FACTORS ASSOCIATED WITH HAART ADHERENCE IN PATIENTS WITH HIV / AIDS AT THE CENTRAL HOSPITAL OF THE POLICE FORCES

FACTORES ASOCIADOS A LA ADHERENCIA AL TARGA, EN PACIENTES CON VIH/SIDA EN EL HOSPITAL CENTRAL DE LAS FUERZAS POLICIALES

Gustavo Orellana-Zanabria[1,a], Eduardo Morales-Rezza[2]

ABSTRACT

Objective: To determine the associated factors and the degree of adherence to HAART in patients with HIV / AIDS at the PNP Central hospital "Luis N. Saenz" from October to December 2015. **Methods:** Observational, cross-sectional, analytical and descriptive study where 123 patients with a CEAT-HIV questionnaire were evaluated. Data collection was performed in the Microsoft Excel program and statistical analysis using the SPSS v.22 program. **Results:** Where we found that the average age of all patients evaluated was 40.11 years. The infection time of the evaluated patients was an average of one year and 7 months. Treatment time with HAART averaged 20 months. Fifty-two percent (64 patients) of the study population were any family members of the holder, either wife (s), child (ren) or parents. The gender that prevails in the sample is male with 63.4% (78 patients). And viral load, 77.2% is undetectable (<400 copies / ml). The grade found was adequate adherence to HAART, with a score of 82.51. And relating the degree of adherence to socio-demographic characteristics are not significant. But if the degree of adherence to viral load was found to be related. **Conclusion:** In the study population has adequate adherence to antiretroviral treatment and the 5 factors measured by the questionnaire: adherence to treatment, history of lack of adherence, physician-patient interaction, patient's beliefs and strategy for taking medications, have a very good influence on adherence to HAART.

Key words: Adherence to treatment; HAART; Factors associated with adherence. (source: MeSH NLM)

RESUMEN

Objetivo: Determinar los factores asociados y el grado de adherencia al TARGA en los pacientes con VIH/SIDA en el hospital Central PNP "Luis N. Sáenz" en los meses de octubre a diciembre del 2015. **Métodos:** Estudio observacional, transversal, analítico y descriptivo donde se evaluó a 123 pacientes con un cuestionario CEAT-VIH. Se realizó la recolección de datos en el programa Microsoft Excel y el análisis estadístico mediante el programa SPSS v.22. **Resultados:** Donde encontramos que la edad promedio de los todos los pacientes evaluados es 40.11 años. El tiempo de infección de los pacientes evaluados fue un promedio un año y 7 meses. El tiempo de tratamiento con el TARGA consto de un promedio de 20 meses. El 52 % (64 pacientes) de la población estudiada fue algún familiar del titular, ya sea esposa (o), hijo (a) o padres. El género que prevalece en la muestra es masculino con el 63.4 % (78 pacientes). Y la carga viral, el 77.2 % es indetectable (< 400 copias/ ml). El grado encontrado fue una adecuada adherencia al TARGA, con una puntuación de 82.51 y al relacionar el grado de adherencia con las características socio-demográficas no son significativas. Pero si se encontró relación el grado de adherencia con la carga viral. **Conclusión:** La población estudiada tiene una adecuada adherencia al tratamiento antirretroviral y los 5 factores que mide el cuestionario: cumplimento del tratamiento, antecedentes de la falta de adherencia, interacción médico-paciente, creencias del paciente y estrategia para la toma de medicamentos, tienen muy buena influencia en la adherencia al TARGA.

Palabras clave: Adherencia al tratamiento; TARGA; Factores asociados a la adherencia. (fuente: DeCS BIREME)

[1] Hospital Central PNP "Luis N. Saenz", Lima-Perú.
[a] Medicine Intern.
[2] Médico del hospital Central PNP "Luis N. Saenz", Lima-Perú.

