Proceeding International Conference Of Innovation Science, Technology, Education, Children And Health
Vol. 4 No. 1, 2024
e-ISSN : 2776-9062, page 104-120
Available online at: https://icistech.org/index.php/icistech

Relationship between Viral Load Levels and Malnutrition Screening and Nutritional Status in HIV Patients at RSUD Dr. M Yunus Bengkulu

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Abstract: *Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) cases continue to increase and are becoming a top global public health problem. When weight loss is more than 10% below the previous body weight, the relative risk of death is going to increase almost 6-fold. A viral load checkup is a test to measure the amount of HIV in the blood. The increase in nutritional needs and tissue catabolism is caused by the increase in viral load in the body. Malnutrition screening is necessary to evaluate nutritional status so that this treatment can be recommended if the patient is malnourished. This research is an analytical observational study with a cross-sectional design. Analysis was carried out on 109 people living with HIV who received treatment at RSUD Dr. M Yunus Bengkulu. The independent variable in this study is the viral load level, while the dependent variable is screening for malnutrition and the nutritional status of people living with HIV/AIDS—data analysis using the Spearman Rank test. The study results showed no correlation between viral load levels and nutritional status with a value of p=0.243 (p>0.05), and there was a correlation between viral load levels and malnutrition screening with p≤001. The viral load of HIV patients at Dr. M Yunus Bengkulu does not correlate with nutritional status, but it correlates with malnutrition screening.*

Keywords: *Human Immunodeficiency Virus, viral load, malnutrition screening, nutritional status*

1. INTRODUCTION

Development Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) was first recognized in 1981, but HIV/ AIDS cases retrospective has appeared during the 1970s in the United States and some parts of the world. Globally, the number of patients living with HIV in 2021 was 38.7 million, and there is an improvement in the number in 2022 that will reach 39 million [1]. In Bengkulu Cit, the average number of sufferers was 1,200rom 2003 to 2022 [2]. HIV continues to increase and become a health problem in global society, and studies show that every HIV patient experiences 1 % weight loss from visits before, and the risk of death increases by 11%. When it decreases weight from 10% below initial weight, the risk of death relatively increases almost 6 times, and studies also show that the prevalence lack of nutrition in people living with HIV/AIDS (PLWHA) is 23.72 % [3], with see quite an increase significant so some factor risk form nutrition will tightly relate with problem health in HIV [4].

Received Agustus 16, 2024; Revised Agustus 31, 2024; Accepted September 16, 2024; Published September 18, 2024

HIV can utilise existing mechanisms inside target cells to make copy self so that new viruses form and persist. Metabolic markers of malnutrition are associated with low serum albumin levels, deficiencies of important micronutrients such as zinc and selenium, and inflammation characterized by high levels of cytokines. Furthermore, HIV infection and malnutrition simultaneously contribute to AIDS. The leading cause of weight loss PLWHA is insufficient calorie intake. One of the key factors causing this is consequent anorexia. There are changes in the body's metabolic rate, as well as drug interactions with nutrients. Because the infection is quite massive, it is expected that malnutrition in HIV patients is associated with the development of death, even when the patient has also received effective antiretroviral (ARV) drugs. Despite significant progress in increasing HIV treatment coverage, the incidence of HIV/AIDS and malnutrition remain significant challenges for the healthcare system [4].

Viral load examination is a test to measure the amount of HIV in the blood. Increased nutritional needs and tissue catabolism are caused by an increase in viral load in the body. If this situation continues for a long time, it will reach a state called wasting syndrome. Therefore, this incident will form a cycle that will continue if the nutritional status of the HIV patient is not improved [5]. A frequent side effect of HIV infection, malnutrition significantly and independently contributes to morbidity and death from the virus. One of the first effects of acquired immunodeficiency syndrome (AIDS) to be identified was malnutrition [6].

This study aims to analyze the relationship between malnutrition screening and nutritional status in HIV patients at RSUD Dr. M. Yunus Bengkulu, and it is necessary to deepen research and relate it to the viral load levels of HIV patients as a predictor of the severity of HIV infection.

