

MEDICATION ADHERENCE ON ANTIRETROVIRAL THERAPY AND PSYCHOSOCIAL IMPLICATIONS OF HIV IN AIDS PATIENTS

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Abstract— India has the third largest HIV epidemic in the world. In 2015, the prevalence in India was an estimated 0.26%. This figure is small compared to many middle income countries but because of India's huge population (1.2 billion) this equates to 2.1 million people living with HIV. In the same year, an estimated 68,000 people died from AIDS related illness.

A prospective interactive study was carried out in Government District Head Quarters Hospital, Krishnagiri. PLHA visiting ART centre were screened. Data collection form was prepared and data was recorded after informed consent. Evaluation of medication adherence and assessment of psychosocial implications were carried out

A prospective interactive study was carried out in Government head quarters hospital, Krishnagiri .PLHA visiting ART Centre in Government head quarters hospital, Krishnagiri were included in the study. A total of 320 patients were screened. Out of which 290 PLHA were selected according to inclusion and exclusion criteria. Study was carried out over a period of 6 months in 2017 aimed at evaluation of extend of medication adherence, identify the barriers and also analyze the psychosocial implications of the PLHA in their daily life.

Out of the 290 surveyed participants 51.03% were males and 48.97% were females. Results shows the quality of life 6.2% found it to be very poor, 28.3% found it to be poor, 30.3% neither poor nor good, and 32.8% found it good and 2.4% were very good. On being asked about the extent to which the patient felt accepted by others, 29% were not at all accepted, 25% a little, 21% moderately, 20% mostly and only 5% were completely accepted. Among the barriers to adherence listed by the respondents 27.60% were away from home, 19% simply forgot, 15.84% were busy with other things, 5.43% ran out of pills, 4.52% thought they felt better, 4.07% said they had too many pills to take, 3.62% wanted to avoid side effect, 3.62% had problems taking pills at specific time, 2.7% felt depressed / overwhelmed, 2.71% fell asleep/ slept through dose time, 2.71% did not want others to notice them taking medicine, 2.26% felt like drug was harmful or toxic, 2.26% felt ill or sick respectively.

CONCLUSION: Our study concludes that there is a close relationship between quality of life and adherence. As quality of life becomes better, medication adherence also increases. The study also shows the moral support from family increases medication adherence.

Index Terms— acquired immune deficiency syndrome (AIDS) , anti retro viral therapy

, human immuno deficiency virus (HIV), medication adherence, patient information on use of medicine

,prospective interactive study, psychosocial implications, quality of life, viral replication

1 INTRODUCTION

WHAT IS HIV AND AIDS?

The human immuno deficiency virus (HIV) infects cells of the immune system, destroying or impairing their function. Infection with the virus results in progressive deterioration of the immune system, leading to "immune deficiency". The immune system is considered deficient when it can no longer fulfil its role of fighting infection and disease. Infections associated with severe immune deficiency are known as "opportunistic infections" because they take advantage of a weakened immune system.

Acquired immune deficiency syndrome (AIDS) is a term which applies to the most advanced stages of HIV infection. It

is defined by occurrence of any of more than 20 opportunistic infections or HIV related cancers.

ANTI RETRO VIRAL THERAPY

ART is treatment of people infected with human immune deficiency virus (HIV) using anti HIV drugs. The standard treatment consists of a combination of at least three drugs (often called 'highly active anti retroviral therapy' or HAART) that suppress HIV replication. Three drugs are used in order to reduce the likelihood of virus developing resistance. ART has the potential both to reduce mortality and morbidity rates among the HIV infected people, and to improve their quality of life.

The aim of anti HIV therapy is to cause maximal suppression of viral replication for the maximal period of time that is possible. For this, ARV drugs are always used in combination of at least three drugs and regimens have to be changed over time due to development of resistance lifelong therapy is required.

