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ETHICAL ASPECTS OF PREDICTIBLE ADHERENCE OF HIV INFECTED PATIENTS ON ANTIRETROVIRAL THERAPY

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ABSTRACT

The benefits of antiretroviral therapy (ARVT) are undeniable for HIV infected patients. Universal access to HIV prevention and treatment are stipulated by international lows. The number of patients who needs ARVT greatly exceeds current resources and capacity in many countries. Priority in accessing ARVT needs to be based on utility, efficiency, fairness and non-discrimination principles. Adherence is crucial for successful of chronic ARVT. Presumed adherence criteria are an ethic issue. The present study compares the presumed adherence (PA) and the effective adherence (EA) on 231 HIV patients with ARVT. PA was estimated before the current ARVT, considering educational level, risking behaviours (drugs, alcohol use and smoking), familial support and living aria residence. EA was calculated based on self-reported questionnaire of ARVT missing doses and was validated by undetectable HIV viral load. PA was estimated on 127/231 patients and EA on 149/231. Correlation between PA and EA have no statistical significance (p=0,028; OR=0,539). PA differed to EA in 29% cases. In conclusion, PA is an unreliable criterion to accede ARVT.

KEYWORDS*: HIV, adherence, antiretroviral*

1.Introduction

Over 33 millions people are living with HIV/AIDS in the whole world. In Romania 9372 HIV infected patients are under medical surveillance and 7434 are receiving antiretroviral therapy (ARVT). The benefits of ARVT are undeniable for HIV related surviving and quality of life because of changing perspective from fatal disease to chronic disease.

According to the human rights, universal access to HIV prevention and treatment are stipulated by international lows as obligations all over the world [9]. According to World Health organisation (WHO), the number of patients who needs ARVT greatly exceeds current resources and capacity in many countries. Based on utility, efficiency, fairness and non-discrimination principles, additional criteria may be necessary in order to specify who should have priority in accessing ARVT [2].

Adherence, within the meaning of responsible keeping the medical prescription, is crucial for successful of chronic ARVT.

Undetectable HIV viral load is the main aim of ARVT and depends on over 95% adherence [4]. Presumed adherence criterion to accede ARVT is sustained on utility and efficiency principles, but

ethic issues on non-discrimination and fairness are pinpointed [3].

Objective

The objective of the study was to assess the predictive adherence (PA) as criterion to accede ARVT.

2. Materials and methods

This is a prospective study from 31.01.2004 to 31.01.2009. Predictive adherence (PA) and effective adherence (EA) under ARVT was assessed on 231 HIV infected patients. The results were statistical compared. PA was estimated before ARVT initiation on naive patients or before the last ARVT change on experienced patients. The patients were followed up at least 12 months for the same treatment. Adherence was predicted by the score based on social and behavioural criteria: educational level, living aria, familial relationship, smoking and alcohol use (table 1).

Table 1: *Prediction score of adherence and nonadherence on ARVT*

SCORE	-1	0	+1	+2
Education level	Unstudiet	< 4 forms	4-8 forms	> 8 forms
Alchool use	regularly	casually	denie	
Smoking		smoking	nosmoking	
Familial relationship	ostilă/ nesuportivă	indiferentă/ absentă	suportivă	
Living aria		rural	urban	

Prediction score range between minimal --3p and maximal +6p. Scores over 1 are considered predictable for adherence, while scores 1 or less predict nonadherence. Self report questionnaire specifies EA if more than 95% of prescribed ARV doses are used during a month. The questionnaire is validated if HIV viral load is undetectable or trend to decline in the last 6 months.

HIV viral load was performed by polymerase chain reaction (PCR).

Statistical analysis used Microsoft Excel Analysis Tool Pack and XLStats software programme.

The study was approved by Ethical Committee of Infectious Diseases Hospital Galați. Adherence follow-up and ARVT administration were consent by HIV participants.

3. Results

The characteristics of the patients were: median age 20 [18; 53]; sex ratio M/F: 110/111; rate urban/rural living aria: 111/110 (table 2).

Tabel 2. *The characteristics of HIV patients with ARVT from Infectious Diseases Hospital Galați*

Viral load (last 6 months)	Detectable decresing	26%
	Undetectable	38%
	Detectable standing/increasing	36% [1300; 175342]
Median experienced regiments		2 [1; 8]
Median age		20 [18;53]
Sex ratio M/F		1,17
Living aria ratio U/R		1,32

PA by socio-behavioural score was evaluated on 55% (127/231) patients. EA was estimated on 64% (149/231) patients (figure 1).