2. MATERIALS AND METHODS

Research Design

This research is an analytical observational research with a cross-sectional design. The dependent variable in this study was screening for malnutrition and nutritional status of patients who have HIV/AIDS at RSUD Dr. M. Yunus Bengkulu, while the dependent variable is the viral load level of patients who have HIV/AIDS at RSUD Dr. M. Yunus Bengkulu. Viral load data is secondary data obtained from Voluntary Counseling and Testing (VCT) policlinic patients at RSUD Dr. M. Yunus Bengkulu, and data on nutritional status and malnutrition screening are secondary data obtained from VCT policlinic patients at RSUD Dr. M. Yunus Bengkulu. The research was conducted at RSUD Dr. M. Yunus Bengkulu in October-December 2023.

The population in this study were all patients with HIV who visited the VCT polyclinic, and their data was recorded in the medical record at RSUD Dr. M. Yunus Bengkulu. Sample in research This is diagnosed patients with HIV at RSUD Dr. M. Yunus Bengkulu, and the sample research taken uses a simple random sampling technique.

Criteria inclusion study are: all of them diagnosed patients HIV at RSUD Dr. M. Yunus Bengkulu, who has viral load data.. Criteria exclusion is patients who do not have complete medical record data. If they withdraw from the research, the research subjects will be dropped.

Nutritional Status Check and Screening Malnutrition

Nutritional status measurements were carried out by VCT polyclinic officers using the anthropometric method, including measuring body height by installing a stadiometer at the research site and then removing footwear, the subject stood up straight, legs straight, heels, buttocks, back and back of the head must be against the wall and face facing. Straight with the gaze forward, then lower the meter until it meets the top of the head; the elbows must be straight against the wall and end up reading the numbers on the stadiometer with an accuracy of 0.1 cm. Researchers will collect nutritional status data in the form of height and, through medical records, the patient's status in the month the viral load sample data was taken. Malnutrition screening data was obtained via medical recorded data of patients that see symptoms that occur in HIV/AIDS patients in months, calculated from month sample viral load up to 6 months previously.

Viral Load Check

A viral load examination was carried out at RSUD. Dr. M Yunus Bengkulu used a tool called Abbott m2000system RealTime HIV-1 Assay [7].

Data analysis

The data obtained was analyzed using univariate analysis in the form of ordinal data, which will be displayed in a frequency distribution to describe the data distribution for each variable. Bivariate analysis is used to analyze the relationship between independent and dependent variables. The variables that will be analyzed for their relationship are nutritional status and malnutrition screening with viral load levels. Spearman rank correlation will be used to see the relationship between the two variables using an ordinal scale. A confidence level of 95% means that the two variables will be said to be significantly correlated with a p-value <0.05.

3. RESULTS

The study subject was obtained using a total sampling method. The number of subjects, including the number of inspection viral loads at RSUD Dr. M Yunus Bengkulu from 2020-2023, in August, is 130: compliant subject criteria inclusion and exclusion total 109 subjects of 130 subjects.

Characteristics Research Subjects

Distribution characteristic data frequency of gender, age, occupation, education, marital status, duration of ARV, time diagnosed, clinical stage, and type of ARV are in Table 1.

Table 1 illustrates that the subject study part is in the age range mature, with an end range of 36-45 years (38.5%), and various sex men (71.6%) with private work (45.9%). Most subjects were diagnosed, and treatment was performed for a long time (36-48 months). The most severe degree was at stage 3 (46.8%). Types of antiretroviral therapy most on the line second consists of Nucleoside Reverse Transcriptase Inhibitors (NRTI) and ritonavir-boosted protease inhibitors (PI), namely TLD (61.5%).

Spread Research Subjects Based on Viral Load Levels

Based on table 2 shows that of the 109 subjects who had done inspection viral load, the majority results in viral load is at with results <1000 copies/mL for 40 subjects study.