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INTRODUCTION

The human immunodeficiency virus (HIV) infects the cells of the immune system and alters or cancels their function, this infection produces a progressive deterioration of the immune system, with the consequent "immunodeficiency". Also, the immune system is considered to be deficient when it fails to fulfill its role of fighting infection and disease. The acquired immunodeficiency syndrome is considered a public health problem of a great nature due to the magnitude of the damage that is evidenced in the morbidity and mortality of the population. In the world, more than 35.3 million people are living with HIV infection, of which 2.1 million are adolescents (10 to 19 years old); Furthermore, the vast majority of people infected with HIV live in low- and middle-income countries, and it is estimated that, in 2012, some 2.3 million people contracted this infection. To this date, Peru had about 76,000 HIV carriers, and it is necessary to promote a specialized comprehensive treatment together with a multidisciplinary health team that faces this disease, considering that the existing obstacles faced by patients with HIV are based on the non-acceptance of the illness itself, followed by the lack of family support, among others. Also, it is necessary to recognize that there are political factors (indifference or carelessness, interference with the free flow of information), sociocultural (regulations, roles, taboos), and economic (poverty, lack of resources, income inequality) that directly affect the problem of HIV1 infection.

A broad and convenient advance for the control of HIV infection has been the discovery of highly active antiretroviral treatment (HAART) and its universal trajectory. Likewise, the Ministry of Health of Peru (MINSA) began the provision of HAART in May 2004. It has been possible since to increase its coverage, optimizing the quality of life of people living with HIV and delaying the progression of the infection to evolutionary and incipient stages, where the State makes an effort to consolidate the HAART program[1].

The MINSA has an infectious diseases service. This program carries out a set of activities aimed at the population of all ages to detect risk groups early and reduce vertical and blood transmission. Among the activities carried out by this program, there is screening, HIV screening, syphilis screening, HIV confirmation, pre-test counseling, post-test counseling, STI-HIV doctor, social control, home visits, focused and group education, which accompanies HAART treatment[1]. The objective of this article is to determine the associated factors and the degree of adherence to HAART in patients with HIV / AIDS at the PNP "Luis N. Sáenz" Central Hospital from October to December 2015.

METHODS

The present research study corresponds to an observational, cross-sectional, analytical, and descriptive design. We worked with 123 patients with HIV / AIDS, who are cared for in the infectious disease service of the PNP "Luis N. Saenz" Central Hospital in 2015. We used a survey validated by CEAT HIV (annex 1) and reviewed the medical records. Where patients older than 18 and younger than 65 years of age were included, patients with a minimum antiretroviral treatment time of three months, patients who are not pregnant, and patients who agree to take the survey. Patients younger than 18 years and older than 65 years with HIV / AIDS, patients with an antiretroviral treatment time of fewer than three months, patients who are pregnant, and patients who refuse to participate in the survey were excluded.

RESULTS

A. Reliability

Table 1 evaluates Cronbach's alpha, which is a coefficient of reliability or internal consistency. When the alpha coefficient is > 0.7 it indicates that it is acceptable for research use. In our study, Cronbach's alpha is 0.765.

Table 1. Alfa de Cronbach.

CRONBACH ALPHA	CRONBACH ALPHA BASED ON STANDARDIZED ELEMENTS	N ° OF ELEMENTS
0.765	0.788	0.20

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

B. Descriptive analysis

Table 2. General characteristics.

CHARACTERISTICS	AVERAGE (FROM [RANGE])
Age (years)	40.11 (+- 12.54 [18 – 64])
Time of infection (years)	1.77 (+- 1.38 [0.33 – 7.08])
Treatment time (months)	20 (+- 16.95 [3 – 84])
T/F	N (%)
Headline	59 (48 %)
59 (48 %)	64 (52 %)
Gender	N (%)
Male	78 (63.4 %)
Female	45 (36.6 %)
Viral load level (copies / ml)	N (%)
< 400	95 (77.2 %)
401 – 50 000	28 (22.8 %)
>50 000	0 (0 %)

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

Table 2 shows the characteristics in general, where we see that the average age of all the patients evaluated is 40.11 years. The time of infection of the evaluated patients was an average of one year and 7 months. The treatment time with HAART consisted of an average of 20 months. 52% (64 patients) of the population studied was a relative of the holder, be it the wife, child, or parents. The prevailing gender in the sample is male with 63.4% (78 patients) and the viral load in 77.2% is undetectable (<400 copies/ml).

