

IMPACT OF ANTIRETROVIRAL THERAPY AMONG PEOPLE LIVING WITH HIV AND AIDS

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ABSTRACT

People living with HIV/AIDS are increasing day by day. Antiretroviral therapy (ARV) has increased the health and survival prospects of people living with HIV/AIDS. ARV therapy also has wide range of side-effects. The objective of this study was to find out the quality of life, immunological status, body weight, and experience of side effects of the drugs of the clients receiving antiretroviral therapy. A descriptive study was carried out in different ART centers and NGOs/INGOs of Kathmandu Valley. Total 70 people living with HIV/AIDS who were receiving antiretroviral therapy for at least six months were selected for the study by using non-probability purposive sampling techniques. WHOQOL-HIV Instrument was adapted to measure impact of ARV on quality of life. The information regarding CD4 count was obtained by consulting the client's lab reports. ARV therapy played a significant role in improving the quality of life and immunological status of people living with HIV and AIDS. Therefore it is recommended that antiretroviral therapy should be available and accessible without any delay to all the HIV/AIDS clients who were eligible for the therapy

Keywords: *Impact of Antiretroviral Therapy, People Living with HIV and AIDS.*

INTRODUCTION

The human immunodeficiency virus (HIV) infects people worldwide and has reached pandemic proportions in about two decades since the first report of AIDS. Since 1981, an estimated 25 million people died of AIDS and 65 million have been infected worldwide due to AIDS. At the end of 2006, an estimated 39.5 million people are living with HIV infections. Out of them an estimated 2.3 million were under 15 years. South East Asia has the second highest burden of HIV in the world where an estimated 7.2 million people are living with HIV. In 2006, approximately 555,000 people died of AIDS and there were 0.77 million new infections occurred in this region. The majority of the HIV clients are in India, Indonesia, Myanmar, Nepal and Thailand¹.

Antiretroviral therapy (combination of 3 or 4 antiretroviral drugs) is the treatment options for the people infected by HIV virus which help HIV infected people to lead longer and healthier lives and improve their quality of life. The goal of HIV treatment is to reduce the amount of virus in a person's body and prevent destruction of the immune system. Nepal Government has started to provide ART service with free of cost through National Center for AIDS and STD Control since 12th February 2004. According to National Center for AIDS and STD Control report, approximately 500 people are receiving ARV therapy freely from various governmental organizations and estimated that 7000-8000 people are in

need of ARV therapy². Total 901 people were receiving ARV therapy from 14 ART centers³.

All Antiretroviral drugs have many short-term and long-term side-effects. Most of the HIV/AIDS patients who are taking antiretroviral medications experienced some side-effects on the human body. Prolonged treatment with combination regimens can be difficult to sustain because of problems with adherence and toxic effects. Even after 3 years of its start up, few studies has been documented yet regarding impact of ARV therapy on HIV/AIDS clients.

MATERIAL AND METHODS

A descriptive study was carried out in the month of Bhadra 2064 among people living with HIV/AIDS who were receiving antiretroviral therapy for at least six months from different ART centers and NGOs/INGOs of Kathmandu Valley. A total of seventy samples were selected for the study by using non probability purposive sampling technique. WHOQOL-HIV Instrument was adapted to measure impact of ARV on quality of life. The quality of life was measured in the scale of 1 to 3 where 1 indicates low, 2 indicate average and 3 indicate high quality. The information regarding CD4 count was obtained by consulting the client's lab report. All items under quality of life were scored and domain scores were transformed to

reflect a scale of 1 to 3 where 1 indicates low, 2 indicates average and 3 indicates high quality of life with higher score denoting a better quality of life. To establish the relationship, the score of overall quality of life was converted into dichotomous variable (poor and good), where score \geq mean-1SD was classified as good and score $<$ mean-1SD as poor quality of life. The data was analyzed by using descriptive statistics and chi-square and z tests were used to measure the association. The level of significance was set at 0.05.

RESULTS

Table 1 depicts the quality of life of respondents after ARV therapy. The majorities (84.29%) of the respondents were leading good quality of life and only few (15.71%) respondents were leading poor quality of life after receiving antiretroviral therapy.