ART INITIATIVE IN INDIA

There are an estimated 2.31 million people living with HIV/AIDS in India. As per estimates, at any given time approximately 10-15% of the total number of people with HIV infection is expected to be in need of ART. This means that nearly 3-4 lakh patients will need ART presently. Till now the high costs and complicated treatment regimens were the major barriers in introducing free ART under "Care & Support" component of the National Aids Control Programme. With advent of newer ARV drugs with lesser side effects and lowered costs, it was considered appropriate to introduce provisioning free ART through public sector health facilities in a phased manner. To begin with, provision of ART was launched in 8 government hospitals in 6 high prevalence states i.e., Andhra Pradesh, Karnataka, Maharashtra, Tamilnadu, Manipur and NCT of Delhi. Currently there are 228 centres providing ART.

TREATMENT INTERRUPTIONS

For many reasons, including toxicity, cost and adherence, patients and clinicians have been interested in considering 'drug holidays' or treatment interruptions. However, this strategy is no longer recommended in routine practice. It is now recognized that there are dangers associated with this approach because CD4 decline, disease progression, mortality related to co-morbidities, for example, cardiovascular disease and viral load rebound associated with increased transmission risk and a sero conversion-like syndrome. Further as different anti HIV medications have different half lives; there may be a risk of functional monotherapy, particularly with NNRTIs, and the development of resistance if combinations are stopped abruptly in an unplanned fashion.

Anti retroviral therapy is quite effective in suppressing viral replication, delaying the progression of disease and has changed the management of HIV disease dramatically, yet issues of adherence, toxicity, emerging resistance and cost of second line drugs dominate the scenario. The HIV care is still very complex and is rapidly evolving. The future options include new group of drugs, better strategies but the correct usage of these agents, their timings of initiation and proper monitoring is of utmost importance if we want these drugs to remain effective. The therapy is no doubt panacea for those probably AIDS vaccines are the key to halting the progression of the epidemic of this dreaded disease.

MEDICATION ADHERENCE

WHO usually defines adherence to any treatment as "the extent to which a person's behaviour taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a healthcare provider. For example, adherence to dosage means number of pills taken as prescribed, adherence to schedule means taking pills consistently on time and finally dietary adherence is taking pills as prescribed with/after/or before meal.

Inadequate adherence increases the risk of drug resistance and treatment failure. Therefore, optimum adherence is essential for sustainable success of ART. Taking $\geq 95\%$ of prescribed doses is recommended for optimal virologic suppression and minimizes the rate of treatment failure and decreases risk of virologic failure by more than 50%.

WHY ADHERENCE IS NEEDS TO BE DIFFERENT IN HIV DISEASES?

About 80% adherences may be sufficient to achieve therapeutic goals in many chronic disease states (eg: hypertension, etc.). However, this level of adherence is inadequate in treatment of HIV. A more than 95% adherence is necessary to achieve a viral load of <400 copies/ml in 81% of patients. A 10% reduction in adherence is associated with a doubling of HIV RNA level. HIV multiplies rapidly in the absence of ARVs, or when there are sub-therapeutic levels of ARVs. With the increasing viral load in the presence of ARVs, more mutations may occur, causing resistance to the ARVs. Once resistance develops, the ARVs are no longer effective and viral replication increases, CD4 Count drops, and clinical illness develops. The very short life cycle of ARV (1-2 days) means that whenever there is any non-adherence, viral load increases very quickly within 3-7 days, and sometimes even faster. In a prospective observational study of therapy of 950 naive patients treated with triple- combination therapy it was found that for every 10% decrease in adherence there was a 16% increase in HIV related mortality.

ROLE OF PATIENT INFORMATION ON USE OF MEDICINE

Adequate information on medicines enables patients to use them in an appropriate, safe and judicious way. Incomplete and inadequate information leads to serious health and economic consequences. Clinical Pharmacist can provide information either verbal or written. Information and counselling can be provided at the time of dispensing medicines. Information provided could be vital/essential viz. Side effects, concomitant medicines, purpose of each medicine, how to take each medicine-dose, time, frequency, before or after meals, specific precautions to be taken, what side effects can be expected, when to report to the doctor, what to do if a dose is missed and how to use devices: MDI, rota-inhalers, etc.