Table 3. Results of the responses of the CEAT-HIV items.

ITEM	HALF	RANGE (MIN - MÁX)	CRONBACH ALPHA IF ITEM IS LOST
Ceat 1	4.72	1 (4-5)	0.739
Ceat 2	4.83	1 (4-5)	0.748
Ceat 3	4.82	1 (4-5)	0.750
Ceat 4	4.81	1 (4-5)	0.752
Ceat 5	1.60	2 (0-2)	0.767
Ceat 6	4.87	1 (4-5)	0.764
Ceat 7	4.71	3 (2-5)	0.756
Ceat 8	3.51	4 (1-5)	0.761
Ceat 9	4.84	2 (3-5)	0.754
Ceat 10	4.89	1 (4-5)	0.755
Ceat 11	4.33	2 (3-5)	0.765
Ceat 12	4.79	2 (3-5)	0.721
Ceat 13	4.89	1 (4-5)	0.768
Ceat 14	4.85	1 (4-5)	0.767
Ceat 15	4.42	2 (3-5)	0.775
Ceat 16	4.80	1 (4-5)	0.774
Ceat 17	4.73	2 (3-5)	0.760
Ceat 18	4.80	1 (4-5)	0.726
Ceat 19	0.72	1 (0-1)	0.739
Ceat 20	0.58	1 (0-1)	0.767

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

The 20 responses to the questionnaire that were made to the 123 patients of the Central Hospital of the PNP "Luis N. Sáenz" (Table 3) are observed. Where the mean of the 20 items of the questionnaire is 82.51, and according to the 4 levels of classification of the degree of adherence: where adherence is low (85 points). It would be in "adequate adherence" since it is within the range of 81 - 85 points.

Table 4. Factors related to adherence to antiretroviral treatment measured by CEAT - HIV.

FACTOR	MEDIA	MODA	DE	MIN	MAX
Compliance with treatment	16.57	18	1.635	12	18
History of lack of adherence	14.46	15	0.871	12	15
Interaction with the doctor	9.76	10	0.463	8	10
Patient beliefs	41.14	42	2.200	30	45
Strategies to improve adherence	0.58	1	0.496	0	1

Fuente: INICIB – FAMURP/hospital Central PNP "Luis N. Sáenz".

Regarding adherence measured by the CEAT-HIV (Table 4), it is observed that compliance with treatment has a maximum score of 18, a history of lack of adherence has a maximum score of 15, interaction with the doctor has a maximum score of 10, the patient's beliefs have a maximum score of 45 and the strategies for remembering the taking of drugs with a maximum score of 1. Four of the five associated factors have a very good influence on adherence to treatment since his fashion reaches the maximum score. The missing factor, patient beliefs, is not that it does not have a good influence, only that its mode reaches 42. So, it also influences the treatment, but not as high as the previous four.

C. Inferential analysis

Table 5. Association between sex and degree of adherence.

		SEX		
		MALE	FEMALE	TOTAL
Degree of adherence	Low adherence	2	1	3
	Insufficient adhesion	14	11	25
	Adequate adhesion	46	25	71
	Strict adherence	16	8	24
Total		78	45	123

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

The association between gender and degree of adherence was studied, using the chi-square test. This test allows us to associate two qualitative variables. The p value> 0.005 (0.856) would indicate that there is no association between the degree of adherence and gender. (Table 5)

Table 6. Association between degree of adherence and owner-family member.