Table 1: Quality of Life of Respondents after ARV Therapy (n=70)

Quality of Life	Frequency	Percentage
Good	59	84.28
Poor	11	15.71

Table 2 depicts the average mean score and quality of life of the respondents after introduction of ARV therapy. The average mean score was highest in sleeping (2.6) followed by self value (2.49), appetite (2.47), self confidence (2.47) and hopefulness (2.47). The average mean score of all elements of the quality of life was 2.37. This means that all the respondents had better than the average level of quality of life after introduction of ARV therapy.

Table 2: Quality of Life in Different Elements after ARV Therapy (n=70)

Elements	Mean	Standard Deviation
Experience of tiredness*	2.16	0.694
Difficult to handle any pain or discomfort*	2.34	0.700
Loss of appetite*	2.47	0.653
Sleeping difficulties*	2.60	0.730
Ability to concentrate on anything	2.41	0.670
Ability to carry daily activities	2.23	0.765
Self-confidence	2.47	0.653
Decision making	2.14	0.546
Appearance that disturb the respondents*	2.36	0.682
Satisfaction with family relationship	2.17	0.722
Disturbed by the possible interference with sexual life*	2.37	0.745
Fear about their own death*	2.51	0.717
Feeling secure life	2.34	0.535
Self- value	2.49	0.631
Hopefulness	2.47	0.607

Mean score: 2.37, SD: 0.67, *Negative response (no is correct answer)

Table 3 depicts the relationship between CD4 count and ARV therapy. The mean CD4 counts were increased from 116.51 cells/mm³ to 222.44 cells/mm³ after 6 months of therapy. The result obtained from z test was statistically highly significant (p=0.000) at 5% level of significant.

Table 3: Relationship between CD4 Count at Start and 6 Months of ARV Therapy (n=70)

CD4 Count	Mean	Standard Deviation	p value
CD4 count at start	116.51	58.65	0.000
CD4 count after 6 months	222.44	106.83	

Table 4 depicts the relationship between ARV therapy and weight. The observed mean weights of the respondents were 50.33 kg and 54.79 kg at the start of ARV therapy and after 6 months of therapy. The result obtained from z test was found to be statistically highly significant (p=0.000) at 5% level of significance

Table 4: Relationship between ARV Therapy and Weight at Start and after 6 Months (n=70)

CD4 Count	Mean	Standard Deviation	p value
Weight at start	50.33	10.95	0.000
Weight after 6 months	54.79	10.34	

Table 5 depicts the relationship between opportunistic infections and ARV therapy. 42.86% of the respondents had opportunistic infections before therapy as compared to 4.29% of the respondents having opportunistic infections after 6 months of therapy. There was significant relationship between opportunistic infections before and after 6 months of antiretroviral therapy, where $\chi^2=4.179$ and p value is 0.041. This indicates that antiretroviral therapy reduces opportunistic infections of clients receiving ARV therapy.

Table 5: Relationship between Opportunistic Infections at Start and after 6 Months (n=70)

Opportunistic Infections	Before Therapy No (%)	After Therapy No (%)	p value
Present	30 (42.8)	3 (4.29)	0.041
Absent	40 (57.14)	67 (95.71)	

Table 6 depicts the common side-effects experienced by clients receiving ARV therapy. About half of the respondents had commonly experienced nausea (50.00%), skin rashes (45.71%) and dizziness (44.28%) as side-effects. More than thirty percent of the respondents had experienced vomiting (41.42%), cough (31.42%), flatulence (35.71%), dry mouth (30.00%) and somnolence (30.00%).

Table 6: Side-effects of ARV Therapy Experienced by Respondents in Different Systems (n=70)

Side-effects of ARV Drugs	Number	Percentage
Nervous Symptoms*		
Numbness	15	21.42
Insomnia	9	12.85
Somnolence	21	30.00
Dizziness	31	44.28
Mental confusion	15	21.42
Gastrointestinal Symptoms*		
Nausea	35	50.00
Vomiting	29	41.42
Abdominal pain	13	18.57
Diarrhea	15	21.42
Dyspepsia	11	15.71
Dry mouth	21	30.00
Taste perversion	19	27.14
Flatulence	25	35.71
Jaundice	3	4.28
Oral ulcer	8	11.42
Dermatological Symptoms*		
Skin rashes	32	45.71
Dry skin	20	28.57
Ingrown of nail	34	28.00
Hair loss	14	20.00
Changes in nail color	3	4.28
Musculoskeletal Symptoms*		
Myalgia	8	11.42
Arthralgia	14	20.00
Respiratory Symptoms*		
Cough	22	31.42
Nasal discharge	6	8.57
Miscellaneous*		
Conjunctivitis	2	2.85
Lipodystrophy	3	4.28
Anemia	9	12.85