THE PSYCHOSOCIAL EFFECTS OF DISCLOSING A POSITIVE HIV

The disclosure of a positive HIV status is fraught with difficulties. Unlike other chronic disease, such as for example cancer, the management of the illness and subsequent disclosure of HIV infection is informed by both individual and societal attitudes and beliefs and perceptions around HIV and AIDS. For long time HIV and AIDS have been associated with not only homosexuality, but also intravenous drug use and infidelity; largely perceived by society as not only degenerative, but also immoral HIV and AIDS remain shrouded in both secrecy and shame in some communities, and there is often an internal struggle about whether or not to disclose upon discovery of positive HIV diagnosis. Disclosure can also affect the quality of close relationship, depending on whether the recipient reacts with concern or disinterest.

The disclosure of a positive HIV diagnosis to sexual partners

has become essential in curbing the spread of HIV infection. Some studies have found that women who are HIV positive have greater difficulty disclosing their positive HIV status to sexual partners than do men, as the decision to disclose is likely to be influenced by their evaluation of the positive or negative consequences of disclosure.

Reasons for the disclosure of a positive HIV diagnosis to family and friends may include the desire to preserve honesty in the relationship as well as to get emotional and social support. The motivation to disclose a positive HIV status to family member or loved ones initially involves an assessment of whom to disclose to, evaluate the quality of one's relationship, weighing and anticipating potential reactions, and is largely influenced by one's evaluation and perception of a positive outcome .

Some positive consequences of disclosing a positive HIV status may include less social isolation and increased social support. An individual is also able to seek medical information and care, as well as social and mental health care services. This includes access to many treatment programmes and other forms of care such as home based care and specific social grants , which have become dependent on disclosure of a positive HIV diagnosis.

For many women negative consequences may also be associated with disclosure. Negative consequences of disclosing a positive HIV status can include disruptions in interpersonal and intimate relationships and the potential loss of otherwise supportive relationship. There is thus an initial adjustment period to the positive HIV diagnosis, entwined with the implications of having to live with HIV , followed by a process of analyzing the costs versus benefits of disclosure. This process of adjustment to a positive HIV diagnosis as well as evaluating potential disclosure recipients can induce a great deal of stress and anxiety for the individual.

Studies have shown that a supportive response to disclosure of one's positive status can lessen the effects of depression and stress and boost the immune system in counteracting the physical afflictions associated with HIV. The psychological effects of disclosing a positive HIV diagnosis play a pivotal role not only in disclosure process, but also in the well being of the HIV infected individual. Disclosure of HIV infection not only has a cathartic effect on the individual and anxiety of having to hide the illness is significantly reduced, especially if the response to the disclosure to positive.

A perceived lack of support following disclosure of a positive HIV diagnosis, especially from a significant other and or family members, can induce depression , which in turn affects the immune system's ability to fight infection, increasing vulnerability to illness.

IMPACT OF SOCIAL SUPPORT

Social support for patients with HIV/AIDS has shown a strong potential to influence HRQOL. The three major component of social support are emotional, tangible and informational support. Distinction among the different types of social support is relevant, since their functions may not be necessarily interchangeable.

Emotionally sustaining function of social support, which serves to fulfil and gratify one's need for nurturance, belong-

ing and alliances, is well recognized to buffer stress in non-HIV settings.

Overall self – perception of QOL has been shown to be a useful screening item for assessing global QOL. QOL relates both to adequacy of the material circumstances and to personal feeling about these circumstances. As health is generally cited as one of the most important determinants of overall QOL, it has been suggested that QOL may be uniquely affected by specific disease process such as AIDS. The constellations of HIV related symptoms negatively affect the QOL for PLHA. Effective management of symptoms is important for improving QOL and potentially for maintaining a complicated daily regimen of ART.

2 AIM AND OBJECTIVE

2.1 AIM

Assessing of the Medication Adherence on ART and the Psychosocial implications of HIV in AIDS patients.

2.2 OBJECTIVE

Interacting with PLHA

Evaluating medication adherence on ART

Analysing psychosocial implications of HIV in AIDS patient

3 METHODOLOGY

STUDY DESIGN: A prospective interactive study

STUDY SITE: The study was carried out in Government head quarters hospital, Krishnagiri.

