The use of alcohol and drugs and HIV treatment compliance in Brazil

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The Casa da AIDS offers specialized integral and multidisciplinary service to HIV/AIDS patients.

Please choose the wrong statement.
Alcohol use is related to non compliance to antiretroviral therapy.

a) Only alcohol dependent patients are in higher risk for non compliance to antiretroviral therapy.
b) The barriers for a good compliance to AIDS treatment are similar to other chronic diseases.
c) Complex schedule of the medications, side effects that result in poor tolerability, factors related to the patients' lifestyle and the doctor-patient relationship can impair a good compliance.
d) None of the above.
e) I do not know, I'm coming to learn.

Epidemiology

BRAZIL	Sample
Alcohol dependents: 12,3%	5%
Alcohol use	
Lifetime: 74,6%	95,5%
Last year: 49,8%	70%
Last month: 38,3%	51%

AIDS CASES (Males over 13)

Categoria de exposição	1980-1994		1999		2006	
	N	%	N	%	N	%
Homosexual/ Bisexual	28134	39,8	4885	29,0	3219	27,9
Heterosexual	10180	14,4	5480	32,6	4915	42,6
IDU	18888	26,7	3107	18,5	1078	9,3

AIDS CASES (Females over 13)

Categoria de exposição	1980-1994		1999		2006	
	N	%	N	%	N	%
Heterosexual	11101	70,0	8250	91,7	6652	95,7
IDU	3802	24,0	675	7,5	241	3,5

Group of Studies on Alcohol and Drugs

Psychiatric Institute of Hospital das Clínicas

(Medical Center Hospital)

University of São Paulo Medical School

Background

- The advent of the HAART brought a change in the model of HIV disease. In the last years, AIDS has become, for most of the patients, a chronic disease. In this model, compliance to treatment has become an important issue.

- The non compliance is pointed as one of the main factors associated to the therapeutic flaw. The barriers for a good compliance are similar to other chronic diseases: complex schedule of the medications, side effects that result in poor tolerability, factors related to the patients' lifestyle and the doctor-patient relationship.

Background

- **Another barrier for a good compliance is the use of alcohol or drug.**

- **Drug and alcohol use seems to have a significant impact in the adherence to the HAART. Drug and alcohol users tend to miss a dose of their medications more often than non users.**

- **HIV viral load suppression was negatively associated with use of drugs or alcohol in the previous 30 days.**

Palepu et al., Addiction. 2004 Mar;99(3):361-8.
Nachega et al. J Acquir Immune Defic Syndr. 2006 Dec 1;43 Suppl 1:S127-33.

Objectives

- **This research project has the following objectives:**

- **1. Evaluate the use of alcohol and other drugs by patients in an HIV treatment center.**

- **2. Evaluate the influence of alcohol and drug consumption in the HIV treatment adherence.**

Methods

- **455 patients were randomly selected from a population of approximately 3.000 individuals in an HIV treatment service.**

- **These subjects were assessed for alcohol and drug use, depression, anxiety and adherence to High Active Antiretroviral Therapy (HAART).**

Methods

The following instruments were used:

1. Socio-demographic questionnaire

2. MMSE (Folstein et al., 1975)

3. SCID 2.0 The sections for substance abuse and dependence, depression and anxiety.

6. AUDIT. Alcohol Uses Disorders Identification Test

7. SDS. Severity of Dependence Scale

8. HAM-D

9. SMAQ. Simplified Medication Adherence Questionnaire

After the interview, the researchers also registered the more recent values of CD4+ cells counting and viral load.

Methods

- **Patients who drank alcohol more than 4 times or had any use of an illicit drug in the last month were selected to participate in a three 90 minutes intervention to discuss the use of alcohol/drugs and their adherence to HAART.**

- **The patients were interviewed again after the intervention (AUDIT, SDS and SMAQ) and six months later (AUDIT, SDS, SMAQ, CD4 cell count and viral load).**

Adherence

Lifetime

Lifetime		
No	yes	Total
315 (70%)	134 (30%)	449

Last week

Didn't take the pills at last once in the last week		
Didn't take	Took	Total
121 (27%)	328 (73%)	449

Sociodemographic Data

Adherence

Gender	No	OR	95% CI	
Men (52%)	64 (27%)	,982	,647	1,49
Women (48%)	57 (27%)	–	–	–