PA was correlated with EA (p=0,028; OR=0,539). Disparities between PA and EA were found on 29% patients.

The power of the predictive adherence score was calculated based on contingence table (table 3):

-Sensibility: 72/147= 49%

-Specificity: 29/84= 34,5%

-Positive predictive value: 72/127= 56,6%

-Negative predictive value: 29/104= 27,8%

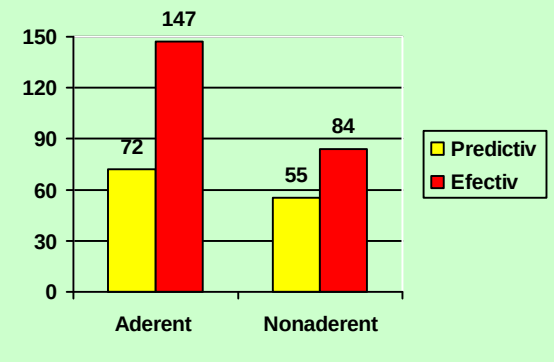

Figure 1. *The distribution of patients by adherence*

Table 3. *Adherence score evaluation*

	Yes (real)	Not (real)	
Yes (predictive)	72	55	127
Not(predictive)	75	29	104
	147	84	231

4. Discussion

According to European recommendations, the Romanian national guidelines for the management of HIV infected persons provide complex and expensive therapeutically regiments based on clinic, immunologic and virologic criteria. Correctly implemented ARVT is increasing survive expectation of HIV patients [9].

The problem of HIV/AIDS is considered a priority of the Romanian health system [6].

The access to the antiretroviral treatment and to the opportune care is a fundamental right, according to “The National HIV/AIDS Strategy 2008-2013” from Romania. Actually, the HIV/AIDS budget is systematic “historical” allocated in the last years. Consequently, it is difficult to initiate new treatments or to change failure treatments [8].

Over more, available antiretroviral medication runs short for the current monthly treatments that are distributed by “first come – first served” principle. Therefore, the inconsequent access to ARVT is contradictory to the efforts of counselling the patients to be self-conscious about the benefits of medication and to be involved for adherence. The confused perception regarding the adherence emphasise feelings as outsider, uselessness or fail.

The main ethical issue is to balance between ARVT necessity and meagre economic resources. How to share the insufficient medication? Are education or living aria discriminatory reasons? How to honour the rights to be treated with non-discrimination? Involving the patient as partner for himself medical decisions and procedures should be a way. The adherence is proving the responsibility. Is possible to predict the adherence?

Previous studies evidenced correlations between the adherence during ARVT and the results of self-reports questionnaires, pharmacy reports, biologic markers, pharmacokinetic markers, but a standardised method for adherence measurement is not available yet [4]. Undetectable HIV viral load is able to prove the ARVT adherence. On the other hand, detectable HIV viral load should have additional reasons: drug resistance, drugs interactions, drug intolerance or adverse reactions. Detectable HIV viral load should represent development of viral resistance to the drugs, the risk to the spread of drug resistant HIV strains, limited future options of the treatment regiments and higher costs of these regiments.

Adherent and nonadherent profiles were assessed based on various criteria. Psychological, social and educational procedures are applied in order to improve the adherence. Theoretical, poor basic adherence should be improved after these interventions [3]. How relevant is predictive adherence for priority of treatment access? How to predict adherence? Is predicted adherence different to effective adherence?

The present study evidences that basic educational level, familial support and the absence of

other behavioural risk factors as smoking and alcohol use are favourable factors for adherence. Prediction score over 1 signify the probability, but not the insurance of adherence. Lower scores don’t shut out the adherence.

The frequency of wrong positive evaluations (43,3%) was inferior to wrong negative evaluations (72,2%). Low sensitivity and specificity are characterising the prediction score of adherence. Regarding the survival chance of many patients, to select the ARVT access based on prediction score of adherence is discriminatory and opposite to ethical principles of medical practice.

5. Conclusions

Predictive adherence on antiretroviral treatment is a test with low sensibility and specificity.

Effective adherence was proved on 64% HIV patients from Galați.

Universal access to ARVT should not be limitted by predictive adherence.

Medical and psycho-social procedures are required in order to improve the adherence is required for HIV patients recorded in Infectious Diseases Hospital Galați.

Achievement of national HIV/AIDS strategy should be supported by coherent allocation of founds for the treatment of all eligible patients.

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