STUDY POPULATION: PLHA visiting ART Centre in Government head quarter's hospital, Krishnagiri were included in the study. A total of 320 patients were screened. Out of which 290 PLHA were selected according to inclusion and exclusion criteria.

SAMPLE SIZE: 290 PLHA were selected from 320 PLHA

STUDY PERIOD: Study was carried out over a period of 6 months.

INCLUSION CRITERIA:

Patients with HIV positive status

Patients under Anti Retroviral Therapy

EXCLUSION CRITERIA:

Newly diagnosed HIV positive patients

PLHA not undertaking ART

Patients who refused to be interviewed.

4 RESULT

Barriers	No. of Patients	Percentage
Forgetfulness	42	19
Away from home	61	27.6
Busy with works	35	15.8
Unavailability of drugs	12	5.43
Change in daily schedule	8	3.62
Felt drug as toxic	5	2.26
Slept during dose time	6	2.71
Avoiding notice of taking medication by others	6	2.71
Sickness	5	2.26
Felt better	10	4.52
To avoid side effect	8	3.62
Problem in taking pills at specified time(with meals, on an empty stomach etc)	8	3.62
Multiple drug therapy	9	4.07
Felt depressed	6	2.71

5 RELATIONSHIP BETWEEN MORAL SUPPORT FROM FAMILY AND MEDICATION ADHERENCE

Moral support from family	Medication adherence		
	Yes/No	Total no. of patients	adhered
Yes	153	16	121
No	137	100	53
Total	290	116	174

6 CHI-SQUARE TEST

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	86.784	1	.000
No. of Valid Cases	290		

The above table shows that the P value of chi-square test is less than 0.05($p = 0.000$), hence there is significant relationship between moral support from family and medication adherence. The patients with more moral support from family showed more adherence than others.

6 RELATIONSHIP BETWEEN QUALITY OF LIFE OF THE PATIENT AND MEDICATION ADHERENCE

Quality of life * Adherence						
Adherence		Quality of life				
YES/NO	Total no. of patents	Neither poor nor poor	Poor	Very Poor	good	very good
No	94	3	74	14	2	1
Yes	196	85	8	4	93	6
Total	290	88	82	18	95	7

Chi-Square Test			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.168E2	4	.000

The above table shows that the P value of chi-square test is less than 0.05 (p = 0.000), hence there is significant relationship between quality of life and medication adherence.

7 DISCUSSION

A prospective interactive study was conducted to assess the medication adherence on ART and psychological implications of HIV and AIDS patient.

Evaluation of extension of medication adherence and identify the barriers and also analyze the psychosocial implications of the PLHA in their daily life.

A total of 320 questionnaires were circulated to the patients in ART centre of the Krishnagiri District Head Quarters Hospital of which 290 were considered for the study by inclusion criteria.

Out of the 290 surveyed participants 51.03% were males and 48.97% were females. Results shows the quality of life 6.2% found it to be very poor, 28.3% found it to be poor, 30.3% neither poor nor good, and 32.8% found it good and 2.4% were

very good.

Results also shows that the health satisfaction 9.0% were very dissatisfied, 32.4% dissatisfied, 19.3% neither satisfied nor dissatisfied, 37.6% were satisfied and only 1.7% were very dissatisfied.

From all the respondents 23% were not at all blamed by others for their HIV positive status, 21% were a little blamed, 20% blamed a moderate amount, 20% very much and 15% were extremely blamed.

On being asked about the extent to which the patient felt accepted by others, 29% were not at all accepted, 25% a little, 21% moderately, 20% mostly and only 5% were completely accepted.

Of the 290 respondents 65% identified heterosexual, 4% homosexual, 13% through blood transfusions and 18% were not aware of the mode of transmission. Among them only 52.76% received moral support from family while 47.24 did not.

Regarding following the instructions of doctors only 38.6% followed it all of the time, 44.1% most of the time and 17.2% sometimes only. 32.41% agreed to be having difficulty in following the medication regimen while 67.59% did not have issues sticking to the regimen.