		OWNER / FAMILY		
		HEADLINE	FAMILY	TOTAL
Degree of adherence	Low adherence	1	2	3
	Insufficient adhesion	15	10	25
	Adequate adhesion	29	42	71
	Strict adherence	14	10	24
Total		59	64	123

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

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Table 6 shows the association between the degree of adherence and the owner-family member, and the p value> 0.005 (0.242) would indicate that there is no relationship between the degree of adherence and the owner-family member.

Table 7. Correlation between the degree of adherence and age.

			AGE (YEARS)	DEGREE OF ADHERENCE
Rho de Spearman	Age (years)	Correlation coefficient	1.000	0.061
		Sig. (Bilateral)	-	0.502
		N°	123	123
	Degree of adherence	Correlation coefficient	0.061	1.000
		Sig. (Bilateral)	0.502	-
		N°	123	123

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

In Table 7 the Spearman test is used, this test allows us to associate non-parametric variables. The p value> 0.005 (0.502) would indicate that there is no association between the degree of adherence and age.

Table 8. Correlation between treatment time and degree of adherence.

			TREATMENT TIME	DEGREE OF ADHERENCE
Rho de Spearman	Treatment time	Correlation coefficient	1.000	0.166
		Sig. (Bilateral)	-	0.066
		N°	123	123
	Degree of adherence	Correlation coefficient	0.166	1.000
		Sig. (Bilateral)	0.066	-
		N°	123	123

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

Table 8 shows the Spearman test, where we correlate the treatment time with the degree of adherence. And we can see that the p value> 0.005 (0.066) would indicate that there is no correlation between the variables.

Table 9. Correlation between time of infection and degree of adherence.

			TREATMENT TIME	DEGREE OF ADHERENCE
Rho de Spearman	Treatment time	Correlation coefficient	1.000	0.152
		Sig. (Bilateral)	-	0.094
		N°	123	123
	Degree of adherence	Correlation coefficient	0.152	1.000
		Sig. (Bilateral)	0.094	-
		N°	123	123

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

In Table 9 we use the Spearman test, where we correlate the time of infection and degree of adherence. Where the p-value> 0.005 (0.094), where it would indicate that there is no correlation between the variables.

Table 10. Relationship between viral load and degree of adherence.

	VIRAL LOAD	N°	AVERAGE RANGE	SUM OF RANKS
Degree of adherence	< 400	95	76,00	7220,00
	401 - 50 000	28	14,50	406,00
	Total	123		

Source: INICIB - FAMURP / Hospital Central PNP "Luis N. Sáenz".

Table 10 shows the relationship between viral load and the degree of adherence, using the Mann-Whitney U test. This test is used when we want to evaluate an ordinal variable. Where it can be seen that the p-value <0.05 (0.000), this would indicate that there is a relationship between these two variables, where a better adherence there is a lower viral load.

DISCUSSION

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In Table 9 we use the Spearman test, where we correlate the time of infection and degree of adherence. Where the p-value> 0.005 (0.094), where it would indicate that there is no correlation between the variables.

The acquired immunodeficiency syndrome is considered a public health problem of great nature due to the great magnitude of the damage observed in the morbidity and mortality of the population.

A good strategy to reduce or eliminate morbidity and mortality is HAART, for this reason, the population must have good adherence to antiretroviral treatment. One of the main problems is poor patient adherence to treatment since there are many factors associated with poor adherence. When analyzing the data obtained concerning the factors associated with adherence to HAART, we found:

The reliability or internal consistency of the instrument can be estimated with Cronbach's alpha. Cronbach's alpha value ranges from 0 to 1, the closer the alpha value is to 1, the greater the internal consistency of the analyzed items, it is said that when the alpha coefficient is> 0.7, it can be said that it is acceptable For an investigation, although some authors consider that the alpha coefficient> 0.6 is also acceptable. In this work, the alpha coefficient gave us 0.765, which indicates that it is acceptable for a scientific investigation; a similar result to the study carried out in Peru by Tafur[2] with a reliability analysis of 0.706. Another study carried out in Brazil by Remor[3] showed a Cronbach's alpha of 0.64 and another in Portugal[4] with a Cronbach's alpha of 0.709. This makes us say that our instrument has greater reliability than those compared to the others carried out in other countries and inclusive with one carried out in Peru.