*Multiple Responses

DISCUSSION

Out of seventy respondents, 37.14% respondents were between the age groups of 30-39 years and the mean age of the respondents were 35.33 years. The numbers of male respondents were higher (67.14%) than those of female (32.85%). approximately 59 % of the respondents were receiving ARV therapy for more than one year and the rest (41.0%) were receiving the ARV therapy for less than one year. The majorities (84.29%) of the respondents were leading good quality of life and only few (15.71%) respondents were leading poor quality of life after receiving antiretroviral therapy.

The findings revealed that the quality of life of the respondents after receiving ARV therapy was better than average in all elements: tiredness (2.16), pain or discomfort (2.34), appetite (2.47), sleep (2.6), concentration (2.41), self confidence (2.47), daily activities (2.23), decision making (2.14), appearance (2.36), family relationship (2.17), sexual life (2.37), fear of death (2.51), security in life (2.34), self value (2.49), and hopefulness (2.47). The average mean score of all elements of the quality of life was 2.37 which indicate that all the respondents had better than an average quality of life in all elements after receiving ARV therapy. These finding are supported by the study of Cardoso et al which showed that the majority of the people felt equal or better improvement in the following items: energy/physical strength (81.2%); physical discomfort (76.5%); daily activity capacity (90.8%); mobility/independence (95.4%); memory/concentration (72.3%); beauty/appearance (72.3%); self esteem (86.7%); affective relationship (92%); sexual life (79.9%)⁴. These finding are also supported by the study of Patel in which antiretroviral therapy was satisfactory to 87% of HIV positives and the quality of life was improved in almost all the patients on ARV treatment⁵.

The mean CD4 count increased from 116.51 cells/mm³ to 222.44 cells/mm³ after 6 months of ARV therapy. This change was statistically significant ($p=0.000$). So it can be concluded that antiretroviral therapy is effective in increasing the CD4 count level of the client whose CD4 level is decreasing due to the infection of HIV virus. These findings are corresponding to the study of Chariyalertsak et al in Canada, where mean CD4 count increased from 82 cells/mm³ to 273 cells/mm³ after one year of ARV therapy⁶. The result obtained from z test showed that the mean body weight increased from 50.33 kg to 54.79 kg after 6 months of ARV therapy and the change was found to be highly significant at 5% level of significance ($p=0.000$). So it can be concluded that antiretroviral therapy was effective to increase the weight of the respondents. This may be due to reduction of opportunistic infections and chronic symptoms of HIV/AIDS. This is supported by the findings of Chariyalertsak et al where respondents mean body weight increased from 49.4 kg to 54.4 kg after one year of therapy and the changes were statistically significant at the 0.05 level of significance⁶.

The most common side-effects experienced by the clients

were nausea (50.00%) followed by skin rashes (45.71%), dizziness (44.28%), vomiting (41.42%), abdominal iscomfort/flatulence (35.71%) and cough (31.42%). Only less than five percentages of the respondents had experienced jaundice, lipodystrophy, ingrowth of nail, and conjunctivitis as side-effects. These findings are supported by Patel where the most common side effect among ARV users was skin rash⁵. Similarly, the study conducted by Kafle et al showed that 30.0% of the respondents were encountered with adverse effects of therapy such as anemia, drug allergy, bleeding from nose, gastrointestinal upset and brown discoloration of skin⁷.

CONCLUSION

ARV therapy plays a significant role in improving the quality of life and immunological status of people living with HIV and AIDS. In this study most of the people living with HIV and AIDS has good quality of life after receiving antiretroviral therapy. Similarly their immunological status and weight are also increased as well as reduction of opportunistic infections occurs after 6 months of therapy. Therefore it is recommended that antiretroviral therapy should be available and accessible without any delay to all the HIV/AIDS clients who were eligible for the therapy.

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