Table 1. Data on Characteristics of Research Subjects (N=109)

Characteristics	n (%)
Age	
Mean ± SD	39.52 ± 10.574 [x]
Late teens	6 (5.5%)
Early adulthood	36 (33%)
Late adulthood	42 (38.5%)
Early seniors	17 (15.6%)
Late seniors	4 (3.7%)
Seniors	4 (3.7%)
Gender	
Man	78 (71.6%)
Woman	31 (28.4%)
Work	
No work	7 (6.4%)
civil servants	13 (11.9%)
Private	50 (45.9%)

IRT	16 (14.7%)
Farmer	3 (2.8%)
Other	20 (18.3%)
Education	
elementary school	4 (3.7%)
Junior High School	6 (5.5%)
Senior High School	57 (52.3%)
Bachelor	40 (36.7%)
No school	2 (1.8%)
Marital status	
Married	75 (68.8%)
Not married yet	23 (21.1%)
Divorce	7 (6.4%)
Divorce dies	4 (3.7%)
ARV duration	
6-12 months	3 (2.8%)
13-36 months	38 (34.9%)
37-48 months	48 (44%)
>48 months	20 (18.3%)
Long Diagnosed	
6-12 months	3 (2.8%)
13-36 months	38 (34.9%)
36-48 months	48 (44%)
>48 months	20 (18.3%)
Clinical Stage	
Stage 1	14 (12.8%)
Stage 2	16 (14.7%)
Stage 3	51 (46.8%)
Stage 4	28 (25.7%)
Types of ART	
TLDs	67 (61.5%)
TLE	38 (34.9%)
Duviral, neviral	4 (3.7%)

Notes : TLD: *Tenofovir, Lamivudine, Efavirenz;* TLE: *Tenofovir, Lamivudine, Dolutegravir*; [x]

Data normally distributed with the normality test with P > 0.05 using Mean ± SD

Table 2. Data on the Distribution of Research Subjects Based on Viral Load Levels

Viral Load Levels	n (%)
>1000 copies/mL	30 (35.8%)
<1000 copies/mL	40 (36.7%)
<20 copies/mL	39 (27.5%)
Total	109 (100%)

Spread Research Subjects Based on Nutritional Status

Table 3 shows that of the 109 subjects who had been measured based on medical record weight and height, the majority of the results were of nutritional status in the categories of normal body weight (42.2%) with mean index mass body 23.48.

Table 3. Data on Distribution of Research Subjects Based on Nutritional Status

Nutritional status	Average	Category n (%)
Body weight (kg)	63.03 ± 11.35 [x]	
Height (cm)	165 (147-176) [y]	
Index mass body (BMI)	23.48 ± 3.62 [x]	
Underweight	17.58 ± 0.99 [x]	8 (7.3%)
Normal	21.29 ± 1.33 [x]	46 (42.2%)
Overweight	23.22 ± 0.26 [x]	5 (4.6%)
With risks	24.05(23.5-25.7) [y]	18 (16.5%)
Obesity I	26.40 (25-29.2) [y]	27 (24.8%)
Obesity II	33.26 ± 2.23 [x]	5(4.6%)

Notes : Underweight: <18.5, Normal: 18.5-22.9 Overweight : ≥23, With risk: 23-24.9, Obesity I: 25-29.9, Obesity II: ≥30; x Data normally distributed with the normality test with P > 0.05 using Mean ± SD; y Data not normally distributed with the normality test with P < 0.05 using Median (Min-Max)

Spread Research Subject in Screening Malnutrition

Table 4 shows the results of the 109 subjects who had analyzed screening malnutrition based on Malnutrition Screening Tools 77 subjects are not at malnutrition risk, while the other 32 subjects are at malnutrition risk.

Relationship Between Viral Load and Nutritional Status

Based on Table 5, analysis of the connection rate viral load with the nutritional status of people living with HIV using the Spearman Rank test shows that its significance amounted to 0.243 (p < 0.05). That value means that there is no significant relationship between the rate of viral load and the nutritional status of people living with HIV at Dr. M Yunus Bengkulu.

Based on Table 6, it can assessed that analysis connection rate viral load with screening malnutrition based on Malnutrition Screening Tools in people living with HIV using the Spearman Rank test showing its significance of <.001 (p > 0.05). That value means that there is a significant relationship between the viral load and malnutrition screening of people living with HIV at Dr. M Yunus Bengkulu.