Regarding the degree of adherence, this evaluation questionnaire measures the degree and classifies it into 4 levels: low adherence (<73 points), insufficient adherence (74 and 80 points), adequate adherence (81 and 85 points), and adherence strict (> 85 points), in our study the mean of the 20 questions asked to the 123 patients was 82.51, which indicates that it is within the range of adequate adherence, different results reported by the Brazilian Remor[3], who obtained 74.89 points, in Portugal Ries4 77.61 points and the Brazilian Lorscheider[5], who reported a score of 79.45, all with insufficient adherence. But there are studies where strict adherence was found, such as in Romania, by Dima6 and in Brazil by Casotti[7]. But if we compare it with Peruvian studies, Rivas[8] found a score of 73.5, which makes us indicate low adherence; while in the study carried out by Tafur[2] with a score of 74.29, the degree of adherence is insufficient. In another similar study carried out by the same author, Tafur9 obtained a score of 75.12, with insufficient adherence.

Regarding the questionnaire, it consists of 20 questions, of which 17 contain 5 answers, 2 have 2 answers, and 1 with 3 answers. Comparing with the 2 Peruvian studies by Rivas[8] and Tafur[9] where they obtained low adherence and insufficient adherence, respectively, the responses are not so different, but the difference is that in our study more than 70% of the population responded with a good alternative, which it was not the case with the two previous studies.

This questionnaire assesses 5 factors associated with adherence: adherence to treatment, history of lack

of adherence, doctor-patient interaction, patient beliefs, and strategy for taking medications, in our study all 4 of the 5 factors have a very good influence on adherence to HAART. The Remor[3] and Tafur9 studies carried out in Peru report a good influence on the factor of "history of lack of adherence" which indicates that these patients never stopped taking their medications. We can highlight that in our study it is 4 of the 5 factors that have a very good influence on adherence to treatment. The factor "patient beliefs" also influences adherence to HAART, but not as much as the other 4 factors.

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In our study, we associated the degree of adherence with sex, age, treatment time, time of illness, family-holder, and viral load. Where when relating the degree of adherence to sex; the degree of adherence with the owner-family member; and using the Chi-square test, it gave us a p value> 0.005 (0.856 and 0.242, respectively), this indicates that the relationship is insignificant. Our result is related to other studies, such as the Brazilian one whose researcher is Remor[3] where it indicates that there is no significant relationship between sex and the degree of adherence (p = 0.25); Another Brazilian study conducted by Lemos10 indicates that there is no significant relationship. The Peruvian studies that support our result are that of Tafur2 where p = 0.321 and that of Rivas8 with a value of p = 0.31.

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When relating the degree of adherence with age, the Spearman test was used and it gave us a p value> 0.005 (0.502), this would indicate that there is no significant relationship. The studies that are related to our results are that of Remor3 (p = 0.39), Resende11 and Dima6 (p> 0.005) and that of the Peruvian Tafur[2] (p = 0.356). Also, there are studies where they tell us the opposite concerning the degree of adherence and age, such as that of Lorscheider[5] where it indicates that adherence increases with age, but above 75 years, we cannot define the aforementioned in our study. that we only had patients under 65 years of age. We also related the degree of adherence to treatment time and illness time were using the Spearman test we obtained a p value> 0.005, which indicates that there is no significant relationship. These results were also found in the Tafur[2] and Remor[3] study.

And finally, we related the viral load and the degree of adherence, using the Mann-Whitney U test it gave us a p-value <0.005 (0.000) that would indicate that there is a significant relationship, that is, the higher the degree of adherence there is a lower viral load. The studies that support our result are the investigation by Reis[4] (p = 0.001) and the studies by Tafur[2] and Resende[11] where they obtained a p-value <0.005.