Among the barriers to adherence listed by the respondents 27.60% were away from home, 19% simply forgot, 15.84% were busy with other things, 5.43% ran out of pills, 4.52% thought they felt better, 4.07% said they had too many pills to take, 3.62% wanted to avoid side effect, 3.62% had problems taking pills at specific time, 2.7% felt depressed / overwhelmed, 2.71% fell asleep/ slept through dose time, 2.71% did not want others to notice them taking medicine, 2.26% felt like drug was harmful or toxic, 2.26% felt ill or sick respectively.

The findings of this study are in close relation to the study by Ankur Barua, et al., 2013, Majority of the participants with HIV/AIDS in this study were rejected by their friends and relatives when they came to know about the disease. Hence, they tried to maintain secrecy about their disease and were avoiding social gathering. This study revealed that HIV/AIDS

infection is both a medical as well as psychosocial issue. Thus, both the physiological and psychological factors are of equal importance which needs to be understood in depth by the care-givers while dealing with HIV/AIDS patients. In order to provide the most effective care, it is very important for the rehabilitation professionals to recognize the major psychosocial issues that appear at different stages of HIV/AIDS infection.

Anant Gokarn, et al., 2012, has put forward some suggestions to improve the patient's adherence to ART, which include, during counselling sessions giving up addictions, avoiding traditional medicines, addressing the apprehensions about treatment, and identifying reminder systems should be emphasized. The patients should be advised to carry medications while travelling and when away from home.

Our study concludes that there is a close relationship between quality of life and adherence. As quality of life becomes better, medication adherence also increases. The study also shows the moral support from family increases medication adherence.

CONCLUSION

The Human Immunodeficiency virus is a lentivirus that causes HIV infection and overtime leading to acquired immune deficiency syndrome.

The study was carried out to assess the medication adherence on ART and psychosocial implications of HIV in AIDS patients. The study concluded that only 40% of the PLHA surveyed followed proper medication adherence. Several barriers to adherence were also identified, it was also concluded that respondents who received moral support from family ended up having better adherence to ART. Also, the participants who exhibited better quality of life had lesser difficulty in following the medication regimen. Of the PLHA analyzed maximum number of them contracted HIV through unprotected heterosexual intercourse, while somewhere also not aware of contracted the same. Most of the respondents felt socially ostracized and faced blaming from friends and family. Lack of social support reflected directly on the patients feeling about themselves and their approach to life overall.

Based on the study a patients information leaflet was developed to be distributed to the patients.

Through our study we would like to suggest that psychosocial support should be extended to address the ongoing psychosocial and social problems of HIV infected individuals, their partners, families and care givers. Awareness should also be generated regarding importance of adherence and risk of developing resistance in case of failure to adherence.

RECOMMENDATIONS

From our study we suggest that,

1. NACP formulators and other authorities should take necessary steps to design interventional programmes and policies in order to increase the adherence of patients and address their psychosocial implications.
2. Our findings also provide the healthcare policy makers and health authorities with baseline data that can be used in the future evaluations or re-enforcement plans and educational initiatives for improving the medication adherence to ART and improving psychosocial implications of HIV positive patients.
3. Psychosocial support should be extended to address the ongoing psychological and social problems of HIV infected individuals, their partners, families and caregivers.
4. Awareness should be generated regarding importance of adherence and the risk of developing resistance in case of failure to adherence.
5. Partners, families and caregivers should be educated and encouraged to provide moral support to PLHA.
6. A deep rooted awareness programmes should be conducted to make the public aware about the disease and the rights of PLHA.
7. The present study identified the major barriers to adherence and providers and insight in to improvements that can be made to promote adherence among the patients themselves.
8. Clinical pharmacists can play major role in creating awareness, providing counselling and evaluating the extent of medication adherence to ART and improving the psychosocial status of PLHA.

9. Mass media including social media can be brought in to use to spread awareness about AIDS. Our study also appreciates the need of conducting further such multi-centric studies involving wider sections of PLHA to estimate the magnitude of the issue so as to fill the existing gaps and strengthen effectiveness of NACP.

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