Table 4. Distribution of Malnutrition Screening Data Based on MST

Screening Malnutrition	Median	n (%)
Average data *Malnutrition Screening Tools*	1 (0-3) [y]	
The patient is not at risk of malnutrition	1 (0-1) [y]	77 (70.6%)
Patients at high risk of malnutrition	2 (2-3) [y]	32 (29.4%)

Notes: MST*:* Malnutrition Screening Tools, <2: patient not at risk of malnutrition, ≥2: patient at high risk of malnutrition; [y] Data No normally distributed with the normality test with P < 0.05 using Median (Min-Max)

Table 5. Analysis of the Relationship Between Viral Load and Nutritional Status

Nutritional status	*Viral Load*				*p-value*
	>1000 copies/mL	<1000 copies/mL	<20 copies/mL	Total	
Underweight	3 (10%)	3 (7.5%)	2 (5.1%)	8 (7.3%)	0.243
Normal Body Weight	12 (40%)	18 (45%)	16 (41%)	46 (42.2%)	
Overweight	1 (3.3%)	4 (10%)	0 (0%)	5 (4.6%)	
With risks	7 (23.3%)	6 (15%)	5 (12.8%)	18 (16.5%)	
Obesity I	6 (20%)	8 (20%)	13 (33.3%)	27 (24.8%)	
Obesity II	1 (3.3%)	1(2.5%)	3 (7.7%)	5 (4.6%)	
Total	30 (100%)	40 (100%)	39 (100%)	109 (100%)	

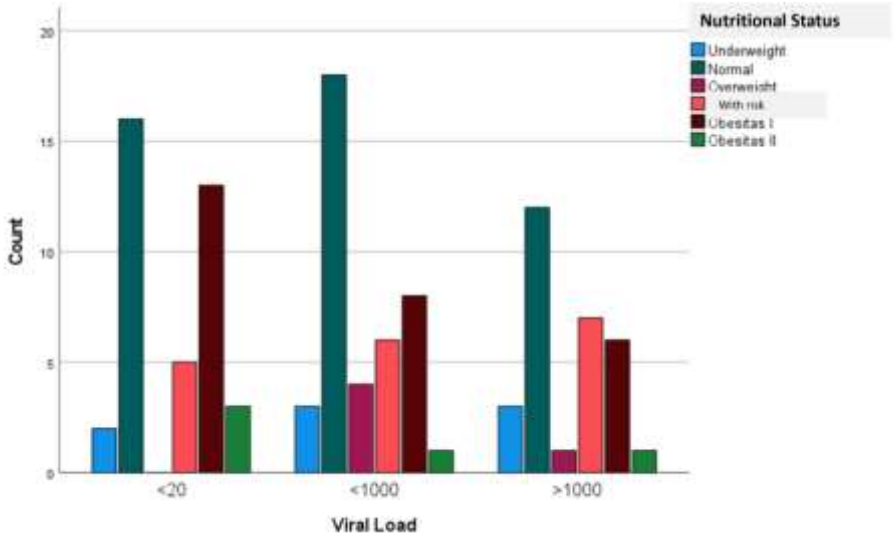

Figure 1. Analysis of the Relationship Between Viral Load and Nutritional Status

Table 6. Results of the Spearman Viral Load Rank Test and Malnutrition Screening

Screening Malnutrition	***Viral Load***				***p-value***
	>1000 copies/mL	**<1000 copies/mL**	**<20 copies/mL**	**Total**	
The patient is not at risk malnutrition	12 (40%)	29 72.5%)	36(92.3%)	77 (70.6%)	<.001
Patient risky malnutrition	18 (60%)	11 (27.5%)	3 (7.7%)	32 (29.4%)	
Total	30 (100%)	40 (100%)	39 (100%)	109 (100%)	

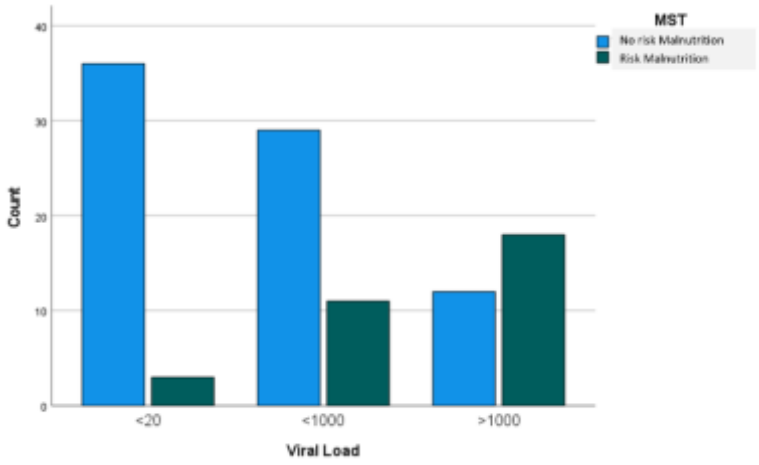

Figure 2. Analysis of the Relationship Between Viral Load and Malnutrition Screening

