

ORIGINAL RESEARCH ARTICLE

Assessment of the Impact of Antiretroviral Therapy on Quality of Life among People Living with HIV and AIDS**Kalpna Sharma Dhakal*¹ and Bijay Aryal²**¹College of Nursing, Chitwan School of Medical Sciences P.Ltd, Bharatpur-10, Chitwan, Nepal²Dept of Clinical Pharmacology, College of Medicine, Chitwan School of Medical Sciences P.Ltd, Bharatpur-10, Chitwan, Nepal

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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 the study was to find out the changes in quality of life, immunological status, body weight, and experience of side effects of antiretroviral drugs of people living with HIV and AIDS after receiving antiretroviral therapy. A study was conducted among 70 HIV/AIDS clients who were receiving antiretroviral therapy for at least six months from different ART centers and NGOS/INGOS of Kathmandu valley of Nepal. Information regarding quality of life was measured through adapted WHOQOL-HIV instrument and CD4 count was obtained by consulting the client's lab reports. Written informed consent was obtained from all the study participants. Study showed that 84.29% of people living with HIV and AIDS are leading good quality of life and 15.71% of respondents are leading poor quality of life after receiving antiretroviral therapy. The mean CD4 counts, weight were increased and opportunistic infections was decreased after six months of therapy. All the changes were statistically significant at 0.05 levels. Common side-effects experienced by clients receiving ARV therapy were nausea, skin rashes and dizziness. The study shows that ARV therapy plays significant role in improving the quality of life, immunological status and body weight of people living with HIV and AIDS.

Key words: 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 [1]. In 2008, 33.4 million [31.1 million–35.8 million] people were living with HIV globally. Out of them 31.3 million [29.2 million–33.7 million] were adults, 15.7 million [14.2 million–17.2 million] were women and 2.1 million [1.2 million–2.9 million] were children under 15 year. People newly infected with HIV in 2008 were 2.7 million [2.4 million–3.0 million] and AIDS-related deaths were 2.0 million [1.7 million–2.4 million] [2]. In Asia, an estimated 4.7 million [3.8 million–5.5 million] people were living with HIV in 2008. The number of new HIV infections was decreased from 400 000 in 2001 [310 000–480 000] to 350 000 [270 000–410 000] in 2008. In 2008, an

estimated 330 000 [260 000–400 000] people died of AIDS-related illnesses. Asia a home to 60% of the world's population is second only to sub-saharan Africa in terms of people living with HIV. India accounts roughly half of Asia's HIV prevalence [3]. The first AIDS case in Nepal was only reported in 1988. As of 2009, national estimates indicate that about 63,528 adults and children are affected with HIV. In 2009, about 31% of reported HIV cases comprised of women aged 15-49 years and 6.5% of the reported infections reported cases were children (0-14) [4]. Antiretroviral therapy (combination of 3 or more 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 principle of antiretroviral therapy is to reduce the amount of virus in a person's body, restore and/or preserve immune function, reduce HIV-related morbidity

and mortality, improve quality of life of HIV infected persons, prevent mother to child transmission (PMTCT) and post exposure prophylaxis (PEP). Nepal government has started to provide art service with free of cost through national center for AIDS and STD control since 12th February 2004. Since then antiretroviral therapy has been expanded all over Nepal through different ART centers and NGOS/INGOS [5]. As of December 2008, 37% of those in Asia needing antiretroviral therapy were receiving it. This represents a sevenfold increase in treatment access in five years [3].

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 such as headache, hypertension, or a general sense of feeling ill are usually appeared in the initial period and improve or disappear over time. Other common side-effects are fatigue, anemia, digestive disorders (nausea, vomiting, gas bloating or diarrhea), lipodystrophy, neuropathy, mitochondrial toxicity, and bone problems [6]. Prolonged treatments with combination regimens can be difficult to sustain because of problems with adherence and toxic effects. Even after 5 years of its start up, few studies has been documented yet regarding impact of ARV therapy on HIV/AIDS clients. The present study was undertaken to find out the quality of life, immunological status, body weight, and experience of side effects of the drugs of the people living with HIV and aids receiving antiretroviral therapy.

MATERIALS AND METHODS

Design of the study

A cross-sectional study design was used to assess the impact of ARV therapy among people living with HIV and AIDS.

Population and setting

The population of the study was those people living with HIV and AIDS who were receiving antiretroviral therapy for at least six months from different ART centers and NGOS/INGOS of the Kathmandu valley of Nepal.

Sampling

A total seventy sample were selected for the study. Considering difficulty to contact the infected people who were receiving antiretroviral therapy for at least six months on individual basis, the respondents for the study were contacted through the network of NGOS and staff of Tribhuvan University Teaching Hospital. Only

those respondents who were willing to participate in the study and available during data collection were included as study subjects.

Research instrument

A semi-structured interview schedule was developed by adopting HIV related quality of life instrument developed by World Health Organization (WHOQOL-HIV) to measure the 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.