When they report that they drunk during the last month
Odds ratio alcohol women vs men 1,85

When they do not report
Odds ratio no alcohol women vs men 0,38

Sociodemographic Data

Education

	Adherence			
Education (in years)	**No**	**OR**	**95% CI**	
< 4 (4,9%)	3 (13%)	–	–	–
>4 and < 8 (31,5%)	42 (35%)	2,68	,755	9,56
>8 and < 11 (38,5%)	46 (37%)	2,29	,648	8,11
College (25%)	30 (25%)	2,28	,632	8,29

Sociodemographic Data

Adherence

	Total	No	OR	95% CI	
Employed	238 (53%)	68 (29%)	–	–	–
Unemployed	58 (13%)	13 (22%)	,722	,367	1,42
Retired	61 (14%)	9 (15%)	,433	,202	,927*
Social Security	44 (10%)	12 (27%)	,938	,456	,1,92
Housewife	39 (8%)	13 (33%)	,1,25	,607	2,57
Not available	9 (2%)	6 (67%)	5,00	1,21	20,5

* $p < 0,05$

Sociodemographic Data

Age

Min	Median	Mean	Max.
19	41	41,66	66

Adherence

	No	Yes	Total	
Age	39,97	42,45	41,66	p=0,05

Wage

Min.	Median	Mean	Max
0	2	2,72	28,5

Wage (in number of minimum wage – US$ 210)

Sociodemographic Data

Transcription

Adherence

HIV transmission	No	OR	95% CI	
Homosexual (25%)	36 (31%)	–	–	–
Bissexual (2%)	2 (22%)	1,64	,794	3,41
Heterosexual (54%)	64 (26%)	1,03	,191	5,58
Transfusion (1,5%)	1 (14%)	1,29	,657	2,54
Hemofilia (0,5%)	1 (50%)	,603	,066	5,46
Not defined (17%)	17 (23%)	,211	,211	61,82

HCV　　　**Adherence**

HCV	No	OR	95% CI	
No (85%)	106 (28%)	–	–	–
Yes (15%)	15 (22%)	,809	,442	1,47

Viral Load

Viral load		
	> 50 copies/ml	undetectable
Adherence	102 (23%)	332 (77%)
No adherence	79 (67%)	39 (33%)
		_

p = 0,008   OR (95% C I)   1,89 (1,18-3,02)

Viral load				
1st Quartil	Median	Mean	3rd Quartil	Max.
2254	8029	74360	60070	826000

CD4 cells count

CD4 cells count			
Min.	Median	Mean	Max
3	531	571,2	749,2

Number of CD4+ cels and the presence of Alcohol Dependence

	CD4+					
	<200 cells/mm^3		200> e <500 cells/mm^3		>500 cells/mm^3	
	n	%	n	%	n	%
Alcohol Dependence						
No	35	8	158	38	220	54,0
Yes	9	20,5[1]	6	3,7	9	3,9

[1] p < 0.001

Alcohol use, abuse and dependence

*comparado a não estar aderido e não ter dependência nem abuso de álcool

		Adherence				
		%	**No** **n (%)**	**OR**	**95% CI**	
Last year alcohol use	**Yes**	70	93 (30%)	1,67	1,03	2,71
	No	30	28 (20%)	–	–	–
Alcohol Dependence*	**Yes**	5,3	10 (42%)	2,25	1,01	5,29
Alcohol Abuse*	**Yes**	18.5	29 (35%)	1,70	1,01	2,85
Without alcohol abuse or dependence	**Yes**	76,2	82 (24%)	–	–	–

Drug use, abuse and dependence

Adherence

			No			
		%	n	%	OR	*95% CI*
Lifetime drug use	Yes	45	138	69	1,40	,921-2,12
	No	55	190	76	–	–
Last year drug use	Yes	14	21	34	1,47	,829-2,60
	No	86	100	26	–	–
Drug dependence	Yes	6	11	23,4	,811	,399-1,65
	No	94	110	27,4	–	–
Last year Cocaine use	Yes	7	12	26	1,79	,842-3,80
	No	93	109	39	–	–
Last month cocaine use	No	96	115	26,6	–	–
	< 1x/week	2,2	4	40	1,83	,509-6,62
	> 1x/week	1,6	2	28,6	1,10	,211-5,76

Depression and Anxiety Disorders

Adherence

		%	No n	%	OR	95% CI
Depression	**Yes**	5	11	52	3,18	1,31 – 7,69
	No	95	110	26	–	–
Any Anxiety	**Yes**	10	5	5	1,22	,601 – 2,50
Disorder	**No**	90	106	95	–	–

Results

- **104 patients used alcohol at least 4 times or any ilicit drug in the last month (23%)**

- **69 accepted to participate in the intervention program**

- **We could not reach 12 subjects**

- **57 joined the intervention**

Intervention Group

- Did we choose a good inclusion criteria?