4. DISCUSSION

Characteristics Research Subjects

The study results obtained that 2/3 of the subject's sex are men. According to data reported by the Centers for Disease Control (CDC) in 2018, it was obtained that men accounted for 30,691 (81%) of the 37,968 new HIV/AIDS patients in the United States and surrounding territories [8]. Most of the 86 % of people living with HIV are men because of promiscuous sex behaviour, bisexual, and other men in relationships sex with man. This is also explained in the executive development report of HIV/AIDS and sexually transmitted infection diseases 2022, which mentioned that man still leads the highest number of PLWHA. Research that has been conducted by Mia et al. (2021) states that men more dominant acquired HIV /AIDS from connecting the male sex with men (MSM) [9]—most of them drug injection users. A high percentage of PLWHA are of the same type of sex as men, which is assumed to happen as a consequence of transmission through commercial sex workers that can transmit HIV/AIDS to every partner [10].

The subjects involved in this research range from late teenagers to seniors who were checked for viral load at RSUD, Dr. M Yunus Bengkulu. Research subjects are scattered from late teenagers until seniors, with a mean of 39 years and dominated by late adults. Data report presented by the Ministry of Health 2021 showed PLWHA cases originate from the range aged 25-49 years (69.7%). It is the same if compared to reports of HIV/AIDS and sexually transmitted infection diseases; it was found that the majority were in the 25-49 year age group (67.9%). The latest data presented by the United Nations Program on HIV and AIDS (UNAIDS) in 2023 states that it is not much different that most PLHIV in the world are in the age group productive, namely 15-49 years [1]. The range ages 25-49 are age sexually active and have an exploration period; during this period, the individual will tend to do high-risk behaviours that cause transmission of HIV/AIDS [11].

In the current research, subjects suffering from HIV/AIDS are dominated by private work, followed by other work. Different results found in the report executive development of HIV/AIDS and disease infection infectious sexual first quarter of 2022 total highest held by non-professional staff (employees) with number 22,909, followed by housewives, entrepreneurs, farmers, and labourers. Work affects the function of the economy; the subject needs to fulfil the needs of the family economically, and it is a place for developing the ability of individuals to increase their income to fulfil the needs of the family. Someone with established work and a good income adheres to ARV treatment because the patient can receive treatment [12]. Work is also linked with the height of HIV cases. It can be said that people who work and have income (money) can be one-factor pushers for doing What is just following their wish with income earned, like risky sexual behaviour or sexual commercials [13].

In studies, most of the subject research education is senior high school, followed by bachelor. Education is a process in which growth and development occur or change towards more mature, better and mature individuals [14]. Therefore, education is one possible factor that influences the level of knowledge in an individual's insight, understanding, and behaviour. The ability to receive and absorb information about the importance of guarding sexual health and understanding HIV/AIDS can also be done to prevent transmission of HIV/AIDS [15].

In this research, the marital status of PLWHA was also assessed. Table 1 explains that 68.8% of subjects have married. Married PLWHA tends to have positive attitudes, so access and adherence to ARV therapy are increasing. Marital status is one of the individual influencing factors in HIV treatment [16]. The marital status of the patient increases the possibility of risk transmission of HIV infection through sexual contact. Then, from a wedding, future descendants increase the risk of HIV infection from Mother to children [17].

Based on the results analysis distribution, most subjects are in stage 3. A clinical staging assessment is done in each patient visit for determine more appropriate ARV therapy. Apart from that, the stadium can used for monitor PLWHA consume drug regularly and taking drug every month. Then, there is improvement awareness PLWHA for start ARV therapy will prevent increasing the stage of HIV to AIDS [18].

