understanding that poor adherence leads to resistance, the recognition that taking all doses is important and comfort in taking doses in front of other people. The predictors of low adherence [4] are poor clinician-patient relationship, active drug and alcohol use and active mental illness, particularly depression and lack of patient education.

In the present study, high adherence was seen in females when compared to males $P < 0.02$, $X^2 = 5.18$ [Table/Fig 1]. The reason for high adherence in 73.6% of the females was a greater degree of family support (12.5%) ($P < 0.008$, $x^2 = 6.9$) and the reason for high adherence in 59.7% of the males was a higher degree of health consciousness, since they were informed about the advantages of high

adherence $P < 0.008$, $x^2 = 6.9$ [Table/Fig 2]. The reasons for low adherence in 91 (40.3%) males were the social stigma associated with visit to ART centres in 74 (81.3%), lack of family support in 6 (6.5%) and financial problems in 11 (12%). In 23 (26.4%) females who had low adherence, the reasons were depression and lack of motivation to travel the distance to reach the ART centers in 17 (73.9%), lack of family support in 1 (4.3%) and financial problems in 5 (21.7%) [Table/Fig 3]. Financial problems as the causes for nonadherence have been overcome presently, since the medicines are being given free of cost since June 2007.

Identifying the patients with reasons for low adherence and explaining to them that the outcome of low adherence would be failure to suppress the virus, drug resistance and increased morbidity and mortality, could improve patient compliance.

Conclusions

In the present study, females showed higher degree of adherence due to family support and males due to health consciousness. Time should be taken to explain the benefits of adherence and the results of non adherence to the regimen to the patients and care takers at the drug dispensing centres in order to improve patient compliance. Dispensing the drugs free of cost has undoubtedly improved compliance in both genders.

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