- More men (75x25%) in the intervention group than in the whole the sample (52x48%) (p=0,003)

Intervention Group

- No other differences in sociodemographic variables   (IG X Sample – IG)

- Adherence (p=0,455)

- Detectable viral load (p=0,845)

- Depression (p=0,419)

SDS, AUDIT, CD4+ cells and last week adherence to HAART results for the intervention group

	Intervention group 1st interview	Intervention group 2nd interview (after intervention)	Intervention group 3rd interview (6 months after)
	Mean (SD)	Mean (SD)	Mean (SD)
SDS	3,6 (8,2)	3,3 (4,2)	2,5 (3,5)
AUDIT	8,4 (7,9)	8,4 (7,9)	5,8 (6,8)*
CD4+ cells	471 (277)	–	531 (289)
	n (%)	n (%)	n (%)
Last week adherence to HAART[1]	28 (68,3%)	33 (80,5%)	28 (68,3%)

*p = 0,03
[1] Last week adherence to HAART among the intervention group. There are no diferences between total sample (73%) and intervention group, first and second interviews (80.5%) and third interview (68.3).

Multiple regression

No Adherence	OR	95% CI	p
Last year alcohol use	,481	,275 - ,841	,010
Alcohol dependence	2,90	,956 – 8,85	,050
Alcohol abuse	2,16	1,17 – 3,98	,014
Age	,968	,939 - ,999	,043
Hamilton	1,05	1,02 – 1,08	,000
Employed	1		
Unemployed	,508	,232 – 1,11	,090
Retired	,453	,198 – 1,03	,060
Social security	,810	,362 – 1,81	,609
Housewife	1,12	,490 – 2,59	,777
AUDIT < = 8	1		
AUDIT > 8	,450	,196 – 1,03	0,059
Detectable viral load	2,06	1,23 – 3,46	0,006

Discussion

- **Adherence and CD4 cell count are high**

- **Use of alcohol in this sample is frequent**

- **Depression and alcohol use/abuse/dependence are related to non adherence**

Discussion

- **Alcohol dependence was associated to CD4 cells count less than 200 cells/mm^3 (AIDS).**

- **According to Friedman et al. (2006), heavy use of alcohol and drugs are associated with several aspects of immunologic function.**

- **AUDIT score reduction seems to show that alcohol consumption in this sample could be changed using a brief intervention. The small amount of time may explain the fact that we did not find a difference in CD4 values.**

Gender and Age

- In the present study, men had a better adherence than women among those who do not drink. Other studies also found a higher adherence among men (Forgaty et al., 2002, Turner et al., 2003 and Godin et al., 2005).

- One of the possible reasons for these differences may be the fact that women may present side effects of medications more often than men.

- Women tend to have more psychiatric disorders than men (Cook et al., 2002).

- Older patients had a better adherence than younger ones.

- This difference may be explained by the stability of life of the oldest. Such stability could be associated with higher adherence. Older patients tend to live for more time with the infection and may have learned to take care of their health and treatment schedule (Murphy et al., 2004).

Discussion

- **Depression was related to no adherence to AIDS treatment**

- **Treatment with antidepressants may improve self-reported adherence.**

  Dalessandro et al., J Clin Psychopharmacol. 2007 Feb;27(1):58-61.

- **Among depressed patients, those receiving treatment reported significantly lower mean depression scores. The treatment enhanced HIV treatment readiness by better preparing patients prior to initiating HAART.**

  Balfour et al, AIDS Care. 2006 Oct;18(7):830-8.

- **This data support the need of a mental health team in AIDS treatment setting**

Limitations

- **Our data come from self report. This fact can overestimate the compliance since some patients can omit their flaws in taking the medicines fearing some type of retaliation from the staff.**

- **SMAQ (self-report) was applied without tablet counting or electronic monitoring.**

- **The evaluated patients were coming to medical appointments what can overestimate the adherence rate.**

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