In this research, the most subjects has diagnosed and performed therapy more from 3 years. Research conducted by Ng'ambi et al. (2022) explains that majority patients who have treated for a long time compared to backwards with treated patients not enough from 1 year, HIV virus suppression prevalence increases with long duration ARV therapy [19]. This matter because introduction counseling ARV compliance in subjects study especially on a new subject start ARVs so matter This can make subject more obedient for ARV therapy so it can decline viral replication [19].

In this studies, kind of drug ARV therapy group most frequent for medication is Tenofovir + Lamevudine + Delutogafir (TLD). Indonesian Ministry of Health recommend optimization refinement of the blend drug antiretroviral (ARV), so use alloy TLD therapy can suppresses the HIV virus (suspended) faster from alloy other ARV therapy and with estimate minimal side effect, so for new PLHIV recommended using the TLD regimen [20].

Spread Research Subjects Based on Viral Load Levels

Based on this research, the most commonly viral load level is <1000 copies/ mL. that including into the category low. Increasingly low levels of viral load in PLWHA then the more small risk transmit HIV to other people [21]. The next result followed a viral load level <20 copies/ mL. This is also related to the level compliance consume medicine, category obedient own rate viral load no detected more tall compared to with category no adherent [13]. Interpretation compare reversed in degree viral load >1000 copies/mL, subjects tend experience obstacle like delay initiating ARVs and low adherence in consume medicine [22].

Study Astari et al ., (2009) stated that the lower rate viral load, then the longer it takes for become AIDS as well the better life resilience [23]. On the contrary patient with high viral load level can experience the development of AIDS in a short time. This matter is related with many study subject do inspection viral load that has long been diagnosed so the average patient has undergo therapy and shows low viral load level [24].

Spread Research Subjects Based on Viral Load Levels

Nutrition for PLWHA is an important problem in Indonesia management Because will major impact on function his immunity . In this study, the majority subject have normal nutritional status, p the relating to the subject that has knowledge related to good nutrition [25]. Compliance to treatment antiretrovirals are very important to suppress viral replication , reducing destruction CD4+ cells , prevent virus resistance, improve immunity and slows down development disease . Hence compliance drink drug will has a big impact on nutrition [26].

Antiretrovirals therapy (ARV) are considered a solution to HIV-related malnutrition. The majority of PLWHA who clinical malnourished and starting ARV will experiencing improvement or stabilization in weight his body . HIV infection progresses will cause circumstances catabolic and increased vulnerability against infections exacerbated by deficiency calories and cause it to get worse malnutrition. Thus , levels HIV viral load can estimate decline weight and showing decline prevalence malnutrition through decline viral load. Therefore, antiretrovirals can help lower viral replication, increase function immunology and health improvement maximum, as well prevent malnutrition [27].

Spread Research Subject Based Screening Malnutrition

Screening malnutrition plays an important role in identify the nutritional status of incoming patients category malnutrition or risk malnutrition. Various methods of screening patients in hospitals have been developed and implemented review in several countries. The most common nutritional screening method used is MST (Malnutrition Screening Tool) [28]. HIV specifically impacts nutritional health through increased energy needs, decreased food intake, and detrimental effects on nutrient absorption and metabolism inefficiencies because to diarrhea and cytokine activity [29].

Relationship Between Viral Load and Nutritional Status

Nutrition is important factors that can be influence morbidity and mortality in patients living with HIV/AIDS. Management assessment screening nutrition must done regularly because response system immunity to replication and potential development of opportunistic infections influenced by nutrition. Therefore , it is important to take care optimal nutritional status in adult HIV/AIDS patients to old age [30].

Table 5 is shown to answer hypothesis regarding relationships rate viral load and nutritional status. Analyzed data using the Rank-Spearman test shows that there is no

connection between rate viral load and nutritional status of HIV/AIDS patients at RSUD Dr. M Yunus Bengkulu. The research results illustrate that 42.2% of research subjects had normal nutritional status. These results are in line with research conducted by Wright et al ., 2019 which found that the nutritional status of patients who were undergoing therapy antiretroviral , namely 39.2% had ' risk ' status low ' and 26.4% had ' at risk ' status, and 31.4% had ' at risk ' status high ' based on the results of the nutritional assessment [31]. That matter influenced by factors therapy carried out by HIV/AIDS patient. Therapeutic goals antiretroviral is to increase the number of CD4+ inside T cells , decrease rate viral load , so that is expected can lower number death . Success ARV treatment in HIV patients can assessed from three thing , namely success clinical assessed from changes clinical signs in HIV patients such as increasing weight gain and improvement of opportunistic infections, success immunologist assessed from changes in the number of CD4+ lymphocytes towards improvemen , and success virologist assessed from reducing the number of viruses as low as possible or below the detection limit is known as the number of viruses detected in blood HIV patients after administering ARVs [32]. Apart from ARV therapy, adequate nutrition is an important key health maintenance and improvement function immunity body optimally. Support nutrition can increase response clinically good in HIV- infected people and inhibits development HIV disease . Thus happen improvement quality life as well as lower mortality related opportunistic infectious diseases [33].