Data collection

Before data collection, administrative clearance was obtained from the concerned authority. The respondents were informed about the purpose of the study. The verbal and written informed consents were obtained from all respondents. Data was collected by researcher herself from 1st August to 30th October 2009 with the help of semi-structured interview schedule

Data analysis

The collected data was edited, organized and entered into SPSS software program version 11.5. Then data cleaning was done to increase an accuracy of data. The score of negative mode questions was converted into positive mode for analysis. 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 \leq 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 $p=0.05$.

RESULTS

The findings of the study shows that 59 (84.29%) of the respondents were leading good quality of life and 11(15.71%) respondents were leading poor quality of life after receiving antiretroviral therapy

The average means score and quality of life of the respondents after introduction of ARV therapy was shown in (Table 1). 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. The relationship between CD4 count and ARV therapy was shown in (Table 2). The result obtained from z test was statistically highly significant ($p=0.000$). Similarly, the relationship between ARV therapy and weight was shown in (Table 3). The result obtained from z test was found to be statistically highly significant ($p=0.000$). Furthermore, the relationship between opportunistic infections and ARV therapy was shown in (Table 4). There was significant relationship ($p=0.041$) between opportunistic infections before and after 6 months of antiretroviral therapy. This indicates that antiretroviral therapy reduces opportunistic infections of clients receiving ARV therapy. The common side-effects experienced by clients receiving ARV therapy was shown in (Table 5). 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 1: Quality of life in different elements after ARV therapy (n=70)

Elements	Mean± SD
Experience of tiredness*	2.16±.694
Difficult to handle any pain or discomfort*	2.34±.700
Loss of appetite*	2.47±.653
Sleeping difficulties*	2.60±.730
Ability to concentrate on anything	2.41±.670
Ability to carry daily activities	2.23±.765
Self-confidence	2.47±.653
Decision making	2.14±.546
Appearance that disturb the respondents*	2.36±.682
Satisfaction with family relationship	2.17±.722
Disturbed by the possible interference with sexual life*	2.37±.745
Fear about their own death*	2.51±.717
Feeling secure life	2.34±.535
Self- value	2.49±.631
Hopefulness	2.47±.607

Mean score: 2.37; SD: 0.67; Z score (mean-1sd): 1.7

*negative response (no is correct answer)

Table 2: Relationship between CD4 count at start and 6 months of ARV therapy (n=70)

CD4 count	Mean± SD	P value
CD4 count at start	116.51±58.65	
CD4 count after 6 months	222.44±58.65	0.0001

Table 3: Relationship between ARV therapy and weight at start and after 6 months (n=70)

Weight	Mean± SD	P value
Weight at start	50.33±10.95	
Weight after 6 months	54.79±10.34	0.000

Table 4: Relationship between ARV therapy and opportunistic infections at start and after 6 months (n=70)

Opportunistic infections	Before therapy	After therapy	P value
	No (%)	No (%)	
Present	30 (42.86%)	3 (4.29%)	0.041
Absent	40 (57.14%)	67 (95.71%)	

Table 5: side-effects of ARV therapy experienced by respondents (n=70)

Side-effects of ARV drugs	Percentage
Nervous symptoms*	
Numbness	21.42
Insomnia	12.85
Somnolence	30.00
Dizziness	44.28
Mental confusion	21.42
Gastrointestinal symptoms*	
Nausea	50.00
Vomiting	41.42
Abdominal pain	18.57
Diarrhea	21.42
Dyspepsia	15.71
Dry mouth	30.00
Taste perversion	27.14
Flatulence	35.71
Jaundice	4.28
Oral ulcer	11.42
Dermatological symptoms*	
Skin rashes	45.71
Dry skin	28.57
Ingrown of nail	4.28
Hair loss	20.00
Changes in nail color	4.28
Musculoskeletal symptoms*	
Myalgia	11.42
Arthralgia	20.00
Respiratory symptoms*	
Cough	31.42
Nasal discharge	8.57
Miscellaneous*	
Conjunctivitis	2.85
Lipodystrophy	4.28
Anemia	12.85

*multiple responses

DISCUSSION

Out of seventy respondents, 37.14% respondents were between the age groups of 30-39 years and the means 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. About 84.29% of the respondents were leading good quality of life and only 15.71% of 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%)^[7]. 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 treatment^[8]. Similarly another study of Chariyalertsak et al found that the highly active antiretroviral therapy dramatically improves the quality of life, increases in income and employment and decreases in hospitalization^[9].

The mean CD4 count increased from 116.51cells/mm³ to 222.44cells/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, where mean CD4 count increased from 82 cells/mm³ to 273 cells/mm³ after one year of ARV therapy^[9].

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 49.4kg to 54.4kg after one year of therapy and the changes were statistically significant at the 0.05 level of significance^[9].

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 discomfort/flatulence (35.71%) and cough (31.42%). Only less than five

percentages of the respondents had experienced jaundice, lipodystrophy, in growth of nail, and conjunctivitis as side-effects. These findings are supported by Patel where the most common side effect among ARV users was skin rash.^[8] 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 skin^[10].

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 concluded 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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