Annexed 1. Evaluation Questionnaire for Adherence to Antiretroviral Treatment.

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Edad	
Sexo	

Durante la última semana:		Siempre	Más de la mitad de las veces	Aproximadamente la mitad de las veces	Alguna vez	En ninguna ocación
1	¿Ha dejado de tomar sus medicamentos en alguna ocasión?					
2	Si en alguna ocasión se ha sentido mejor, ¿ha dejado de tomar sus medicamentos?					
3	Si en alguna ocasión después de tomar sus medicamentos se ha encontrado peor, ¿ha dejado de tomarlos?					
4	Si en alguna ocasión se ha encontrado triste o deprimido, ¿ha dejado de tomar los medicamentos?					

5.- ¿Recuerda que medicamentos esta tomando en este momento? _____

6	¿Cómo calificaría la relación que tiene con su médico?	Mala	Algo mala	Regular	Mejorable	Buena
		Nada	Poco	Regular	Bastante	Mucho
7	¿Cuánto esfuerzo le cueste seguir con el tratamiento?					
8	¿Cómo evalúa la información que tiene sobre los antirretrovirales?					
9	¿Cómo evalúa los beneficios que le pueden traer el uso de los antirretrovirales?					
10	¿Considera que su salud ha mejorado desde que empezó a tomar los antirretrovirales?					
11	¿Hasta qué punto se siente capaz de seguir con el tratamiento?					
		Nunca	Alguna vez	Aproximadamente la mitad de las veces	Bastantes veces	Siempre
12	¿Suele tomar los medicamentos a la hora correcta?					
13	13 cuando los resultados en los análisis son buenos ¿suele su médico utilizarlos para darle ánimos y seguir adelante?					
14	¿Cómo se siente en general desde que ha empezado a tomar antirretrovirales?	Muy insatisfecho	Insatisfecho	Indiferente	Satisfecho	Muy satisfecho
15	¿Cómo valoraría la intensidad de los efectos secundarios relacionada con la toma de antirretrovirales?	Muy intensos	Intensos	Medianamente intensos	Poco intensos	Nada intensos
16	¿Cuánto tiempo cree que pierde ocupándose de tomar sus medicamentos?	Mucho tiempo	Bastante tiempo	Regular	Poco tiempo	Nada de tiempo
17	¿Qué evaluación hace de sí mismo respecto de la toma de los antirretrovirales?	Nada cumplidor	Poco cumplidor	Regular	Bastante	Muy cumplidor
18	¿Qué deficultad percibe al tomar los medicamentos?	Mucha dificultad	Bastante dificultad	Regular	Poca dificultad	Nada de dificultad

		Si	No
19	Desde que está en tratamiento ¿En alguna ocasión ha dejado de tomar sus medicamentos un día completo/ más de uno? (Si responde afirmativamente, ¿Cuántos días aproximadamente?..........)		
20	¿Utiliza alguna estrategia para acordarse de tomar sus medicamentos? ¿Cuál?.................		

CONCLUSION

- The reliability of the questionnaire, which is measured with Cronbach's alpha, yielded 0.765, indicates that the questionnaire is very reliable.

- It is concluded that the studied population has adequate adherence to antiretroviral treatment at the PNP "Luis N. Sáenz" central hospital.

- The 5 factors that the questionnaire measures: compliance with treatment, history of lack of adherence, doctor-patient interaction, patient beliefs and strategy for taking medications, have a very good influence on adherence to HAART.

- Sociodemographic characteristics, such as age, sex, and owner-family member, are not related to the degree of adherence. The time of illness and time of treatment have no significant relationship.

- There is a very good relationship between viral load and the degree of adherence, since the higher the degree of adherence, the lower the viral load.

Correspondence: Dr. Eduardo Morales Rezza
Address: Avenida Brasil, cuadra 26, Jesús María, Lima-Perú
Telephone number: +51 987253775
E-mail: moralesrezza@yahoo.es

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