The Relationship Between Viral Load and Screening Malnutrition

HIV and malnutrition often called as circle demon caused second condition the relate with decline immunity. The decline immunity increase risk infection, so cause improvement need nutrition. If need nutrition This No fulfilled , then will happen more malnutrition severe [34].

Table 6 is intended to answer hypothesis regarding relationships rate viral load by screening malnutrition . The data obtained was then analyzed using the Rank-Spearman test . The results show p-value = <.001 which can be means that there is connection between rate viral load by screening malnutrition. Malnutrition can damage defense experience body and mechanism defense experience. When selenium intake is low , production selenoproteins, include glutathione that forms selenium based enzyme antioxidant will low. As time goes by , this will impact emergence stress oxidative and injury can be oxidative change integrity membrane cells and pathways metabolism in cells so ability cells to repair and renew self

disturbed [35].

The research used by Hu et al ., 2011 states that a single parameter such as an index mass the body cannot made reference in a way comprehensive because assessed belittle level malnutrition [36]. Index mass body in a way rough reflect mass body and not measure history intake nutrition , disorders metabolism, or disorders nutrition related disease . Comprehensive tool measurement screening malnutrition needs to be used to assess intake food, metabolic changes specific, and decreasing weight is a must too still considered (BMI components from screening malnutrition). The research also found HIV patients who have a BMI >20 are related negative for opportunistic infections. Improvement awareness will malnutrition by exertion medical by providing a sensitive and easy nutritional evaluation tool used is very important for maintenance clinical HIV/AIDS patients [36].

Treatment antiretrovirals (ART) are component important maintenance for PLWHA, and assessment counseling nutrition based screening malnutrition must become an integral part of all HIV treatment programs. Improvement attention on diet and nutrition can increase acceptability and effectiveness of ART as well help repair complications metabolic. Screening malnutrition is factor supporter in ensure effectiveness treatment. Therefore that is , assessment nutrition through method Malnutrition Screening Tools and support For HIV/AIDS patients must strengthened [37].

This research has limitations that need to be refined. Rate data viral load in this study was still in categorical form so that analysis can be done only related spread in general and not yet see viral load figures in a way specific. Reagents for examination viral load is not available at all times so testing can only be done done moment reagent available . Inspection viral load carried out after it is given ARV therapy so cannot see analyze changes thoroughly significant. Inspection tool viral load can emit invalid results due to sensitive tool to contamination.

5. CONCLUSION

The majority of the research subjects were male. The work of the research subjects was dominated by private companies. The last education of the research subjects was high school. The majority of the marital status of the research subjects was married. The duration of ARV and the length of time diagnosed with HIV/AIDS were dominated by 36-48 months. The clinical stage of the research subjects was mostly in the stage 3 category reaching 46.8%. The type of ART used by the research subjects was TLD. The distribution of research subjects based on viral load levels was mostly in the category <1000 copies/mL reaching 36.7% followed by <20 copies/mL as much as 27.5% and levels> 1000 copies/mL being the

minority in this study. The nutritional status of the research subjects had a mean of 23.48 and malnutrition screening was dominated by research subjects who were not at risk of malnutrition. There was no relationship between viral load levels and nutritional status at Dr. M Yunus Bengkulu Hospital. There was a relationship between viral load levels and malnutrition screening at Dr. M Yunus Bengkulu Hospital.

ACKNOWLEDGEMENTS

Thanks for the support from the Faculty of Medicine, University of Bengkulu. This research is supported by a grant from the Non-tax Revenue of the Faculty of Medicine and Health Sciences, University of Bengkulu.

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